

Imagining Age-Friendly “Communities Within Communities”:  
Uncovering Social and Physical Barriers to Age-Friendly Transportation

by

Madeline Lamanna

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Carleton University  
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Madeline Lamanna

### **Abstract**

Transportation policy and research extensively consider physical barriers to transportation, but often overlook social barriers to using transportation. Given that accessible transportation is associated with decreased prevalence of social exclusion and isolation among seniors who have been identified as most at risk (e.g., seniors with language barriers and mobility limitations), ethnographic field research was conducted in Ottawa to observe seniors' transportation use and explore potential links between transportation poverty and social disadvantages. Interviews and informal discussions were also conducted with seniors, seniors' service providers, bus operators, and transportation managers. The inclusion of multiple perspectives provided insight into seniors' transportation needs while considering how those needs are (or are not) translated into practice. Barriers to transportation involved the interaction between transport and social disadvantages. However, promising practices and/or facilitators of transportation appeared to involve initiatives that aimed to reduce transport poverty by addressing transportation inequities that resulted from social disadvantages.

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## Chapter 1: Introduction

Public transportation is not as ‘public’ as intended; public transportation initiatives do not meet the needs of all groups of seniors. The transportation sector tends to systematically exclude specific groups from access to transportation, which, in turn, leads to social consequences (Lucas, 2012; Lucas, Mattioli, Verlinghieri, & Guzman, 2016). Accessible, shared transportation (especially public transportation) is a significant factor in reducing social exclusion and isolation for seniors from populations that have been identified as most at risk for social exclusion and isolation (e.g., seniors with language barriers, mobility limitations, declining cognitive abilities; Bittner et al., 2011; Chaudhury et al., 2012; Emler & Moceris, 2012; Klassen & Allen, 2005; Levasseur et al., 2015). Without accessible and affordable transportation, many seniors cannot fulfill basic needs such as maintaining social connections, grocery shopping, and obtaining community and health services (Lucas et al., 2016; WHO, 2007).

In June 2019, field research was conducted in the City of Ottawa. Ethnographic field research involved observations of older adults and their interactions with other public transportation users and the physical environment, as well as informal discussions with older adults and seniors’ service providers. Additionally, interviews were conducted with bus operators and managers from the Ottawa-Carleton Transportation Commission (OC Transpo). Seniors, seniors’ service providers, bus operators, and transportation managers were included as participants in order to gauge who is represented—and who might be missing—in current public transportation initiatives and policy. The overall goal of this research is to inform transportation decision-makers and policymakers of the

barriers to accessing public transportation for seniors, using a multi-perspective approach with particular attention to diversity. This research also highlights potential solutions—“promising practices”—that may help to alleviate these problems.

## **Main Concepts**

The concepts described below are used in the research literature, transportation policy, and were used when developing research questions for the present study. Specifically, the terms used to understand the relationships between access to public transportation, age-friendliness, and health outcomes are: *social determinants of health* including *social exclusion*, *social isolation*, and *transportation-related social exclusion*, *age-friendly communities*, and *transport poverty*.

### **The Social Determinants of Health**

The social determinants of health approach is the theoretical framework guiding this project. This approach is particularly useful for exploring the relationships between health outcomes (including physical, mental, and social health) as well as an individual’s ability to achieve “personal aspirations, satisfy needs, and cope with environment” (Raphael, 2016, p. 3), all while considering the distribution of economic, social, and societal resources. This approach focuses on how the allocation and organization of economic and social resources in society impacts health, thereby considering how policy shapes the health of individuals and communities (Raphael, 2016; Braveman & Gottlieb, 2014; Graham, 2004). Therefore, this framework was chosen to explore how policy decisions about transportation resources differentially impact the health of various groups of seniors.

The factors included in the social determinants of health framework are constantly being refined; however, in Canada, the social determinants of health were identified with relevance to Canadians' health, relevance to policy, and temporal relevance (Raphael, 2016). Therefore, the decisions made at a government level impact the population's living conditions and differentially influence health outcomes depending on factors such as: "Aboriginal ancestry, disability, early life, education, employment and working conditions, food security, gender, geography, health care services, housing, immigrant status, income and its distribution, race, social safety net, social exclusion, unemployment and employment security" (Raphael, 2016, p. 11).

Broadly speaking, social determinants of health research focuses on the links between health outcomes and social exclusion due to poverty, low-income, and unemployment resulting in an inability to purchase goods or services and a lack of participation in society (Warburton et al., 2013; Serrat et al., 2018; Raphael, 2016; Barry, 2002). Important to the current study, research concerning the social determinants of health has recognized the importance of the life-course perspective (Raphael, 2006). However, while social exclusion is itself considered to be a social determinant of health (Raphael, 2016), little research has considered aging extensively with regard to social exclusion (especially given the attention that social exclusion has received in both research and policy fields; Warburton et al., 2013; Walsh, Scharf, & Keating, 2017). Indeed, aging is not often explicitly included as a social determinant of health (cf. Marmot & Wilkinson, 2006), even when the life stage of early childhood is considered in the framework. Furthermore, research has a tendency to focus on older adults' physical

and cognitive health as opposed to social health, as well as a focus on social exclusion in people of working age, children, and youth (Warburton et al., 2013; Walsh, Scharf, & Keating, 2017).

Experiencing differences in social and economic conditions throughout one's life has an impact on health outcomes as we age (Raphael, 2006). Therefore, some seniors experience health disparities, not only compared to other age groups, but also within their age group. Disparities within one's own age group are often due to the social determinants of health (Raphael, 2006; 2016). For example, seniors from ethnic minority groups experienced more mental health problems compared to seniors from ethnic majorities because they were less likely to identify symptoms of those problems; likewise, seniors with low income were more likely to experience mental and physical health problems because their seniors' benefits were not enough to cover needs for healthy food, health care, etc. (Kim et al., 2011; Guruge, Thomson, & Seifi, 2015; McIntyre, Kwok, Emery, & Dutton, 2016).

I will use the social determinants of health approach to focus on the experience of social exclusion as it relates to transportation due to a lack of participation in decision-making or lack of connectivity to family, friends, or community (Burchardt, Le Grand, & Piachaud, 2002; Warburton et al., 2013). Older adults are often socially excluded and are more likely to experience social isolation due to life changes such as retirement or widowhood, ageism or discrimination, inadequate housing, and/or limited transportation (Warburton et al., 2013; Phillipson & Scharf, 2004; Barnes, Blom, Cox, Lessof, & Walker, 2006). Moreover, social exclusion and social isolation are associated with

various negative health outcomes, including stress. Meanwhile, previous research has suggested that access to transportation promotes social inclusion through access to social networks and connections (Engels & Liu, 2011; Lamanna et al., 2019). However, there are still groups of seniors that experience exclusion from transportation, which can then exacerbate further social exclusion.

### **Social Exclusion and Social Isolation**

This research will focus on “exclusion from social production” (Raphael, 2016, p. 390), which is defined as the “lack of opportunity to participate and contribute to social and cultural activities” (Mikkonen & Raphael, 2010, p. 32). This definition is most related to research regarding social isolation, which is a prevalent issue affecting older adults and closely linked to social exclusion (Emlet & Moceris, 2012; Nicholson, 2012; Nicholson, 2009). Social exclusion can result in:

*The inability to participate in the normal relationships and activities, available to the majority of people in a society, whether in economic, social, cultural or political arenas. It affects both the quality of life of individuals and the equity and cohesion of society as a whole. (Levitas et al., 2007, p. 9)*

The promotion of social inclusion globally has, therefore, recognized the need to address “barriers or inequalities that prevent individuals or groups from taking a full role in society” (Warburton, Ng, & Shardlow, 2013, p. 4).

Social exclusion and social isolation are concepts that are often discussed in relation to one another given that they are closely related (Barry, 2002; Van Regenmortel

et al., 2016; Saito, Kondo, Kondo, Ojima, & Hirai, 2012). Social isolation is defined as an individual's or a group's lack of contact with others or lack of participation and social activity (Barry, 2002; Saito et al., 2012). Therefore, the definition of social isolation primarily encompasses a lack of social resources or relations (Van Regenmortel et al., 2016). In contrast, social exclusion can involve material deprivation, isolation (physically and socially), and social inactivity (Saito et al., 2012). However, while social isolation can be voluntary or involuntary (i.e., people can voluntarily socially isolate themselves from others), social exclusion refers to the process of individuals or groups being involuntarily isolated by structures, hostility, or discrimination in society (Barry, 2002).

Social isolation is a prevalent issue among older adults, and often results from a shrinking social network and a lack of meaningful relationships with others, also often coinciding with decreased well-being and quality of life (Emlet & Moceri, 2012; Nicholson, 2012; Nicholson, 2009). Older adults commonly experience social isolation due to the death of family and friends, living alone, having impaired memory, having decreased functional abilities, and/or experiencing poor health (Nicholson, 2012; Iliffe et al., 2007). Although the relationship between social isolation and poor health outcomes may be reciprocal in nature, there is some evidence that social isolation negatively impacts the health of older adults by increasing the risk for heart disease (Boden-Albala, Litwak, Elkind, Rundek, & Sacco, 2005), cognitive decline (Beland, Zunzunegui, Alvarado, Otero, & del Ser, 2005), mortality (Eng, Rimm, Fitzmaurice, & Kawachi,

2002), dementia (Fratiglioni, Wang, Ericsson, Maytan, & Windblad, 2000), and falls (Faulkner, Cauley, Zmuda, Griffin, & Nevitt, 2003).

Like social isolation, social exclusion can result in fewer meaningful relationships and opportunities for participating in society (Warburton et al., 2013; Serrat et al., 2018). According to results from the *English Longitudinal Study of Aging* (ELSA), social exclusion can occur in multiple areas of social life, such as relationships, social activities, and cultural activities (Barnes et al., 2006). Additionally, although declines in health can be a risk factor for social exclusion, social exclusion has also been found to contribute to declines in physical health for older adults (Sacker, Ross, MacLeod, Netuveli, & Windle, 2017; Macleod, Ross, Sacker, Netuveli, & Windle, 2019). Moreover, in addition to declines in physical health, results from the ELSA revealed that social exclusion can also impact seniors' quality of life and well-being (Barnes et al., 2006).

### **Social Exclusion and Stress**

Social exclusion has also been associated with high levels of stress—both when self-reported and measured objectively (Wang, Braun & Enck, 2017; Beekman, Stock, & Marcus, 2016; Pfundmair et al., 2015; Blackhart, Eckel, & Tice, 2007). For example, participants who were told that others did not want to work with them experienced increased cortisol and psychological distress after experiencing social rejection (Blackhart et al., 2007). Building on this research, findings from another study revealed that if participants had a high need to belong to a group, exclusion resulted in higher levels of cortisol, self-reported stress, and negative affect compared to included participants or people with less need to belong (Beekman et al., 2016). This is important

to keep in mind given that some older adults may want to belong to various groups, but face barriers that lead to exclusion.

Further, it has been found that people from individualistic cultures show more physiological stress reactivity when faced with social exclusion compared to people from collectivist cultures. In this regard, people who live within collectivist cultures are often protected from exclusion due to social support; however, if they are disconnected from their social network and no longer have social support, they are also apt to experience stress from social exclusion (Pfundmair et al., 2015). In this way, the stress resulting from social exclusion seems to be buffered by group identity and a sense of belonging to a group (Knowles & Gardner, 2008; Pfundmair et al., 2015). However, chronic rejection and separation from groups across the life course might alter neural processes that help regulate emotions during social exclusion, leading to an increased risk for depression and anxiety in later life (Wang et al., 2017).

### **Transportation-Related Social Exclusion**

Relevant to this current research project, access to transportation is considered a risk factor for social exclusion (Engels & Liu, 2011; Serrat et al., 2018; Walsh et al., 2017). In this case, exclusion from transportation can result in problems accessing health services and social activities (Walsh et al., 2017). Transportation not only enables seniors to be able to grocery shop or visit the doctor, but it also allows seniors to access social networks (Engels & Liu, 2011; Lamanna et al., 2019). Effectively, older adults experience exclusion from social relationships and activities when they cannot use public transportation or when they do not have access to a personal vehicle (Barnes et al.,

2006). Therefore, transport and social disadvantage influence access to social networks, goods, and services which, by this definition, is classified as experiencing social exclusion (Lucas, 2012; Lucas et al., 2016).

Exclusion from transportation can be influenced by many factors, including geographic location, availability of transportation for non-driving seniors, gender, mobility and accessibility of transit, financial barriers, knowledge and communication of alternative transportation, and language barriers (Barnes et al., 2006; Engels & Liu, 2011; Lamanna et al., 2019; Levitas et al., 2007; Serrat et al., 2018; Shergold & Parkhurst, 2012). Other social determinants of health such as disability, gender, income, ethnicity, and geography, for example, can also intersect with access to transportation, which in turn may exacerbate social exclusion (Lui et al., 2011; Warburton et al., 2013). Indeed, intersectionality across various aspects of social location and inaccessibility of transportation may create overlapping disadvantage.

Of interest in the current study is how social exclusion might disproportionately impact the health of seniors compared to other age groups, but also across different groups of seniors. Social exclusion can occur across the life course and for seniors who are diverse in terms of gender, ethnicity, culture, income, education, and location (Lui, Warburton, Winterton, & Bartlett, 2011; Warburton et al., 2013). Therefore, in this research, the relationship between transport disadvantage and social disadvantages (that are comprised of various social determinants of health, or lack thereof), are explored. These social disadvantages are not only inequalities that directly influence health

outcomes but, combined with transport disadvantage, may influence social outcomes, and social inclusion and/or exclusion in particular.

### **Age-Friendly Communities (AFCs)**

As the population of seniors rapidly increases across the developed world, the World Health Organization's (WHO) Age-Friendly Community (AFC) movement was created with the aim to enhance seniors' health and quality of life (WHO, 2007). Participating cities and/or communities adapt to meet the social and physical needs of older adults by addressing the WHO's eight AFC dimensions: outdoor spaces and buildings; transportation; housing; respect and inclusion; social participation; civic participation and employment; communication and information; and community supports and health services (Jeste et al., 2016; WHO, 2007). AFCs can provide older adults with opportunities to volunteer, engage with their communities, and participate in activities that create and maintain meaningful social connections, thereby reducing social isolation and improving well-being (Emlet & Mocerri, 2012). By reducing barriers to public transportation, older adults will have more opportunities to access beneficial services and programs (WHO, 2007). However, lack of access to transportation can result in social exclusion and social isolation of older adults (Bittner, Fuchs, Baird, & Smith, 2011; Chaudhury et al., 2012; Emlet & Mocerri, 2012; Klassen & Allen, 2005; Levasseur et al., 2015).

The AFC framework influences transportation policy in Ottawa. However, although the WHO has suggested that the AFC framework be modified to fit the needs of the community and/or city in which it will be implemented (WHO, 2007), there is an

increasing need for AFC initiatives to fit the needs of diverse older adults (Menec, Means, Keating, Parkhurst & Eales, 2011; Moulaert & Garon, 2016; Syed et al., 2017). The AFC framework states that the social, economic, personal, and environmental determinants of active aging are all situated within the context of gender (WHO, 2007). Although the WHO acknowledges gender and culture, these concepts are not thoroughly integrated into the AFC framework. In this regard, some AFCs—including the transportation initiatives therein— might not be “age-friendly” for all older adults. Moreover, older adults are not only distinctive in comparison to other age groups but are often heterogeneous within their own age demographic as well (Menec et al., 2011; Kim, 2011), in terms of age, gender, health, culture, and mobility considerations. Thus, “communities within communities” of older adults often exist, comprising smaller groups of people from different cultures and backgrounds with various physical, psychological, and social needs. While AFCs should acknowledge and accommodate these differences, they often take a “one-size-fits-all” approach (Menec et al., 2011; Syed et al., 2017).

### **Transport Poverty**

The definition of *transport poverty* established by Lucas (2012) is most in line with how access to transportation for older adults is conceptualized in the current project. When social disadvantage and transport disadvantage interact to influence access to transportation, transport poverty occurs (Lucas, 2012). Therefore, I have chosen to refer to the interaction between problems with physically accessing transportation and social inequalities (such as income, mobility limitations, or language barriers) as transport

poverty. Transportation-related social exclusion cannot be addressed with a “one-size-fits-all” approach. Transportation policy and research is often focused on physical access to transportation or physical exclusion from transportation for older adults (Currie & Delbosc, 2011; Gharebaghi, Mostafavi, Chavoshi, Edwards, & Fougeyrollas, 2018; Hine & Mitchell, 2001; Lucas, 2012; Toohey et al., 2018), but there is an absence of social considerations in policy and research. Age and social inequalities such as language barriers, income, mobility limitations, and gender might put seniors at risk for both exclusion from transportation and social exclusion.

Without access to transportation options, people become ‘poor.’ Not unlike income poverty, lack of access to transportation can result in an inability to fulfil basic needs. For example, independence is valued in society, and yet, without access to transportation, seniors can lose their independence (Bryanton et al., 2010). Inaccessible transportation can also lead to the loss of social networks and connections, access to goods and services, and opportunities for participation in decision-making (Lucas, 2012). In this regard, physical accessibility overlaps with social factors; for example, language must be considered when addressing wayfinding signs at bus stops and stations. Due to this overlap, physical access and social access should not be considered separately. There are, however, instances where policy or transportation initiatives do not fully consider social access, which will be further discussed later in this thesis. I will be using the terms *physical accessibility*, *physical access*, and *physical barriers* to discuss initiatives that tend to focus on transportation infrastructure or design elements that are associated with the built environment (Lui, Everingham, Warburton, Cuthill, & Bartlett, 2009). In

contrast, I will be using the terms *social accessibility*, *social access*, and *social barriers* to address the ways in which social determinants of health and social inequality impact access to transportation. These factors move beyond being physically able to use transportation (e.g., to get to stations and stops or being able to navigate the transportation system), to also promote social inclusion (Lui et al., 2009).

### **This Thesis Project**

Throughout my undergraduate degree at the University of Toronto, I was inclined to study research topics that focused on the Social Determinants of Health, the health of seniors, and Age-Friendly Communities. Meanwhile, during my summer jobs at Metrolinx and the Toronto Transit Commission (TTC), I would hear about public transportation initiatives that addressed the needs of people commuting to work. I have since realized that my experiences are reflected in the research literature, which tends to focus on the transportation needs of commuters, such as how people commute to and from the city to get to work on time. However, seniors were often missing both from conversations about access to public transportation and the research literature on the topic. If seniors were included, access to transportation was primarily discussed for seniors with disabilities, or when discussing how seniors would fulfill practical needs (e.g., attending medical appointments). A stereotypical view of seniors was perpetuated by these conversations—seniors were mostly seen as a homogeneous group with disabilities or illness.

During my undergraduate degree, I also conducted a scoping review on the association between social isolation of seniors and public transportation (see Lamanna,

Klinger, Liu, & Mirza, 2019), finding that there is, indeed, a relationship between social isolation and access to transportation for seniors. Specifically, when seniors were able to use transportation to reach social opportunities and stay connected to their social network, they seemed to be less isolated and more included in society overall. Through this scoping review, I found that seniors used transportation to fulfill both physical and social needs (Lamanna et al., 2019). Moreover, through volunteering with the National Initiative for the Care of the Elderly (NICE) in Toronto, older adults told me about their experiences with transportation first-hand. I began to hear these experiences from diverse seniors who voiced many challenges as they tried to maintain connection with their communities.

I chose to pursue a Master of Science degree at Carleton University to explore this topic of age-friendly public transportation in the City of Ottawa, where there is a rapidly aging population that is diverse in terms of culture, ethnicity, language, and gender, as well as an extensive public transportation system. After beginning my research on seniors' access to transportation, it soon became apparent that there was a disconnect between what I knew about seniors' health and access to public transportation, and how the needs of different groups of seniors were addressed in policy and practice. In the literature and policies in Ottawa that addressed transportation for seniors, access to transportation was often synonymous with physical accessibility. However, research by Lucas (2012) emphasized that transport poverty refers to the interaction between problems with physically accessing transportation and social inequalities. This conceptualization of transport poverty is most reflective of my

interpretation of the link between transportation and social exclusion, as I will describe in this thesis.

Herein lies the value of using a qualitative, community-based, multi-perspective approach for this project. The barriers to transportation access can be better understood through the lived experiences of the “communities within communities” of seniors living within the City of Ottawa – the ones who are affected by decisions made (by policy-makers) about transportation. Additionally, comparing four perspectives—those of seniors, seniors’ service providers, bus operators, and transportation managers—will also provide a richer understanding of how (or whether) the issues that are voiced by seniors are addressed in practice.

Therefore, the research questions that were addressed in this thesis are:

- 1) What does accessible transportation mean to older adults in Ottawa, considering their diverse backgrounds, and varying levels of mobility and health?
- 2) Do older adults in Ottawa experience transport disadvantage and social disadvantage simultaneously? How is transportation-related social exclusion experienced by groups of older adults that are most at risk for transport poverty?
- 3) Do seniors’ service providers and transportation service providers address seniors’ needs when developing transportation initiatives?

Thus, the goals of this research are to use the results of qualitative observations and interviews across the four aforementioned perspectives to: 1) fill gaps in the research literature regarding physical and social access to public transportation for older adults from diverse backgrounds and with varying abilities, and 2) inform transportation and

age-friendly policy conversations and practices such that the needs of diverse seniors living in Ottawa will be better addressed.

Chapter 2 will review the literature on transportation and health. Additionally, Chapter 2 will discuss previous research that has incorporated multiple perspectives into the discussion of accessible transportation for older adults and the rationale for the incorporation of perspectives from seniors, seniors' service providers, and transportation providers in this study.

Chapter 3 will provide the context in which this discussion is situated by reviewing the policy relevant to older adults that has addressed transportation in Ottawa. This chapter will also discuss the aging Canadian population, the geographic and cultural diversification of seniors in Ottawa, and seniors' use of public transportation in Ottawa (and across Canada).

The specific methodology of this study is discussed in Chapter 4, including a detailed discussion of the larger, international project which formed the foundation for this research, data collection methods, participant selection, a description of the sample, and the methods used for data analysis.

The next chapters (Chapter 5 and 6) will present the findings from this data analysis and a discussion of these findings. Chapter 5 provides discussion of seniors' use of accessible transportation in Ottawa from the perspectives of seniors, seniors' service providers, and OC Transpo bus operators and managers. The identification of barriers, challenges, and problems with transportation, as well as promising practices and facilitators of transportation access, demonstrates how transport disadvantage manifests.

Additionally, Chapter 5 explores the links between transport poverty and access to social networks with consideration of social exclusion and stress. This chapter will also link the findings of the present research that overlap with, contradict, and/or contribute to existing research.

In Chapter 6, perspectives from seniors, seniors' service providers, and public transit operators and managers are compared. As a result, several 'promising practices' for fostering inclusion of all seniors in transportation initiatives are identified, with implications for age-friendly communities, more broadly.

Finally, Chapter 7 summarizes the overarching themes that appear throughout this study, including intersections among inaccessibility of transportation, social exclusion, and stress. Limitations and strengths of this study are then discussed before ending with conclusions and implications for age-friendly communities.

## **Chapter 2: Literature Review**

When reviewing the literature on transportation and health, I began considering the problems associated with seniors' access to transportation that have been reported previously. Given my choice to focus on "communities within communities" of seniors, I explored whether problems with access to public transportation occurred for some groups of seniors more often than others, namely, those experiencing various types of physical or social barriers. This also gave rise to the question of whether there were differences in access to public and private transportation for seniors from diverse backgrounds. Finally, I reviewed how these discussions fit into the AFC framework.

With this in mind, I also explored whose viewpoints regarding age-friendly transportation were primarily captured in previous research. Thus, a final section in this literature review explores the research that combines the perspectives of seniors, seniors' service providers, and transportation providers (both drivers and managers) to better understand current approaches to transportation for seniors from multiple perspectives. However, it is revealed that there is limited research that examines the perspectives of seniors together with seniors' service providers, or seniors and transportation providers, let alone research that combines all of these perspectives.

### **Seniors' Access to Public Transportation**

Previous studies that have addressed accessibility to public transportation have often focused on alleviating physical barriers for people with disabilities—this includes many older adults, who have the highest prevalence of disability when compared to all other age groups (Gharebaghi et al., 2018; Statistics Canada, 2012). In this regard, studies that address public transportation almost exclusively discuss the physical barriers that reduce accessibility for older adults, such as walking distance to public transit stations or stops (Bittner et al., 2011; Bryanton et al., 2010; Mullen, 2005; Titheridge, Achuthan, Mackett, & Solomon, 2009; WHO, 2007; Broome, Worrall, Fleming, & Boldy, 2011; Broome, Worrall, McKenna, Boldy, 2010; Broome, Worrall, Fleming, & Boldy, 2013), difficulties boarding transit vehicles (Bittner et al., 2011; Bryanton et al., 2010; Curl et al., 2014; Klassen & Allen, 2005; Levasseur et al., 2015; Mullen, 2005; Titheridge et al., 2009; WHO, 2007), availability of public transportation (Bittner et al., 2011; Klassen & Allen, 2005; Levasseur et al., 2015; WHO, 2007; Kim, 2011), or timing

and scheduling of routes (Broome et al., 2011; Broome et al., 2010; Broome et al., 2013). In line with this research, public transportation initiatives seem to focus on improving transit infrastructure and adapting transportation vehicles to suit the needs of older adults (Bittner et al., 2011; Levasseur et al., 2015; Mullen, 2005).

In the Canadian context, the *Canadian Longitudinal Study on Aging* (CLSA) has surveyed approximately 51,000 Canadians between the ages of 45 and 85 to explore the topic of healthy aging, the transitions and processes experienced during aging, and to develop preventative strategies and interventions that can foster more healthy aging (Raina, Wolfson, & Kirkland, 2008). An analysis of the baseline phase of the study revealed that among the older adults (65 and older) *who drive*, approximately 89% (87.9% of the 65-74 age group and 89.5% of the 75-85 age group) listed driving a motor vehicle as a mode of transportation (Toohey et al., 2018). Very few older adults who drive reported that they used public transit as a mode of transportation (only 2.1% of the 65-74 age group and 1.7% of the 75-85 age group; Toohey et al., 2018). Meanwhile, 41.9% of *non-drivers* who were aged 65-74 reported that they used public transit as a mode of transportation and only 32.2% of 65-74-year-olds reported that they were passengers in a motor vehicle (Toohey et al., 2018). Similarly, in the 75-85 age group, only 29.8% of non-drivers reported that they used public transit with 48.2% reporting that they were passengers in a motor vehicle (Toohey et al., 2018). These findings from the CLSA suggest that public transportation does not seem to replace driving as a mode of transportation for older adults across Canada who can no longer drive or who choose not to drive (Turcotte, 2012). Likewise, older adults do not seem to increase their use of

public transportation as they age (Turcotte, 2012). However, the ways in which seniors' transportation access and use are explored have often neglected the social factors that culminate in transport poverty. For example, the CLSA primarily includes older adults who are White, Protestant, and English-speaking (Lamanna & Ysseldyk, under review). Additionally, the analysis by Toohey et al. (2018) does not examine differences in transportation use for seniors with different levels of income. Therefore, the CLSA might not be giving an accurate snapshot of the older Canadian population on which to make conclusions about their usage of transportation (Lamanna & Ysseldyk, under review).

### **Access to Public Transportation for “Communities within Communities” of Seniors**

Although the research literature (summarized above) thoroughly considers physical barriers to transportation, social barriers to using public transportation, such as culture and gender (WHO, 2007), are often overlooked. Indeed, even with initiatives that attempt to mitigate issues related to physical accessibility, some older adults still do not use public transportation (Bryanton et al., 2010; Davey, 2007). Public transportation literature and initiatives within the AFC framework could therefore be missing social issues that influence transportation accessibility for many older adults. This raises the question of what previous research has to say about which groups of seniors' experience problems accessing transportation.

A recent survey of older adults from the United States found that female and Black older adults used public transportation less than males and other ethnic groups (Yang, Xu, Rodriguez, Michael & Zhang, 2018). In another study, Chinese older adults

experienced language barriers that made them feel disinclined to travel alone (Ip et al., 2007). Similarly, while developing transportation initiatives for seniors in Edmonton, ethnocultural and Indigenous seniors experienced language barriers that were described as a factor that inhibited their use of transportation (Edmonton Seniors Coordinating Council, 2011). For immigrant seniors, these language barriers could also influence their ability to access information about available transportation services (Stewart et al., 2011).

In addition, older adults who cease to drive are often women and non-White (Choi, Mezuk, Lohman, Edwards, & Rebok, 2012). Older women were also found to experience more barriers to transportation than men, often using public transportation less than men (Delbosc & Currie, 2011; Scheiner, 2014; Kim, 2011). A lower likelihood of using transportation was also found to be associated with medical conditions and low income in older adults (Yang et al., 2018). Thus, older adults who are non-White, women, have medical conditions, and/or have low income are not using public transportation often and experience more risk for driving cessation or an inability to drive (Yang et al., 2018; Fordham, Grisé, & El-Geneidy, 2017; Choi et al., 2012; Delbosc & Currie, 2011; Kim, 2011). The overlap between groups of older adults who are at greater risk for driving cessation and less use of public transit may be indicative of social barriers to public transportation that involve gender, culture, mobility, illness, and income, rather than the physical accessibility of the transportation itself.

Among other social factors, public transportation can be a source of independence for older adults, as they can make their own schedule rather than living by

the schedules of others (Adler & Rottunda, 2006; Bryanton et al., 2010; Curl et al., 2014; Fordham et al., 2017; Newbold et al., 2005). Moreover, access to transportation can impact older adults' abilities to fully participate in social life by facilitating their opportunities for social participation, maintaining a social network, and engagement within communities, thereby reducing the risk of experiencing social isolation and diminished well-being (Bittner et al., 2011; Chaudhury et al., 2012; Emler & Moceris, 2012; Klassen & Allen, 2005; Levasseur et al., 2015). Conversely, dependence on others could be positive since it means that seniors would be spending more time with their family and friends as passengers in their vehicles. However, by ensuring that social barriers are addressed alongside physical barriers to public transportation, older adults will have more opportunities to engage with their community and maintain their independence (even in the case of driving cessation), thereby supporting both their psychological and physical health.

### **Differences Between Access to Public and Private Transportation**

It became apparent that seniors' use of public and private transportation are intertwined; therefore, I also explored seniors' use and access to private transportation. In this case, this referred to both the use of private vehicles and other alternatives to public transportation (e.g., taxis, rides from others). However, the research literature appears to be missing information on alternative transportation services provided by seniors' organizations. Meanwhile, I found that these services were important to seniors in Ottawa. (In Chapter 5, I will identify the groups of seniors that make use of alternative transportation services in Ottawa).

Several studies discuss older adults' driving cessation and the subsequent use of alternative modes of transportation (e.g., Curl et al., 2014; Bittner et al., 2011). It is common for older adults to be reliant on different forms of private transportation (i.e., driving in a car or being a passenger in a car), rather than travelling via public transit (Fordham et al., 2017; Bittner et al., 2011; Newbold, Scott, Spinney, Kanaroglou & Páez, 2005; Bryanton et al., 2010). Seniors who experienced declines in eyesight, mobility, reaction time, memory, etc. tended to reduce the amount that they drive, change what time of day they drive, and/or the distance they drive (Bittner et al., 2011).

Furthermore, being unable or unwilling to drive can often lead to older adults' dependency on family and friends for transportation, which can sometimes result in feeling like they are inconveniencing their loved ones (Adler & Rottunda, 2006; Davey, 2007). Driving cessation can also result in a loss of independence and autonomy, depression and depressive symptoms, decreased participation in activities outside the home, and psychological distress due to lack of perceived control (Bryanton et al., 2010; Adler & Rottunda, 2006; Chihuri et al., 2016; Liddle & McKenna, 2003; Marottoli et al., 2000; Ragland, Satariano, & MacLeod, 2005; Windsor, Anstey, Butterworth, Luszcz & Andrews, 2007). Additionally, in studies that interviewed seniors, the availability of information about transportation options was mentioned as an issue that contributed to transport problems (Broome et al., 2011; Broome et al., 2010; Broome et al., 2013). Meanwhile, replacements for public transportation can be unaffordable to use on a regular basis (e.g., taxis) or unavailable (e.g., volunteers who can provide transportation),

which leads to further reliance on private automobiles (Bryanton et al., 2010; Klassen & Allen, 2005).

### **Relationship Between Access and Age-Friendliness**

The literature that discusses use and access to different modes of transportation for older adults, as well as differences that might arise across various “communities within communities” of seniors, raises the question of how these discussions fit into the AFC framework. By addressing the eight AFC dimensions, the goal is for communities to adapt to meet the physical and social needs of older adults (WHO, 2007). However, as some researchers note (see Lui et al., 2009; Scharlach, 2012; Syed et al., 2017), the eight AFC dimensions are often divided into separate physical and social features without acknowledging the interactions between physical and social domains. When the AFC dimensions are divided, transportation is often considered to be a physical component of the framework (along with outdoor spaces and buildings, and housing, for example; Scharlach, 2012; Syed et al., 2017). In contrast, AFC domains such as respect and inclusion as well as social participation are considered to be social components of the framework (Scharlach, 2012; Syed et al., 2017). Accordingly, the conceptualization of transportation as a physical domain might influence the initiatives that are put into place to address this dimension.

Therefore, the AFC framework encourages communities to address physical access to transportation (WHO, 2007). Within the transportation dimension of the AFC framework there is discussion of “age-friendly vehicles,” transport stops and stations, travel destinations, and safety and comfort, yet these factors have only incorporated

barriers that are solely physical (WHO, 2007). The AFC framework is meant to be a checklist that can be applied to any city/community to promote age-friendly practices; however, the conceptualization of this dimension within the guide falls short of being applicable to the needs of all older adults (WHO, 2007). Meanwhile, the groups of older adults that have less access to public transportation are groups that may experience inaccessibility to public transportation due to social barriers.

### A Multi-Perspective Approach

While I have chosen to use the model proposed by Lucas (2012; see Figure 1) to help visualize the relationship between transport poverty and social exclusion, the model is focused on the entire population. Therefore, my research adds to this understanding of

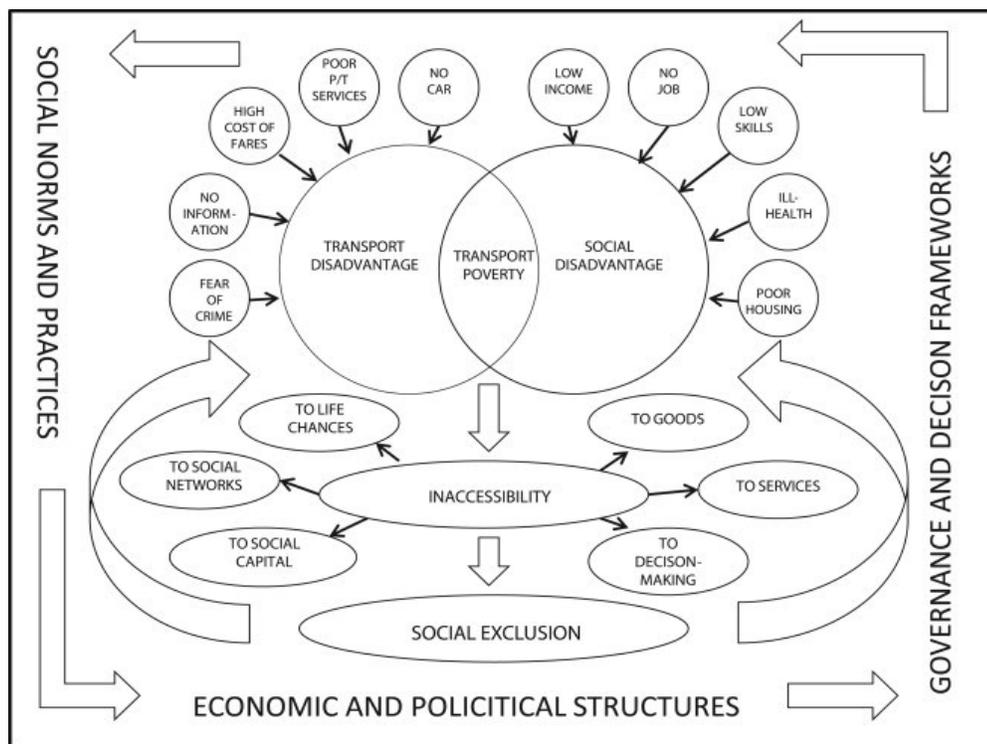


Figure 1: The relationship between access to transportation and social exclusion (Lucas, 2012).

transport poverty by focusing on older adults, given that seniors are a (albeit heterogeneous) group that is known to be at risk for social exclusion and social isolation (Barnes et al., 2006; Iliffe et al., 2007; Nicholson, 2012; Warburton et al., 2013). Additionally, during this review of the existing literature, it was evident that a multi-perspective approach to collecting qualitative data from seniors, seniors' service providers, and transportation providers has rarely been used when developing transportation initiatives for older adults. Likewise, neither bus operators nor transportation managers were frequently included in research about transportation for older adults. Therefore, I looked at previous research that took a multi-perspective approach to examining transportation and the health of older adults.

A study by Thakuriah et al. (2011) is the only known research that has explored the topic of age-friendly transportation by surveying each of: 1) seniors, 2) seniors' service providers, and 3) transportation providers. This study reviewed the outcomes of the *New Freedom* program, which was initiated in the United States to fund grants for new public transportation initiatives and alternative modes of transportation that would help seniors and others with disabilities (Thakuriah et al., 2011). Transportation projects were selected for funding from the New Freedom program after developing a *Coordinated Human Services Transportation Plan* (CHSTP) that identifies the needs of seniors and others with disabilities by involving the feedback from the public, local transportation organizations, and community-based transportation providers (Thakuriah et al., 2011; U.S. Department of Transportation, 2007). The planning process involved the inclusion of members of the public by interview, phone, questionnaires, and surveys

conducted in multiple languages (U.S. Department of Transportation, 2007). It became apparent that seniors who experienced poor transportation availability required different public transportation alternatives when compared to seniors who experienced social isolation, mobility issues, and/or dependence on others (Thakuria et al., 2011). The New Freedom program recognized that, to meet seniors' various transportation needs, an integrated services model would need to be designed (Thakuria et al., 2011). An integrated services model would mean that public transportation services are complimented by van programs and ride sharing programs, volunteer driving programs, and door-to-door services (Thakuria et al., 2011). Therefore, seniors who were social isolated and/or experienced mobility or other seniors requiring help from others would have their transportation needs met with forms of transportation that suited their mobility needs (Thakuria et al., 2011).

Although this study surveyed members belonging to each of the three groups using a questionnaire, it did not seek to compare the various perspectives, make real-world observations of how well the program worked for seniors, or report on the involvement of diverse seniors. Additionally, this study only assessed outcomes that aligned with transport disadvantage, such as transportation availability, reliability, and ability to access destinations for medical appointments, program participation, social visits, etc. (Thakuria et al., 2011). Thus, once again, social disadvantages were overlooked.

Studies that have included seniors' service providers alone have discussed the issues faced when providing transportation for seniors, such as sharing transportation

information with seniors and finding enough volunteers to support their programs (Edmonton Seniors Coordinating Council, 2011). Seniors service providers were also included in research that reported gaps in transportation services for seniors (Chernesky & Gutheil, 2007), including immigrant seniors (Stewart et al., 2011), and the connection between social participation and transportation accessibility (Plouffe & Kalache, 2010).

When bus operators were included in research, they were often surveyed or interviewed about the impact of stressors/burnout on their own health (Chen & Kao, 2013), job satisfaction (Glasø, Bele, Nielsen, & Einarsen, 2011), and driving behaviour (Shi & Zhang, 2017). They have also been surveyed or interviewed about driving safety (Nævestad, Phillips, Laiou, Bjørnskau, & Yannis, 2019; af Wåhlberg, Dorn, & Kline, 2010), occupational injuries (e.g., Wei et al., 2017), and technology for improving transportation (Watkins, Borning, Rutherford, Ferris, & Gill, 2013). Additionally, bus operators were surveyed or interviewed following observation of their driving safety (e.g., Olapoju, 2016) or interventions to explore bus driver behavioural reactions to stressors (e.g., Xianglong, Hu, Shumin, & Zhenning, 2018; Feng et al., 2018). In relation to older adults, bus operators tend to be interviewed about the stress experienced when providing transportation to senior passengers; for example, alongside the influx of older adults using public transportation, bus operators reported increased mental and physical fatigue, reduced focus, and increased stress levels (Hu & Chen, 2019).

In previous research, transportation managers seemed to be interviewed less often than bus operators. They were also asked to give feedback on bus safety initiatives (e.g., Cafiso, Di Graziano, & Pappalardo, 2013) but were additionally asked for comments on

the development of transportation projects (e.g., Sturm, Chowdhury, Dunning, & Ogle, 2011). Otherwise, transportation managers were mentioned in research that recommended that transportation initiatives be reviewed by transportation managers in decision-making positions (Engels & Liu, 2013; Alsnih & Hensher, 2003).

To the best of my knowledge, there has not yet been a study that has collected and compared the four distinct perspectives of seniors, seniors' service providers, bus operators, and public transportation managers with qualitative and ethnographic methods. The New Freedom project surveyed seniors, seniors' service providers, and transportation providers using quantitative questionnaires to explore options for integrated transportation services for seniors (Thakuria et al., 2011). In contrast, seniors' service providers have often been interviewed alongside seniors and sometimes policymakers about seniors' programs, including transportation programs (Stewart et al., 2011). Seniors' perspectives often overlapped with seniors' service providers, as both groups were acutely aware of the gaps in services for seniors (Stewart et al., 2011; Chernesky & Gutheil, 2007). However, other than the study by Thakuria et al. (2011), which was an assessment of a specific transportation program, the perspectives of public transportation service providers, especially bus drivers, have not been examined together with those of seniors and seniors' service providers.

Thus, the multiple perspectives that are simultaneously examined through this project provide a unique view on the topic of transportation for seniors. Furthermore, this approach enables the perspectives of transportation insiders to be compared to those outside of transportation, who are seniors themselves or people who work closely with

seniors. However, the main goal for including multiple perspectives is to understand seniors' transportation needs and how those needs are understood and translated into practice.

### **Chapter 3: The Ottawa Context**

Alongside the relevant literature summarized above, the findings of the present study also need to be understood in terms of the transportation available to seniors, existing transportation policy, and demographics of seniors in the city of Ottawa. In the city of Ottawa, at the time of this research and currently, public transportation services include OC Transpo's bus, O-Train (two light rail transit lines), and Para Transpo services (a system of vans and small buses that serve people who cannot use conventional public transit for reasons related to disability, illness, cognitive impairment, etc.). OC Transpo is jointly funded by the municipal and federal governments, in addition to revenue from fares (City of Ottawa, 2013; OC Transpo, 2019). Public transit is the most expansive form of accessible, shared transportation in Ottawa, integrating bus, light rail transit (LRT), and paratransit services into one public transportation system (OC Transpo, 2020b). Interviewees from OC Transpo explained that bus and LRT services are referred to as *conventional transportation* and Para Transpo services were referred to as *paratransit* or *Para services*.

During the data collection period, every Wednesday was a no-charge day for seniors on OC Transpo's buses and O-Trains. A secondary no-charge day was added in July 2019, but this was not in place during data collection. During the study and currently, seniors are additionally offered reduced fares on all OC Transpo services on

the other days of the week. OC Transpo uses a PRESTO card system to eliminate the need for tokens or passes; money can electronically be loaded to the card and different age-based discounts (e.g., seniors' fare) are programmed to be deducted from the card (OC Transpo, 2020a). Card readers are located inside the doors of each bus and at each LRT station fare gate to allow people to use their PRESTO cards to pay for their trip (OC Transpo, 2020a). Proof of having loaded a monthly pass onto one's PRESTO card is required to use Para Transpo services since card readers are not installed on Para Transpo vans (OC Transpo, 2020a).

Outside of OC Transpo, there are several other low-cost transportation options for seniors, including buses and vans that take seniors to grocery stores, medical appointments, seniors' day programs, or community centres. The services that provide transportation outside of any OC Transpo services are referred to as *alternative transportation* or *alternative transportation programs/services*. These programs only charge small fees for the service or the fees are included in the cost of membership to a seniors' centre or day program. However, seniors' service providers often need to assist seniors in finding suitable low-cost options for transportation. These seniors' service providers sometimes create transportation programs to better meet seniors' various transportation needs, if it was possible for their organization to do so. For example, there are programs that recruit school buses and vans to help seniors travel to grocery stores, programs that bring seniors to medical appointments, and programs that bring seniors to community centres or seniors' activities.

## **Policy in Ottawa**

The population of the City of Ottawa has grown rapidly from 883,391 people in 2011 to 934,243 in 2016 (Statistics Canada, 2017d). To prepare to meet the challenges that accompany an increasing population, the City of Ottawa developed the *Official Plan* in 2003 as part of their growth management strategy: *Ottawa 20/20* (City of Ottawa, 2003). The *Official Plan* was established shortly after the amalgamation of 11 municipalities under one municipal government in 2001 and acts as a policy framework to meet the needs of the growing population of Ottawa through to the year 2036 (City of Ottawa, 2003).

## **Public Transportation Policy in Ottawa**

In 2012, after the completion of background research and public consultations with older adults, the City of Ottawa's *Community and Social Services Department* used the WHO's AFC framework to develop the *Older Adult Plan* (City of Ottawa, 2019b; Nanos Research, 2012; City of Ottawa, 2003). After the first *Older Adult Plan* was launched, the City of Ottawa and *Age-Friendly Ottawa* established an evaluation framework to track which actions had been addressed and which remained outstanding (City of Ottawa, 2003; City of Ottawa, 2019b). Updates to the *Older Adult Plan* were made in 2015 and 2019 after consultation with older adults from many different backgrounds including Francophone seniors, Indigenous seniors, LGBTQ+ seniors, seniors with low-income, and isolated seniors (City of Ottawa, 2003; City of Ottawa, 2019b).

The City of Ottawa's *Older Adult Plan* has been influenced by the AFC framework, and is an example of how policy might be influenced by the dichotomy of social and physical AFC domains. The City of Ottawa recognises the importance of transportation for older adults and has created the *Older Adult Plan* to promote inclusive communities and support diverse older adults. In the *Older Adult Plan*, there is a discussion of improving access to public transportation for older adults, improving bus stop and station accessibility, and improving Para Transpo services (City of Ottawa, 2015a). Furthermore, the "Social, Recreational, and Cultural Participation" section of the *Older Adult Plan* discusses policy actions that are social in nature, while there is no discussion of these issues in the "Transportation" section (City of Ottawa, 2015b; City of Ottawa, 2013).

The most recent report on the development of the 2020-2022 *Older Adult Plan* acknowledges that transportation influences participation in social and civic activities (City of Ottawa, 2019b). Additionally, consultations were made with Indigenous, LGBTQ+, multicultural older adults, and older adults with disabilities who discussed issues of accessibility and social isolation (City of Ottawa, 2019b). However, the 2020-2022 and past versions of the *Older Adult Plan* have also focused on physical access to public transportation such as improvements to accessibility, bus stops, Para Transpo online booking, and transportation information for older adults (City of Ottawa, 2019a; City of Ottawa, 2019b). The *Transportation Master Plan* (TMP) contains the same themes—it was last updated in 2013 but will not be updated again until 2022 (Engage Ottawa, 2019).

The TMP was first implemented in 2013 based on previous transportation plans from 2003 and 2008 (City of Ottawa, 2013). While the TMP addresses all forms of transportation in the City of Ottawa, from public transportation to cycling to roadways, it supports the development of policies under the *Official Plan* (City of Ottawa, 2013). The TMP is heavily focused on commuters as well as encouraging commuters to make use of alternative forms of transportation beyond their personal vehicles (City of Ottawa, 2013). Older adults do not typically travel at the same times that commuters use transportation services, and yet public transportation services are primarily being optimised to meet the needs of commuters (Bittner et al., 2011; City of Ottawa, 2013). In the TMP, older adults are only mentioned with reference to driver's licencing, automobile accidents, winter walking safety, and accessible transit (City of Ottawa, 2013). This conversation surrounding accessible transit focuses on physical barriers to using public transportation, such as lower bus floors for easier boarding and accommodation of wheelchairs and other assistive devices (City of Ottawa, 2013). Therefore, discussion of improving transportation for older adults in the City of Ottawa's *Older Adult Plan* and TMP is overwhelmingly focused on improving the physical barriers to public transportation (City of Ottawa, 2003; City of Ottawa, 2015b).

Older adults in Ottawa have been consulted during the continuous development of the *Older Adult Plan* and TMP, which addresses older adults' transportation needs (Nanos Research, 2012; City of Ottawa, 2015a; City of Ottawa, 2019b; Engage Ottawa, 2019). The 2022 updates to Ottawa's TMP involve more communication with the public; however, some people will not be able to give their feedback at this first stage since the

survey was only available in English or French and only available online ([https://engage.ottawa.ca/transportation-master-plan/survey\\_tools/phase-1-engagement-confirming-the-direction](https://engage.ottawa.ca/transportation-master-plan/survey_tools/phase-1-engagement-confirming-the-direction); Engage Ottawa, 2019). Although there will be more in-person opportunities for the public to engage, the results of the online survey have already decided many of the guiding principles for the update to the TMP (Engage Ottawa, 2019). This may result in policy decisions that do not fit the needs of every group of seniors who will be impacted by future transportation initiatives (Lucas, 2012; Lucas et al., 2016). There is a tendency to assume that by addressing physical barriers to transportation, public transportation will be accessible to all (Gharebaghi et al., 2018; Hine & Mitchell, 2001).

Transportation policy makers tend to take top-down approaches to transportation planning, where criteria such as the AFC framework are used as a checklist to modify/create transportation services; however, there is a need for a bottom-up perspective that incorporate input from seniors and foster empowerment (Lucas, 2012; Lui et al., 2009). The former often leads to transportation policies that do not completely address transport poverty because some groups' needs are not acknowledged before policies are implemented (Lucas et al., 2016). Transport poverty is not just a result of the inability to afford fares; therefore, public transportation organizations might reduce fares for seniors and yet this will not actually result in better access to transportation for all seniors. As you will see, there are many other problems that seniors experience when accessing public transportation.

By incorporating a social exclusion perspective into approaches that address transport poverty, policymakers can acknowledge that transport poverty is multidimensional (Lucas, 2012). Studies that have explored the dimensions of transportation-related social exclusion have been based on limited empirical data and simplified when this approach is implemented by policymakers (Yigitcanlar et al., 2019). This lack of empirical data and simplification in policy has reduced the ability to identify the broad dimensions of—and populations that are affected by— transportation-related social exclusion (Yigitcanlar et al., 2019).

There is a tendency for public transportation research, policy (including policy in the City of Ottawa), and initiatives to focus on the physical barriers to accessible public transportation, despite the suggestion that accessibility is multi-faceted (Gharebaghi et al., 2018; Hine & Mitchell, 2001). Thus, there is a growing need to assess how transport poverty can influence—or be influenced by—older adults' social exclusion. Not all seniors will benefit from the previous conceptions of public transportation initiatives if they are not inclusive of all seniors.

### **Shifting Demographics and Public Transportation**

As of 2016, there were 114,140 seniors aged 65 and older in the City of Ottawa, comprising 15.4% of Ottawa's total population (Statistics Canada, 2017d). This is in comparison to Canada's overall population where 16.9% of the population were aged 65 and older in 2016 (Statistics Canada, 2017c). However, by the time the youngest baby boomers turn 65 in 2030/2031, the population of seniors is expected to rise to 22% of Ottawa's population, which is similar to the projection for this age group in Canada

overall at 22.2% - 23.6% (United Way Ottawa, 2017; City of Ottawa, 2015b; Statistics Canada, 2015). Thus, although Ottawa’s population may have had a lower percentage of older adults than the national rate in 2016, the population of seniors is projected to grow at an accelerated rate to match the national percentage by 2030/2031.

**Physical Location**

Before the recommendations for services and programs were made in the City of Ottawa’s *Older Adult Plan*, data was collected to identify demographic characteristics of older adults in the city (City of Ottawa, 2011). Figure 2 shows the percentage of older adults aged 65 and older in the City of Ottawa and surrounding regions, with the darker

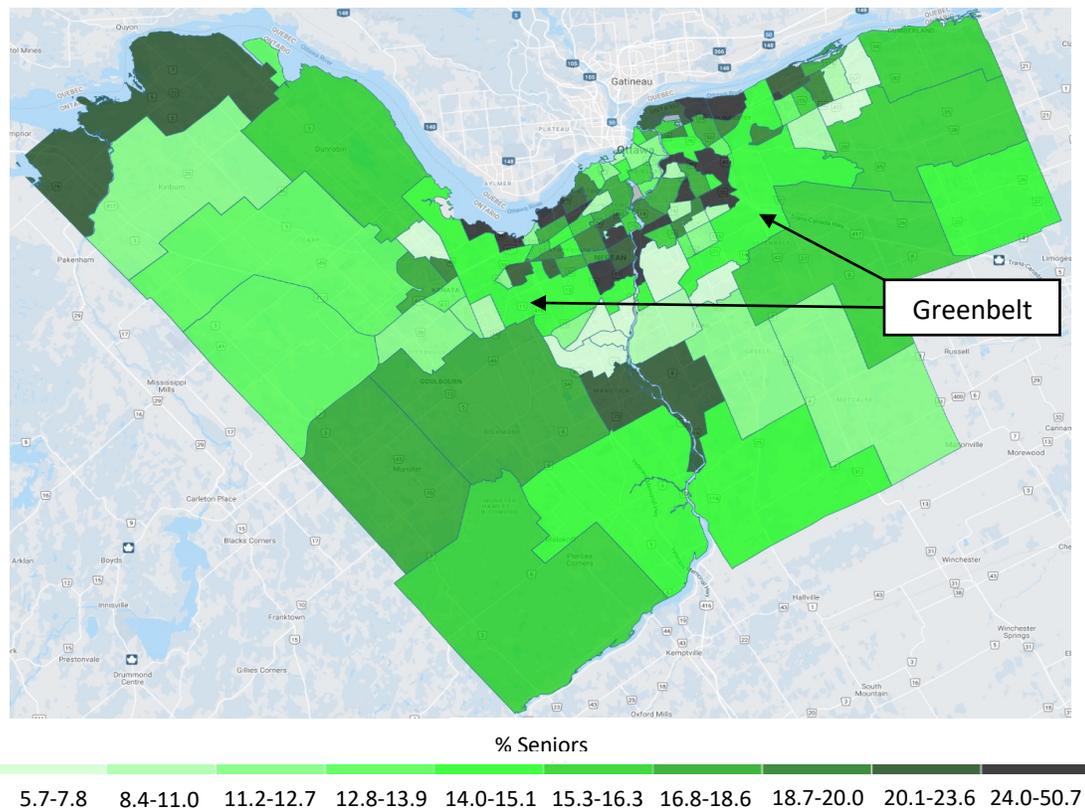


Figure 2: Map of census data showing percentage of seniors aged 65 and older in Ottawa (Ottawa Neighbourhood Study, 2019b)

colours representing a higher percentage of older adults in the neighbourhood (Ottawa Neighbourhood Study, 2019b). These data were taken from the Canadian Census of the population from 2016 (Ottawa Neighbourhood Study, 2019b). On this map, the greenbelt is identified using arrows, the city centre is located within this greenbelt, and the more rural areas extend outside the greenbelt.

In 2016, the highest concentration of older adults lived within Ottawa's greenbelt (closer to the city centre), denoted by the dark areas on the map that fall within the greenbelt (City of Ottawa, 2011; United Way Ottawa, 2017; Ottawa Neighbourhood Study, 2019b). In contrast, fewer older adults lived in rural areas, represented by the light areas on the map that fall outside the greenbelt, excluding two rural areas (Manotick and Fitzroy) that have a high percentage of seniors (dark areas to the south and north-west, respectively; City of Ottawa, 2011; United Way Ottawa, 2017; Ottawa Neighbourhood Study, 2019b). In Ottawa, an observed trend is that older age tends to be correlated with living in more urban areas; for example, in 2006, 69% of people aged 65-74 lived within the greenbelt while 10% lived in rural areas, compared to 82% of those aged 85 and older who lived within the greenbelt and 5% who lived in rural areas (City of Ottawa, 2011).

Both the 2006 Census and the *Ottawa Neighbourhood Study* reveal that seniors living with low income tend to live within the greenbelt in the city centre; fewer live outside the greenbelt or in rural areas (City of Ottawa, 2011; United Way Ottawa, 2017; Ottawa Neighbourhood Study, 2019a). The *Ottawa Neighbourhood Study* reported the prevalence of low income among seniors 65+ using the Low Income Measure After Tax (LIM-AT), a measure of household income after tax that takes household size and

income into account to compare a household's income to the low income cut off for Canadian households of the same size (Ottawa Neighbourhood Study, 2019a). The low-income prevalence for all seniors in Ottawa was 9.4% in 2016; however, within the greenbelt, where there is the highest density of seniors, the prevalence of seniors with low income was 12.1%, on average (Ottawa Neighbourhood Study, 2019a). In comparison, in the rural areas outside the greenbelt, where fewer seniors live, the prevalence of seniors living with low income was generally below the average prevalence of low income across Ottawa (Ottawa Neighbourhood Study, 2019a). However, in the two rural areas where there is a greater percentage of seniors living compared to the other rural areas, there was a prevalence of 2.2% of seniors living with low income in Manotick and a prevalence of 6.8% of seniors living in Fitzroy (Ottawa Neighbourhood Study, 2019a).

Additionally, most Francophone seniors reported living in the Eastern part of the City of Ottawa – both inside and outside of the greenbelt (City of Ottawa, 2011). The Eastern areas outside the greenbelt also had a higher prevalence of seniors living with low income (e.g., Navan-Sarsfield – 9.9% and Edwards-Carlsbad Springs – 10.1%) compared to the average prevalence of low income across Ottawa (Ottawa Neighbourhood Study, 2019a). Finally, seniors who were recent immigrants in 2006 (less than 10 years in Canada) reported living in the city core and outside the greenbelt (City of Ottawa, 2011).

### **Cultural and Linguistic Diversity**

Along with changing age demographics, it is important to recognize that the City of Ottawa is also experiencing changes in cultural diversity (United Way Ottawa, 2017). However, the following discussion is mostly based on data from 2006; while this is not ideal data to use, the more recent data that is available is not specific to Ottawa, but rather Canada-wide. In 2006, 31% of seniors living in Ottawa were immigrants, most had lived in Canada since the 1980s, and were mostly from Europe (City of Ottawa, 2011). Although fewer recent immigrants are seniors, they tend to immigrate to Canada from Asia, Africa, Central America, and South America (City of Ottawa, 2011). Although only 10% of seniors in Ottawa identify as a visible minority, this percentage is expected to increase as more immigrants come to Canada from non-European countries (City of Ottawa, 2011; United Way Ottawa, 2017). In 2006, Chinese and South Asian seniors were the largest groups of seniors, comprising 29.1% and 20.7% (respectively) of adults aged 65 and older in Ottawa compared to only 19% and 16.4% of the total population of Ottawa (City of Ottawa, 2011). Other common visible minority groups in Ottawa's population of seniors were Black, Arab, Latin American, and other Asian backgrounds (City of Ottawa, 2011). Furthermore, 0.45% of seniors in Ottawa identified as Indigenous, but this number is expected to rapidly increase from 2011-2031 (United Way Ottawa, 2017).

Census data from 2011 reveals that 63% of seniors in Ottawa were only able to speak English, while 2.7% were only able to speak French, and 4.7% could not speak English or French (United Way Ottawa, 2017). However, despite being a small

percentage of the total number of Canadian immigrants, immigrants aged 65 and older tend to face language barriers (United Way Ottawa, 2017). Language barriers are common to newcomers who are seniors as their knowledge of Canada's official languages is often low compared to seniors who are less recent immigrants (United Way Ottawa, 2017). Looking at all seniors who immigrated to Canada from 2006-2011, 54.7% of women and 43.8% of men could not hold a conversation in either English or French (United Way Ottawa, 2017).

### **Public Transportation**

In 2004 (the most recent statistics available) in the City of Ottawa, 78% of seniors aged 65 and older reported that the mode of transportation they used most often was driving their own vehicle (City of Ottawa, 2011). This statistic included data from the Canadian Census, which provides a more accurate representation of seniors in Canada (City of Ottawa, 2011). Meanwhile, 10% of older adults aged 65 and older reported that they most often had a family member drive them (City of Ottawa, 2011). In 2004, only 9% (7% conventional bus and 2% Para Transpo) of older adults reported that they used OC Transpo services as their main mode of transportation (City of Ottawa, 2011). Unlike the findings from other reports, the *Portrait of Older Adults: Demographic and Socio-Economic Characteristics* indicated that older seniors used the bus and Para Transpo in Ottawa more frequently than younger seniors (City of Ottawa, 2011). However, data collected by *The Council on Aging of Ottawa* in 2011 revealed that 23% of seniors reported that they used public transportation (*The Council on Aging of Ottawa*, 2017). Therefore, although 98% of all households had a bus stop less than 500 metres away,

only about one quarter of seniors in Ottawa used public transportation (City of Ottawa, 2011).

In Ottawa specifically, according to *The Council on Aging of Ottawa* (2017), women who were seniors, Francophone seniors, and older seniors used public transit slightly more than average. Women who were seniors were also less likely to drive a personal vehicle, thereby relying on family for rides, although more than half of all seniors over the age of 85 were still driving their own personal vehicle (City of Ottawa, 2011).

### **The Present Study**

In summary, while physical access to transportation has primarily been the focus of transportation policy and AFC initiatives, barriers to transportation might also be correlated with social factors such as gender, income, and language. This study acknowledges both the physical and social barriers to transportation and explores promising practices that address transport poverty. Furthermore, by taking a qualitative approach, the barriers to transportation can be better understood through exploring the lived experiences of seniors and senior's service providers, as well as bus operators and managers within the transportation industry. Comparing these four potentially diverse perspectives will also provide an understanding of how issues are communicated from seniors and whether solutions are implemented in practice to serve unique "communities within communities" of seniors living within the City of Ottawa.

## Chapter 4: Method

The data for this project was collected within a larger, international project funded by the Social Sciences and Humanities Research Council of Canada (SSHRC) entitled “Imagining Age-Friendly ‘Communities within Communities’: International Promising Practices” (Daly et al., 2018). The goal of the larger project is to identify promising practices (which have already been implemented, or plan to be implemented) that can improve health and quality of life among older adults in 12 different cities across Canada and internationally (Daly et al., 2018). The term promising practices has been described in previous research. Promising practices do not look at “some single, right way” for improving health and quality of life for older adults, “[instead], we speak about promising practices, about the good ideas worth sharing. They may be singular practices found only in one location, they may be ideas not yet fully applied, or they may be broader approaches...” (Armstrong & Lowndes, 2018, p. 5).

An international team of researchers and students from Canada, Australia, New Zealand, Denmark, Norway, and Taiwan will collaborate and partner with community groups in each of the 12 cities over 7 years to investigate promising practices that can be used to improve AFC initiatives (Daly et al., 2018). Although Age-Friendly Community (AFC) initiatives often take a “one-size-fits-all” approach to addressing the needs of older adults (Menec et al., 2011; Syed et al., 2017), this project investigates promising practices for seniors who are diverse in gender, culture, ethnicity, income, and sexual orientation, as well as Indigenous seniors, and seniors living with disabilities or dementia (Daly et al., 2018). Short field studies or rapid ethnographies are used in each of the 12

cities, collecting data from visits with staff and seniors at organizations that provide programs and services for seniors and their caregivers, or organizations that are involved in advocacy, research, or policy pertaining to seniors (Baines & Cunningham, 2013; Daly et al., 2018; Storm, Braedley, & Chivers, 2017). The transcriptions of interviews and field notes from all sites in all cities are available to researchers using a password-protected database (Storm et al., 2017).

Rapid ethnography involves many traditional ethnographic methods such as observation of participants, interacting with participants in their environment through informal discussions, as well as semi-structured interviews with seniors, seniors' service providers, and volunteers, and policy-makers (Baines & Cunningham, 2013; Storm et al., 2017). However, unlike traditional ethnographic methods, the data collection for rapid ethnography is completed in a short amount of time using small teams of researchers (Baines & Cunningham, 2013; Armstrong & Lowndes, 2018; Storm et al., 2017). Additionally, these small teams are often strategically grouped together so that at least one researcher is familiar with the site while other researchers have not visited the site (Baines & Cunningham, 2013; Armstrong & Lowndes, 2018). In this project, rapid ethnography involves collaboration of researchers from different cities/countries and research backgrounds (e.g., social work, psychology, economics, anthropology) to gain a richer understanding of interactions between individuals and their environment (Baines & Cunningham, 2013). This also leads to a collaborative analysis of data from multiple perspectives, differing from traditional ethnography (Baines & Cunningham, 2013).

This thesis project focuses on data from the field study in Ottawa, conducted in June 2019. Prior to the Ottawa field study, informal discussions and interviews were conducted with key informants from the various organizations with the goal of familiarizing participants with the researchers and research goals (Baines & Cunningham, 2013; Storm et al., 2017). Background research on the organizations, relevant policy scans, and summary reports were also done prior to the field study to provide context to the researchers participating in the data collection (Baines & Cunningham, 2013; Storm et al., 2017). Additionally, the entire research team met before the field study began to discuss the background of the sites and city, as well as to build relationships with each other and review interview and observation guides (Armstrong & Lowndes, 2018). The researchers then followed up with each other throughout the week to address any problems and to share insights and preliminary observations (Armstrong & Lowndes, 2018).

Over the course of the one-week field study, researchers from interdisciplinary backgrounds worked in small teams (often less than four researchers) to visit the sites that were identified in Ottawa (Baines & Cunningham, 2013; Storm et al., 2017). Therefore, the site visits overlapped so that multiple sites were visited by the small teams of researchers each day of the week. Throughout the week, the teams of researchers either observed different activities at the same site or visited multiple sites (Armstrong & Lowndes, 2018). The observations and informal discussions were audio-recorded as field notes by each researcher at the end of each day and were professionally transcribed,

along with the interviews that were audio-recorded with participant consent (Storm et al., 2017).

### **Site Visits: Observations and Interviews**

From June 16 – 22, 2019, approximately 20 researchers and students visited 13 sites across the City of Ottawa. As discussed above, observations, informal discussions, and interviews were conducted at each site during that week. All interviewees were asked questions about the services they work with or use, and how seniors and groups of seniors are considered. Interviewees were also asked what services were missing for seniors and groups of seniors.

For the analysis that follows, I will be drawing on data from interviews and field notes from the sites across Ottawa. I only used data that provided discussion of transportation for seniors in Ottawa (this process is further explained in the description of my analysis using NVivo). However, conversations about transportation were included in almost every interview and informal discussion with seniors and seniors' service providers, with some conversations providing more detail than others.

Throughout this field study, a total of 76 interviews were conducted by the research team along with two focus groups. Interviews with 36 seniors' service providers (25 women, 11 men) were used for this analysis; this group of service providers included volunteers, program coordinators, community care workers, committee members and chairs, nurses, and social workers, as well as policymakers and seniors' council members. Additionally, interview data from 17 seniors (9 women, 8 men) was used along with data from the two focus groups. Perspectives from additional seniors and

seniors' service providers who were observed but not formally interviewed were also included in the field notes from the research team.

To specifically focus on transportation, I conducted rapid ethnographic research during the June field study on OC Transpo buses, along with another researcher. Originally, we had trouble accessing permission to do so; our first request to conduct research onboard the OC Transpo buses was declined due to miscommunication of our proposed research to upper management. Once we were able to explain our proposed research directly to upper management, we worked towards a solution to address any concerns with our project. For example, we arranged to conduct informal discussions when bus operators were taking breaks at specific bus stations instead of talking to them while they were driving. Additionally, we chose not to contact the bus operators' union after we had arranged through the management team to conduct observations and informal discussions with bus operators and older adults on the buses. We chose this approach due to the tension that exists between the management and union.

While riding the OC Transpo buses, we had informal discussions with approximately 30 seniors and three bus operators (3 men). Our bus operator sample size was limited by having to speak with them while they were taking their seven-minute break. Some bus operators, understandably, wanted to use their break to actually take a break, or used their break to make up time delays on their route. Finally, after the field study was completed, we followed up with our management contact at OC Transpo to arrange interviews with managers. From November 2019 – December 2019, six managers (2 women, 4 men) from OC Transpo were interviewed. This sample size was

also limited due to the busyness of the OC Transpo organization staff after a new LRT line was opened in October 2019.

### **Participant Selection**

As mentioned above, sites were chosen and key informants were contacted ahead of the field study. The selection of these sites was purposeful, keeping in mind that the goal of the larger SSHRC-funded project is to visit sites that offer a broad understanding of the services, programs, and organizations in each city (in this case, Ottawa) that may facilitate promising practices for seniors. As discussed in the previous section, the sites that the team visited during the field study were also chosen with diversity in mind.

The three bus routes and time of day that researchers traveled were also purposefully chosen because they serve different areas of the city, from downtown to the suburbs, and they service many seniors' centres, community centres, doctor's offices, and grocery stores. By choosing to travel in the late morning and early afternoon, we also aimed to make our observations at times where seniors would more likely be using the bus to travel to seniors' centres, grocery stores, medical appointments, etc. Therefore, these routes were chosen with the aim of speaking with a diverse sample of seniors on the buses. Likewise, we spoke with bus operators as they took their break at Carleton University's bus stop. This bus stop was recommended by our contact at OC Transpo since the operators from our selected bus routes would be taking their breaks at this location.

Finally, snowball sampling was used to interview OC Transpo managers. We initially communicated with one manager at OC Transpo, and this manager was able to

assist us with finding managers from various other departments within the OC Transpo organization who would be interested in participating in interviews. Our contact at OC Transpo then assisted with setting up times and locations for the management interviews.

### **Description of the Sample**

Given the larger project's aim to focus on seniors from diverse backgrounds in terms of gender and culture, the research team spoke to seniors from organizations that provide programming and services for Chinese, Indian, and Nepalese seniors as well as organizations that offered programming and services in languages other than English, such as French and Mandarin. The sites were also chosen to include Indigenous seniors, LGBTQ+ seniors, and seniors with low income. Seniors with different cognitive and physical abilities were also included in the site study by visiting organizations that support people living with dementia and their caregivers, as well as those living with health problems that could affect mobility. All seniors who were included as participants in the Ottawa field study were over the age of 55. Of the seniors who were interviewed, there were approximately equal numbers of women and men.

### **Seniors on OC Transpo**

On the OC Transpo buses, we encountered approximately 30 seniors with various mobility levels; some needed to use assistive devices, while others did not seem to worry about their balance on the bus, standing for the course of their trip. Mobility was defined as the ability to physically move oneself between locations within the home, community, or city (Webber, Porter, & Menec, 2010). Mobility is described in various ways in the literature, but for this research physical mobility is defined as that which promotes or

interferes with walking or moving (Webber et al., 2010). Mobility can also be described as the use of transportation to get to locations but will be discussed as ability to access transportation to meet one's needs (Webber et al., 2010). Disability and illness affecting mobility is common among seniors (Levasseur et al., 2015).

I spoke with seniors of different ages, genders, cultures, and ethnicities; however, I spoke with more women than men on the buses. Additionally, I spoke with seniors who revealed to me that they were bilingual in English and another language, but many of the bilingual seniors spoke both English and French. I expected to speak with more bilingual seniors on the bus route that served primarily Francophone areas of Ottawa, but both bus routes contained mostly English-speaking seniors with only a few French-speaking and bilingual seniors. Likewise, I did not see any differences in mobility, culture, or gender across the three bus routes observed; that is, one bus route did not appear to have a higher number of seniors from a certain demographic compared to another bus route.

Although the income levels of the seniors on the buses could not be determined, some seniors mentioned that they specifically used the bus on Wednesdays to save money, while others mentioned that they only used the bus as an alternative to driving (e.g., to go downtown). Finally, some seniors were accompanied by younger people (potentially their children/family members) or by other seniors, but many seniors were taking the bus alone.

### **Seniors' Service Providers**

The seniors' service providers included in the study held a variety of positions within the selected organizations, some having frontline roles such as volunteers,

community care workers, nurses, and social workers; others were in management positions, such as program coordinators, volunteer coordinators, managers of programs, and executive directors. The participants that were in the latter positions had often started in frontline roles and were then subsequently hired into management positions. The ages of the seniors' service providers were varied; some were in their 20s while others were seniors themselves. However, most of the seniors' service providers were middle-aged or seniors and were mostly women (25 women compared to 11 men included in interviews). The seniors' service providers were also diverse in terms of their culture, ethnicity, languages spoken, and Indigeneity, reflecting the diversity of the seniors within the organizations. For example, the coordinators for the Chinese grocery bus were also Chinese and Mandarin-speaking.

### **Transportation Providers**

The three bus operators interviewed were white, English-speaking, approximately 40-50 years of age, and all were men. English proficiency is required to be hired as a bus operator; however, some positions also require a knowledge of French (see the City of Ottawa's bus operator recruitment webpage, <https://ottawa.ca/en/jobs-city/bus-operator-recruitment>). These three bus operators were English-speaking but did not mention being able to communicate in any other language.

The six managers who were interviewed were all white, approximately in their 40s-50s, and mostly men (4 men, 2 women). All managers spoke English, although one also appeared to be bilingual in English and French. Some OC Transpo jobs require fluency in both English and French to be hired, while others consider the knowledge of

French an asset or will teach French to employees upon being hired (see the City of Ottawa's webpage <https://ottawa.ca/en/jobs-city>). Unlike the seniors' service providers, only one manager mentioned that they had started working at OC Transpo on the frontlines in customer service. None of the six managers had started as a bus operator.

### **NVivo Analysis**

The data for this project were analysed using NVivo, a software program used for qualitative data analysis (Brooks-Cleator, Giles, & Flaherty, 2019). In total, 311 pages of typed, single-spaced field notes and 1161 pages of typed, single-spaced transcribed interviews were reviewed for this analysis. Before documents were uploaded to NVivo for analysis, I first eliminated transcriptions or parts of transcriptions that were not focused on transportation. I used keywords to search through the 1472 pages of field notes and interviews to find the portions of these documents that specifically discussed transportation. The keywords that were used included: transportation, transit, transport, OC Transpo, Para Transpo, paratransit, O-Train, LRT, bus, train, car, drive, taxi, walk, bike. Alternative forms of these words were also used as keywords (e.g., driving, biking).

This resulted in 35 pages of single-spaced field notes (including informal discussions with bus operators), 58 pages of single-spaced transcribed interview text from seniors and seniors' service providers, and 75 pages of single-spaced transcribed interview text from manager interviews. These 168 single-spaced pages were uploaded to NVivo for analysis. Data was analysed in NVivo using the thematic content analysis process outlined by Braun & Clarke (2006). Braun & Clarke (2006) outline six steps for thematic content analysis, namely: familiarization with the data, generating initial codes,

searching for themes, reviewing themes, defining and naming themes, and producing the report (see Figure 3).

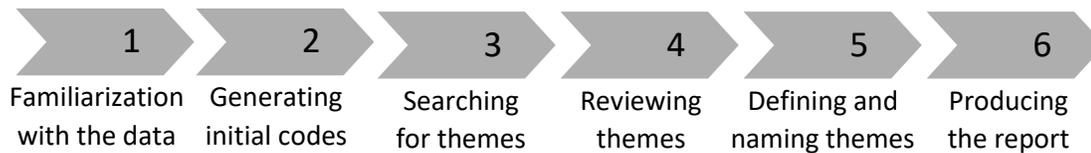


Figure 3: Thematic content analysis process (Braun & Clarke, 2006)

For the first step, the transcription of the field notes and interviews was completed by a professional transcription service; however, using keywords to find field notes and interview data that were relevant to transportation allowed for familiarization with the data. Next, initial codes were generated in NVivo to search for initial themes (Braun & Clarke, 2006). My initial approach included coding for barriers to transportation and challenges and/or problems with transportation and for different facilitators of transportation and promising practices. For example, barriers included health and mobility limitations, language barriers, lack of information on transportation options, cost of fares, stress, and issues with Para Transpo, while promising practices included helpful bus operators, alternative transportation programs, accessibility, and seniors' service providers. I also began coding for the perspectives of seniors, seniors' service providers, bus operators, and OC Transpo managers. My initial codes also included: modes of transportation (e.g., personal vehicles, OC Transpo buses, Para Transpo vans, grocery buses, and taxis); uses for transportation (e.g., physical versus social, such as using buses to travel to a medical appointment versus a social activity); locations of routes and stations; and demographics of seniors (e.g., culture, language,

gender, etc.). These initial codes identified the features of the data and the list of codes was then organized into themes (Braun & Clarke, 2006). To ensure that these themes and the relationships between the themes were valid, they were only considered themes if the same ideas were coded in multiple interviews or informal discussions and seemed to accurately reflect the data overall (Braun & Clarke, 2006).

For the third phase of the process (searching for themes) I assembled collections of codes into potential themes (Braun & Clarke, 2006). I determined that the data I had coded as various barriers, challenges, and problems could be more clearly organized into themes of transport disadvantages and social disadvantages and that the promising practices seemed to address only social disadvantages (Lucas, 2012; Braun & Clarke, 2006).

I then completed the final steps in this process by refining my themes, defining them, and naming them to better fit the data by drawing on the research from Lucas (2012) to reflect my research questions (Braun & Clarke, 2006). I determined that the theme of transport disadvantage could be divided into sub-themes of transit disadvantage, non-drivers, no information (about transportation options), and cost of fares. Furthermore, I determined that the theme of demographics could be incorporated into previous coding for social disadvantages and organized into sub-themes of language barriers, low income, mobility issues or illness, and gender.

As seen in Figure 4, it appeared that interactions between the themes of transport disadvantage and social disadvantage contributed to barriers, challenges, and problems with transportation for seniors — these are the connections highlighted in the green box by the dotted lines with arrows. The coded promising practices and facilitators tended to

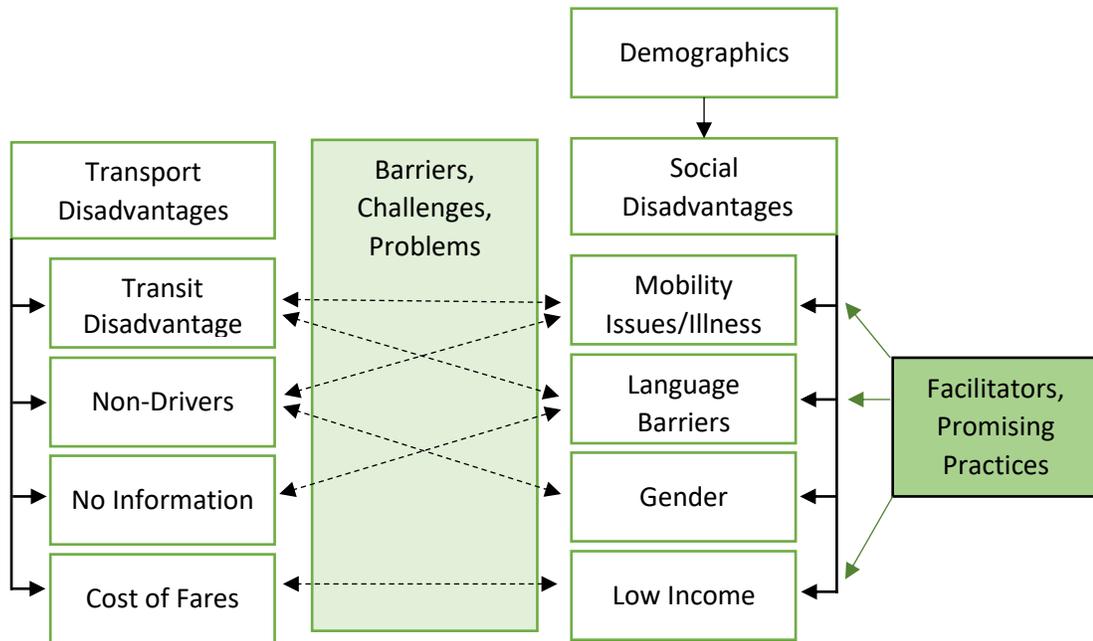


Figure 4: Thematic map of coding in NVivo

address themes of social disadvantage. These are illustrated by the arrows pointing from promising practices and facilitators to the various social disadvantages. Finally, what was particularly beneficial about coding the four different perspectives from seniors, seniors’ service providers, bus operators, and OC Transpo managers was that I was able to see how these four groups understood the issues differently depending on their perspectives, which will be further discussed below.

## **Chapter 5: Findings & Discussion I—Barriers, Challenges & Problems**

Thus far, Chapter 2 provided a broad discussion surrounding the potential impacts of transport poverty and transport-related social exclusion among seniors. Chapter 3 and Chapter 4 subsequently provided the context for examining these issues in the City of Ottawa and from the perspectives of seniors, seniors' service providers, bus operators, and OC Transpo managers. Chapter 5 will begin with a description of the various transportation options that were used by this sample of seniors in Ottawa. Next, this chapter will present results from the ethnographic field work and interviews, exploring themes regarding the barriers, challenges, and problems experienced by seniors in Ottawa. Facilitators and promising practices will be discussed in Chapter 6.

### **Seniors' Use of Accessible Transportation**

Many seniors in our sample reported that they regularly used at least one form of accessible, shared transportation, such as OC Transpo's public transportation services or other shared transportation services provided by various organizations. It was unclear which services were used the most overall; however, seniors infrequently reported that they only drove, or received rides from others in a personal vehicle. Most seniors reported that they used public transportation options or other shared, accessible transportation options (e.g., grocery vans) alongside personal vehicles. These patterns seem to contradict the City of Ottawa's findings from 2004, where almost all seniors (78%) reported that the mode of transportation they used most often was driving their own car, followed by having a family member drive them (10%) and using transportation (7%) (City of Ottawa, 2011).

Many seniors used multiple modes of transportation, but there appeared to be a distinction between drivers and non-drivers. All seniors still primarily used personal vehicles or rides from family and friends, but drivers appeared to use public transportation or alternatives to public transportation for when driving was not convenient. Meanwhile, non-drivers seemed to report that they tried to maintain their independence by finding their own way to travel to events and activities via public transportation; many did not want to rely on others for a ride. This sentiment is also reflected in interviews by Bryanton et al. (2010), who found that seniors who stop driving are hesitant to rely on family and friends for transportation.

Seniors on the bus tended to primarily discuss problems with inadequate transportation such as problems with routes, service changes, cost of fares, and accessibility. Those interviewed on the bus did not generally report issues with language barriers or accessing information, for example. These latter issues, which are attributed to transport poverty, were mainly discussed by seniors who were interviewed at organizations offering activities or programs for seniors, who sometimes used alternative transportation services to attend events at those locations.

Still, it was apparent that shared, accessible transportation is highly used by seniors and also very much appreciated. All seniors in our sample recognized the necessity of having access to transportation, but most often expressed gratitude for alternative transportation services compared to public transportation services. For example, seniors who used the grocery bus programs shared how much they appreciated this service. In fact, seniors who participated in these programs were very adamant about

sharing their opinion with researchers, even seeking translation from volunteers or researchers if the only language they spoke was Mandarin.

What is most notable about the alternative forms of accessible, shared transportation that are offered by various organizations is that they were often established to serve the needs of specific groups of seniors. This finding coincides with research by Bittner et al. (2011), which found that alternative modes of transportation offered by seniors' service, community, and faith-based organizations filled a gap in public transportation services for seniors with mobility issues. In the present study, grocery bus programs, programs that assist with medical appointments, and taxi programs were catered to seniors with linguistic and cultural needs, low-income, and cognitive and mobility needs — all of which are generally considered to be related to social disadvantages. For example, these programs allow seniors to access culturally appropriate services and goods (e.g., access to grocery stores with culturally appropriate food) or are provided in languages that suit seniors' needs. Importantly, these programs serve groups of seniors who already experience gaps in public transportation services, who were also most appreciative of these alternative services compared to seniors who can use public transportation services more easily or can drive. This may suggest that experiencing transport poverty is stressful but somewhat alleviated by these services. Indeed, as Lucas (2012) stressed, alternatives to public transportation tend to compliment public transportation services.

However, in line with other research (Lucas, 2012), we found that problems with these alternative transportation programs also occurred, thereby impacting access to

transportation for seniors and impeding their ability to access social opportunities or fulfill their practical needs. We observed alternative transportation services that had problems with low funding and a lack of volunteers because they were run by non-profit organizations. Overall, transportation services, whether they were public or alternative services, were still highly used by seniors despite the challenges identified.

### **Barriers, Challenges, and Problems**

Many barriers, challenges, and problems with transportation were identified across the perspectives of seniors, seniors' service providers, bus operators, and OC Transpo managers. Lucas (2012) discussed how not having a car or not having information about transportation, as well as having poor public transportation services, high cost of fares, and fear of crime were seen as transport disadvantages. These transport disadvantages were discussed alongside social disadvantages such as low income, no job, low skills, ill health, and poor housing, as summarized by Figure 1 (Lucas, 2012). However, as mentioned in Chapter 2, Lucas (2012) examined transport poverty across the entire population. Therefore, in the following sections, some problems that were identified as contributing to transport poverty for older adults in Ottawa overlap with those identified by Lucas (2012). However, our field study also revealed that the way that transport poverty was experienced by seniors in Ottawa differ from those suggested by Lucas (2012), demonstrating that different age groups may experience diverse factors contributing to transport poverty and social exclusion.

The following section discusses the factors (and interactions between those factors) that influence on transport poverty for seniors (Lucas, 2012). The interactions

between the themes of transport disadvantage and social disadvantage manifested as barriers, challenges, and problems with transportation for seniors. In this study, transport poverty seemed to be less about having no access to transportation (since we only surveyed urban areas), but instead was more about the availability of transportation options that allowed older adults to reach destinations that fulfilled their needs (Lucas et al., 2016).

### **Interactions with Transit Disadvantage: Mobility Issues/Illness and Language**

While transport disadvantage encompasses issues with all types of transportation, including personal vehicles and public transportation, *transit* disadvantage involves barriers to accessing public transit that are due to transit system problems (Currie et al., 2010). In this field study, seniors experienced transit disadvantage due to general problems with public transit (e.g., route changes, timing and reliability of buses) as well as accessibility of buses, stations, and stops, in line with previous research (Bittner et al., 2011; Broome et al., 2011; Broome et al., 2010; Broome et al., 2013; Bryanton et al., 2010; Curl et al., 2014; Klassen & Allen, 2005; Levasseur et al., 2015; Mullen, 2005; Titheridge et al., 2009). Many seniors discussed system-wide issues such as timing of buses and bus routes, which can contribute to problems with access. Seniors reported that the buses were late or not showing up at all, and the timing and scheduling was reported to be unreliable. Bus operators discussed the effort they put forth to stay on-time, while OC Transpo managers worked to create a reliable transit system. Maintaining a transportation system that is reliable also received the most focus from OC Transpo managers, who concentrated on tracking buses and improving the reliability of their

services. Finally, like other research (Bittner et al., 2011), seniors acknowledged that bus routes and schedules might not be convenient for seniors who want to use buses at off-peak travel times.

These problems were experienced by both socially advantaged and disadvantaged seniors (see similar discussion by Currie et al., 2010). However, while all seniors who reported these problems experienced transit disadvantage, it is important to note that most seniors were still able to fulfill their needs using existing public transportation services (Lucas et al., 2016). It is often assumed that addressing problems with transportation for all age groups will address problems experienced by seniors (Bittner et al., 2011). Meanwhile, there were socially disadvantaged groups that appeared to be more impacted by transit disadvantage.

Transport poverty meant that some groups of seniors experienced challenges that hindered their ability to maintain meaningful relationships, to participate in society, and to fulfill their health needs (e.g., visiting a doctor, grocery shopping). As Lucas (2012) explains, transport poverty can lead to inaccessibility of social networks, goods, and services, that can result in social exclusion and stress.

Transit disadvantage can also be experienced by specific groups of people because of widespread transit system problems. For example, groups of seniors with limited mobility, with health challenges, or with language barriers may not have their transportation needs fulfilled despite having access to public transportation. Accessibility is not just about changes to the physical environment, such as adding benches to bus stops, but rather that accessibility also involves the relationship between the physical

environment and personal mobility capabilities (Gharebaghi et al., 2018). The transportation system might be accessible for older adults experiencing minor declines in mobility, but not for others who have mobility issues due to aging in combination with an illness or health condition. The interaction between transit disadvantages and mobility issues and illness is depicted in Figure 4 with the arrow between these two factors.

Likewise, Ottawa seniors report that language barriers are common to recent immigrants (United Way Ottawa, 2017). While language barriers to public transportation is recognized as a system-wide problem that affects many immigrants, it is experienced by groups of older adults that already experience social disadvantage due to mobility issues and illness as well. In Figure 4, this interaction is depicted with the arrow between transit disadvantages and language barriers.

### ***Mobility Issues and Illness***

It is common for seniors to experience declines in health and mobility (Bittner et al., 2011; Engels & Liu, 2011; Fordham et al., 2017), many seniors and the seniors' service managers discussed that having mobility issues, injuries, or illnesses further exacerbated accessibility issues. Some seniors and seniors' service providers reported that it was nearly impossible for some seniors to stand on a bus or to walk to stops or stations, especially in the winter months.

Seniors also reported that the busyness of the bus on "no-charge day" (Wednesday) created problems with the cooperative seating, which are designated seats for older adults, people with disabilities, mothers and their babies and expectant mothers, and anyone with an injury or illness. Some of the seniors interviewed reported that

patrons on the bus often did not abide by the cooperative seating rules, even when those seats were clearly labeled. One senior described their experience saying that “[*people*] don't even get up from the seats that are reserved for people who are handicapped - those with physical disabilities - they don't stand up and let you in.” Additionally, since the cooperative seats are shared between different groups, there are more conflicts on Wednesdays about who needs the seat most. Although the seats are first-come, first-served for these groups, many seniors expected more priority when they were visibly struggling to stand on the bus due to disabilities or balance issues. For example, in my own observations after only a short time on the bus, I observed such a conflict between a few seniors who were already seated in the cooperative seating and a young couple with a stroller who boarded the bus. The couple with the stroller expected the seniors (one of them using a walker), to move from the cooperative seating (even though the seating is first-come, first-served). Such conflicts could result in seniors with mobility issues avoiding the bus on no-charge days if they cannot guarantee they will have access to a seat, despite cooperative seating measures. These examples also highlight the interactions between physical accessibility and social dimensions. Seniors with mobility issues or illnesses might feel social tension, shame, and/or anxiety, or feel that other passengers judge them for taking up space with their wheelchairs or other mobility devices on conventional buses.

Bus operators reported that they were trained to be aware of accessibility issues, but one operator stressed that their “*training altogether lasted for approximately eight weeks so they had to do most of their learning about accessibility on the job [to deal]*

*with different groups of people who have [different] accessibility needs.”* However, one operator emphasized that *“some operators [take this training] more seriously than others and are more courteous, while some are just more worried about the time pressure, [which] can make them act in ways that might not be as kind to people who need extra time.”* Furthermore, two of the bus operators discussed situations where they could not accommodate a wheelchair on the bus due to the busyness of no-charge days. The bus operators stressed that they felt troubled by having to leave someone behind, especially in the winter, but that the buses cannot accommodate the combination of the strollers, wheelchairs, and assistive devices, especially on Wednesdays. The bus operators revealed that, in this scenario, they would have to call their dispatcher to tell them they had left a person behind. However, one operator explained that this was done to inform the OC Transpo head office of the situation so that the customer service department could clarify the circumstances to the customer if they phoned with a complaint. One OC Transpo manager explained that, in a situation where the bus is overloaded and cannot accommodate another wheelchair, the control centre would check how far away another bus was and either inform the next bus that there is a person waiting in a wheelchair or dispatch another bus.

Beyond the issues experienced by seniors on no-charge days, seniors, seniors’ service managers, bus operators, and OC Transpo managers all mentioned that seniors experienced physical barriers to public transportation on any day of the week. Many seniors reported that it was difficult to stand on the buses while they were moving, reporting that they felt off balance. Similarly, the bus operators mentioned that they

needed to drive more carefully to accommodate seniors who are less mobile. However, one operator mentioned that there is a trade-off between giving seniors the time they need to be seated and the time pressure they are experiencing on Wednesdays. This operator mentioned that he could not always wait for seniors to be seated before pulling away from the curb. However, another operator mentioned that he took extra time to ensure seniors were seated before pulling away from the curb because he did not want to be liable if they got injured from falling. He said that he took these precautions for the sake of the customer, but also to avoid the paperwork that would accompany an injury on the bus.

Furthermore, in addition to accessibility issues on the buses themselves, seniors need to physically visit Shopper's Drug Mart to have the seniors' rate added to their PRESTO card, even if they purchase a PRESTO card at a bus or O-Train station, given that it is a requirement to have an employee verify that they are a senior by looking at their government identification. Some of the OC Transpo managers believed that it would be difficult for some seniors to travel to Shopper's Drug Mart, especially if they had mobility issues or disabilities.

In line with previous research (Broome et al., 2013; Broome et al., 2010), both seniors and managers of seniors' services mentioned that the walkability to bus stops and stations was an issue that had a negative impact on seniors' use of transportation. Seniors included in our study often indicated that sidewalks were in poor condition and that there was a general lack of sidewalks leading to the bus stops and stations, but these problems were more profound for seniors who use mobility devices. One of the seniors' service

managers put this issue into perspective explaining that there were plans to put an O-Train stop “300 meters away” from their seniors’ centre “*which does not sound far, but it is significant for some of our members who walk, use a cane, a walker, and who do not want to take Para Transpo.*” One senior who used a wheelchair mentioned paying attention to if “*there’s enough shade, and enough benches*” for them to feel “*adequately protected.*” Most OC Transpo managers acknowledged that they were still working on making the entire transportation system accessible, adding more paths to stops and benches at stops. Even for seniors who could reach the bus stops, they reported that the bus shelters were either non-existent or ill-equipped for all weather conditions.

**Weather-related challenges.** In Ottawa, winter makes for a very harsh climate, and thus many seniors (especially if mobility issues) reported that it was difficult to get out of their houses and walk to stations since it is so easy to slip and fall. This issue often prevents seniors from being able to get out and visit others, go to events, and grocery shop, because they cannot risk falling. Similar findings were also reported by Morales, Gamache, & Edwards (2014) who stated that inaccessibility of transit in the winter could lead to social isolation of older adults. Indeed, one senior in our study described how there were “*some days [where] getting to bus was really, really hard, and [she knows] a lot of people just didn’t go out this winter [because] they just couldn’t.*” As a result, seniors’ services managers increased their transportation services in the winter to meet seniors’ needs. Increasing the frequency and reliability of transportation services to improve winter accessibility was recommended by a study conducted in Quebec; however, in Ottawa, alternative transportation services (e.g., transportation programs

offered by not-for-profit organizations) have tried to address this gap instead of conventional transportation services (public transportation; Morales et al., 2014).

OC Transpo managers also recognized the additional accessibility challenges that seniors face in the winter. They mentioned that snow removal is a problem because it is the city's job to clear the snow, as opposed to OC Transpo's job, but snow and ice nonetheless prevents seniors from accessing transportation. Some managers recognized that snow and ice would isolate some seniors and that is was a major barrier, however some had the attitude that living in Ottawa means that all snow cannot be removed.

**Para Transpo.** Some seniors used Para Transpo if they required more assistance with mobility issues—especially during the winter months. However, these seniors often experience social disadvantage in the form of a mobility issue or illness, which is then combined with transport disadvantage because of the problems accessing public transportation via Para Transpo. The combination of these issues could lead to transport poverty. All groups included in the present study, with the exception of bus operators, discussed issues with Para Transpo; however, it is understandable that the conventional bus operators did not discuss Para Transpo given that they were hired for standard bus service and received separate training. Para Transpo requires that you book a ride over the phone, which means that pick-up and drop-off times must be scheduled in advance. Seniors, seniors' service providers, and OC Transpo managers frequently mentioned that a challenge with the Para Transpo system is the long wait times on the phone to book a trip. Additionally, there are issues with the timing of pick-ups from seniors' homes and pick-ups after an event, activity, or appointment.

Seniors and seniors' service providers reported that many seniors were stressed about events ending on time so that they can be on-time for their Para Transpo pick-up, thereby impacting their experiences at activities when they traveled using Para Transpo. Also, Para Transpo was often late to pick-up customers from their homes, which caused stress about being on-time for appointments or activities. One senior mentioned that they:

*Always make reservation for transportation allowing for delay. So when I, for example, want to be at the senior centre for a particular activity [at] 10 AM, I make sure to allow for one and a half hour, so I ask to be picked up at around 08:30 AM.*

Another senior mentioned that they often “[wait] for a pick up for not one, not two, but three hours.” Finally, one senior reported that they had given up hope of the service operating smoothly and needed to “adjust [their] expectations about [Para Transpo’s] services.” Although many seniors were concerned about Para Transpo, one manager mentioned that even if seniors had a delayed pick-up, Para Transpo ensures that they will be dropped off at the scheduled time. For example, if Para Transpo arrives 30 minutes late, and only have 30 minutes instead of an hour to get you to your destination, then they will prioritize that individual’s drop off over others who were picked up on time.

Additionally, three managers mentioned challenges with contracting out Para Transpo services through Para Logistics, a company that works with Para Transpo to contract work to bidding taxi companies. However, taxi drivers are not trained in the same way as the Para Transpo operators, therefore often creating problems when helping seniors into the vehicle and leaving if seniors take too much time to exit their homes.

Seniors used Para Transpo because they could not use conventional bus services due to mobility issues, disability, and illness, but transport poverty could prevent seniors from maintaining meaningful relationships and participating in society.

Ottawa's TMP has initiatives that are in place to improve the accessibility of public transportation for seniors with mobility issues and other disabilities and illnesses (City of Ottawa, 2013). Older adults with mobility issues or illnesses still reported many system-wide challenges when using public transportation. Furthermore, addressing physical accessibility issues is only the first step towards an accessible public transportation system. Other accessibility initiatives need to address language barriers, another social disadvantage that interacts with transit disadvantage.

### ***Language***

In addition to the link between transit disadvantage and issues related to mobility and/or illness, another social disadvantage that impacted some seniors was language. In this regard, seniors who spoke languages other than English or French expressed that they had a hard time using conventional transportation services. However, surprisingly, older adults who only spoke French or preferred to speak French also experienced barriers to using transportation. Indeed, one of the researchers involved in this project discussed “[the] fact that transportation is lacking—[there is] not even transportation in French - they’re not even getting [to the seniors’ centre] in terms of language.” This is a significant issue given that Canada has two official languages: English and French, and these services are not serving French-speaking Canadians to their full potential. This was also a surprising finding considering that *The Council on Aging of Ottawa* (2013) found

that Francophone seniors used public transit slightly more than Anglophone seniors. Although there is no expectation for the entire transportation system to be translated into every language that people speak, there is an expectation that services in Canada are provided in both English and in French.

In addition to the standard bus services, seniors also experienced language barriers when using Para Transpo. For example, seniors who could not communicate in English or French experienced challenges when making a phone call to book the service, and it even deterred people from using the service altogether. One of the seniors' service providers elaborated on this:

*For [the Mandarin-speaking seniors], we have Para Transpo in Ottawa, but you have to call in English to request all those – like, the rides, right, so which they can't really do. And they have a very long waiting over the phone, and [the seniors] are afraid of calling [Para Transpo] because they know there is nobody can speak Mandarin there.*

These findings echo those found in previous research, in which seniors who were unable to speak English did not have the confidence to communicate with non-Chinese speakers and became reliant on others for transportation (Ip et al., 2007).

The examples above demonstrate that seniors experience barriers to transportation due to the design of the public transportation services combined with their language barriers. Transit disadvantage involves barriers to accessing public transit that are due to transit system problems (Currie et al., 2010), even if these issues are unlikely

to be thought of when considering problems with transportation. Interviewing seniors who speak languages other than English highlighted that the bus system is optimized for the English-speaking population. Moreover, OC Transpo has arranged a Para Transpo system that requires the use of a phone call to book trips (rather than online booking for example), which was highlighted as a problem when seniors with language barriers were interviewed. Thus, seniors who do not speak English experience language barriers (i.e., a social disadvantage), which, when combined with a bus system that is not optimized for them, can culminate in transport poverty.

### **Interactions with Non-Drivers: Mobility Issues/Illness and Gender**

In the discussions of barriers to transportation for seniors, there were many comparisons between seniors who chose to drive their own personal vehicles vs. seniors who were non-drivers. In contrast to the model offered by Lucas (2012), it seemed as though, for seniors, transport disadvantage was not influenced by owning a car. Instead, whether it was by choice or not, being a non-driver created transport disadvantage for seniors. The ability or choice to drive was often discussed in conjunction with social disadvantages such as low mobility, cognitive decline, or other health-related issues that could prompt someone to choose to stop driving or be advised to stop driving (Bittner et al., 2011; Curl et al., 2014). The interaction between non-drivers and mobility issues and illness is symbolized by the arrow between these two factors in Figure 4. Additionally, non-drivers were more likely to be women than men, a finding that is supported by previous research (e.g., City of Ottawa, 2011; Kim, 2011). The discussion of the

interaction between non-drivers and gender is represented by the arrow between these two factors in Figure 4.

### ***Mobility Issues and Illness***

In informal discussions with seniors and seniors' service providers, seniors who were drivers were commonly described as healthy and mobile. Drivers also often offered rides to less mobile seniors, so that they could also attend activities. Meanwhile, non-drivers were described as seniors who experienced discomfort with driving, mobility issues, isolation, and/or dementia. Indeed, seniors' service providers mentioned that staff tried to drive seniors to events and activities if they were non-drivers and more isolated. Taken together, these findings appear to coincide with previous research suggesting that seniors who are non-drivers face more rapid declines in physical and cognitive health compared to seniors who are drivers (Chihuri et al., 2016).

Among the seniors interviewed in our research, many expressed that they wanted to remain driving as long as they could and were scared to lose their driver's licence, thereby aligning with other research on driving cessation (Curl et al., 2014). Many seniors discussed the significance of having a driver's license and how devastating it would be to not be able to drive. For example, as recounted in one of the researcher's field notes, one senior was adamant about being able to drive, despite having health issues:

*[He] told me has quite significant arthritis, both osteoarthritis and rheumatoid arthritis, and you can see it in his hands. They were quite curled and he can't open his hands and use them, as he said, in the*

*way that he used to be able to, but he told me that, you know, he said*

*“I can still drive, I can still get around...”*

Another senior was scared about driving in the winter because she “*didn’t want to lose her driver’s license*” and would be unable to attend day programs.

**Drivers.** Among the reasons that seniors wished to drive, some reported that they drove their car if public transportation was not convenient. Drivers were able to maintain their independence using their own vehicle; however, additionally, they did not appear to experience many barriers to using public transportation. Thus, they were free to choose the mode of transportation that best suited their needs on any given day. A senior who could both drive and take public transportation explained this decision-making process when deciding how to travel downtown:

*[Getting downtown is] actually very good by car. I can be downtown in about 15 minutes. The bus, I’ve kind of gotten a little bit impatient with because they keep changing their numbers, they keep changing the routes. I’m not so wild about the collector buses that they put in, in transit ways.*

However, as seen in previous research (Bryanton et al., 2010), for seniors who lived in rural areas, it was often necessary to use a car for transportation to activities, programs, etc. Although urban areas were the focus of our study, one site was more rural and located outside the city centre (outside the greenbelt); however, the site was attended by older adults living in both urban and rural areas. As I noted in my field notes after visiting this remote site, in order to “*reach [places] where they felt [a] sense of*

*community, they needed to be able to drive... they couldn't see their friends and participate in these activities at [this seniors' centre] if they weren't able to drive there."*

However, our findings also indicated that there were locations within the city that required a car to access. Some researchers noted that it was difficult for them to visit study locations without the use of a car (e.g., a location in the city core that was poorly served by public transportation services and a location that was 20 minutes outside the city centre) even though they were travelling within the city centre.

**Non-drivers.** When driving was required or more convenient, non-drivers would need to ask their children, family members, or friends to drive them to these locations. However, this situation can be isolating if seniors cannot drive and cannot—or do not want to—get a ride from family members. Seniors tended to feel a loss of independence along with the inability or choice not to drive, which was also reported by seniors interviewed in previous research (Bryanton et al., 2010). For example, one senior described this experience in an informal discussion about her declining mobility:

*[My] daughter had left and I was alone and I hadn't -- never in my life -- but I had a panic attack and it was about groceries. How was I going to go grocery shopping? Because I have to get grocery shopping, I would need to bring my walker. And you can't really shop with a walker.*

Non-drivers often maintained their independence by using public or alternative transportation to travel to activities, programs, and other locations, as they felt less independent when they asked others for a drive. One senior discussed how they used

Para Transpo, despite the problems with the system, because she did not want to “bother” her daughter for a ride. Another senior took public transit on Wednesdays to visit his family so that he would not need to be picked up by his daughter.

However, many non-drivers reported barriers to public transportation, even when it was available for them to use. These barriers often reflected the reasons they chose not to drive or could no longer drive in the first place. For example, for non-drivers living with disabilities or mobility issues, walking to bus stops or transit stations might not have been an option; however, they were also non-drivers because of those same disabilities and mobility issues. There is a debate about whether declines in physical health lead to driving cessation or if lower activity levels from driving cessation lead to declines in physical health (Chihuri et al., 2016). In our research, it appeared that most seniors stopped driving due to underlying mobility issues and health conditions.

Although some research (e.g., Fordham et al., 2017) has posited that a reliance on cars could impact older adults’ willingness to learn about alternative transportation options and that they would lack experience with using public transportation, our findings suggested the opposite: seniors who could not drive wanted to use public transportation, but the services did not always meet their accessibility needs (analogous to other previous research (Bryanton et al., 2010), and building on the findings from the interactions between transit disadvantage and mobility issues and illness). However, our findings suggest that to overcome such barriers, seniors who cannot use public transportation due to mobility issues often seek out transportation alternatives provided by seniors’ organizations. As seen in previous research (Engels & Liu, 2011), these

seniors are therefore disadvantaged due to location, inability to use a car, and barriers to accessing public transit because of mobility issues and illness. One seniors' service provider discussed this issue in detail:

*[Another] challenge that we are facing, and we haven't yet found out a solution is that the people, seniors, are immobile, who cannot drive, they don't get a ride to come. They want to come but then they have limitations, right.*

This issue is compounded in the winter when it is more difficult for everyone to walk in the snowy and icy conditions. Non-drivers tended to be more socially isolated as a result, which was recognized by seniors' service providers. Thus, a lack of accessible public transportation, combined with being a non-driver, could create challenges for older adults who wanted to attend activities and programs or complete errands.

### ***Gender***

Previous research from the City of Ottawa and other sources have reported that non-drivers are more likely to be older women (City of Ottawa, 2011; Choi et al., 2012). Informal discussions and interviews with seniors and seniors' service providers as well as our team's observations, also revealed that our sample had more women who were non-drivers compared to men. Of the seniors on the bus who were included in informal discussions, many older women told us that they did not drive. In informal discussions with seniors' service providers, the volunteers and employees from the various programs and centres tended to give rides to seniors, and they also mentioned that they would most often give women rides. Seniors from different programs or centres would also give rides

to friends who attended the same programs—these seniors also most often mentioned that they would drive women to and from activities. Additionally, of the seniors with whom I spoke on the bus, more women identified themselves as non-drivers compared to men.

While these findings do not reveal a definitive explanation for more non-drivers being women, we also noted that several of the women in our study who were non-drivers reported that they lived alone. For example, one senior reported that she gave her friend rides because she lived alone, and they went to activities together. Additionally, seniors' service providers often described the seniors who were given rides as "isolated". Women tend to live alone longer than men and are less likely to own a car and/or have a drivers' licence (Kim, 2011; Hjorthol, Levin & Sirén, 2010). Indeed, fewer women in this age cohort get their licence to begin with and the ones who do often choose to stop driving earlier than men (Hjorthol et al., 2010). Additionally, due to societal inequalities, women were not employed to the same extent as men were and, therefore, did not need a car or driver's licence to get to or from work (Hjorthol et al., 2010). Thus, in this generation, older women who have lost their husband have often lost the only driver in their household (Kim, 2011; Hjorthol et al., 2010).

The combination of not being able to drive due to mobility issues or illnesses can make it difficult to stay connected to one's community and social networks through participation in social activities, volunteering, programs, etc. (Curl et al., 2014). Additionally, other studies have explained that older women were found to experience more barriers to transportation than men (Delbosc & Currie, 2011) and they are also not

using public transportation as often as men (Yang et al., 2018; Fordham et al., 2017; Choi et al., 2012). However, in our sample there were more older women that were non-drivers and, while many women reported using public transit, seniors' service providers and other seniors mentioned that many women used alternative modes of transportation (e.g., receiving a ride from a friend, volunteer, or family member). Therefore, the potential exists for the negative outcomes associated with social isolation to impact older women more often than men.

### **Interaction Between Having No Information and Language**

Having no information about available transportation services is another transport disadvantage that interacts with language barriers (a social disadvantage). The connection between having no information and language barriers is represented by the arrow connecting these two terms in Figure 4. Many seniors expressed that service changes were not communicated clearly to them, on a platform that they found accessible. Such a lack of information could put seniors at risk for transport poverty given that seniors who cannot acquire information about transportation options cannot access transportation to meet their needs. Seniors and seniors' services managers explained the difficulties seniors have checking online for route changes and phoning OC Transpo's customer service lines for more information. Many seniors tended to prefer accessing information by phone, although some seniors did want to use the online resources. A seniors' service provider described this challenge from the perspective of their senior clients:

*Just thinking about a lot of seniors that we work with, there's so much that's moving digital, and so many people get left behind. We have so many people that will call us because they can't get information because it's all online. There's so many services that will say, well look it up on the Internet. To phone someone and find information, they can't get it... I spend a surprising amount of time looking at stuff online and then telling people, and then they're really impressed that I can find it out. But it's because they don't have access to that, so really at every stage, whether it's how does someone ask a question, or how does someone get from point A to point B, or when we're having this event, who's at the table and who is not at the table, because we often don't look at [who's] missing.*

Reflecting the interviews and informal discussions with seniors and seniors' service providers, the bus operators also noticed that seniors experienced challenges with accessing information about the changing bus routes. They mentioned that they get a lot of questions from seniors about route changes and bus number changes, as a result of the new O-Train line opening. However, the bus operators reported that it was difficult to communicate route changes when they themselves are not aware of every change to every route because they get assigned a bus route when they begin their shift, rather than consistently driving on one bus route. The bus operators explained that before they all begin their shifts in the morning, all bus operators meet at the bus yards and get ready for the route they are assigned that day. However, this also means that the bus operators who

are not scheduled can come and pick up shifts from people who are on vacation or sick. This leads to inconsistencies in the information that bus operators have about their own routes, because they are assigned different routes all the time. It also decreases the reliability and consistency of the bus routes. Thus, although it was not surprising to see that seniors came to these bus drivers in an attempt to speak face-to-face with someone to gather information (given their challenges with accessing that information by phone or online, as noted above), the bus operators themselves were not necessarily the best source of consistent and accurate information for seniors.

OC Transpo managers also highlighted how difficult it can be for seniors to find information about fares. Managers mentioned that they thought seniors struggled to decide which fare pass they should use, but that seniors might already have access to this information on OC Transpo's website (<https://www.octranspo.com/en/fares/reduced-fares/>). However, being able to access information about fares would also require internet access and the ability to navigate the internet. Seniors who are unfamiliar with this technology will not be able to find this information. There are multiple passes, such as the Community pass, EquiPass, and seniors' pass; however, one manager explained the challenge seniors encounter when deciding which pass to purchase, especially when they are between the ages of 55 and 65:

*[You] will have a gap between 55 and 65 in terms of [what] fares you qualify for, right? So if you're a low income senior, I mean, you could apply for the EquiPass... if you're under 65, and then once you get to*

*65 and over, you can apply for the seniors concession. So—so there is a little bit of a—discrepancy there, yeah.*

OC Transpo's website indicates that someone should not use the EquiPass if they are a senior with low-income because the seniors' pass is more discounted (<https://www.octranspo.com/en/fares/reduced-fares/>). However, older adults that are aged 55-65 cannot qualify for the most discounted fare and might not be able to participate in activities for seniors, as a result.

There are also issues with communicating when seniors need to use their PRESTO card. The buses do not currently have FareGO technology, so seniors do not need to use PRESTO on the no-charge bus days or their PRESTO card will be charged. The FareGO system is able to read that a PRESTO card is programmed with a seniors' discount to let seniors through the fare gates free of charge. Seniors do need to tap their PRESTO card at O-Train fare gates, even on no-charge days, because of the FareGo technology that allows them to pass through the gate. However, how to use the PRESTO card as a senior is not communicated on the OC Transpo website (<https://www.octranspo.com/en/fares/payment/presto/>). Thus, there are multiple challenges for seniors in accessing information related to bus routes, changes and fares, as evidenced by the perspectives outlined above. However, those challenges may be amplified among seniors who already have trouble navigating the bus system due to language or cognitive barriers.

Seniors' access to information about city's transportation systems should be a considered a priority (Broom et al., 2010; 2013). Building on this idea, immigrant seniors

who have limited knowledge of English or French have trouble communicating with service providers and accessing information about available transportation services (Stewart et al., 2011). Choosing which transportation pass is suitable might be a challenge for seniors whose barriers to using technology to find information are amplified by language barriers. Therefore, language barriers not only prevent seniors from using transportation services, but also being unable to get information to be able to use services that are already in place (Stewart et al., 2011).

The bus operators in our study explained that it was especially challenging to answer questions when older adults spoke languages other than English or French. However, they were mainly concerned about seniors' ability to access information about OC Transpo's services since they could not always communicate this information accurately. OC Transpo managers also revealed that pamphlets and "ride-guides" that are handed out at stations by station ambassadors are only available in English and French. One manager described a scenario where a senior could not communicate with the station ambassador to receive information about the new O-Train line. In this situation, the station ambassador had to use translation apps on their cell phone in an attempt to assist this senior.

Additionally, aligned with previous findings (Stewart et al., 2011), seniors who spoke languages other than English or French reported that they could not call to receive information about OC Transpo services (including conventional bus routes and Para Transpo). Caregivers of older adults with dementia additionally explained that this issue was only worsened by cognitive impairment, as it became more difficult for those older

adults to communicate in general, let alone in another language. Often, seniors' service providers found information on transportation services and relayed it to older adults with language barriers. Indeed, seniors' service providers recognized the need to create transportation services to support seniors who spoke languages other than English or French. As mentioned previously, organizations that supported seniors often developed transportation services to help fill this gap in services for linguistically diverse seniors.

In summary, many seniors experienced issues accessing transportation information online, creating transport poverty when seniors lack information about available services. However, seniors with language barriers experience social disadvantage along with the transport disadvantage of lacking information, thereby building on previous research suggesting a link between language barriers and a lack of information about transportation (Stewart et al., 2011).

### **Interaction Between Cost of Fares and Income**

Seniors who experience low income also experience transport poverty with regard to the cost of fares (see Figure 4). There appeared to be a need for free and low-cost options for accessible, shared transportation – many of the informal discussions we had with participants in our study concerned options that save money. Seniors and seniors' services providers discussed the cost of public transportation fares. Seniors emphasized that it was too expensive to travel by taxi or Uber to events and programs all the time, coinciding with other research in which seniors also reported that taxis were too expensive for regular use (Byanton et al., 2010). Seniors with low income have especially been found to avoid using these options for transportation, culminating in

transport poverty due to income (Kim, 2011). In our study, many seniors commented on the cost of fares or the no-charge days; however, those with low income were the most impacted by decisions made about fares, no-charge days, and alternative modes of transportation.

While seniors and seniors' service providers focused on the impacts transportation fares had on financially struggling seniors, OC Transpo managers mentioned that public transportation fares pose a budget challenge from the management perspective:

*[More] and more people are going to be able to qualify for these really really discounted rates and that might be a financial—call it a burden right now, but that might be a financial challenge that the city will slowly or quickly see over the next five or ten years given, like given the no-charge days, plus the 62 or 63% monthly pass discount, I guess the 25% discount isn't so big on the population that's using it right now, but on the single rides that could be a bigger deal down the road... from a fare strategy perspective.*

OC Transpo managers also mentioned that, from their budget perspective, one trade off for discounts on conventional bus fares was that Para Transpo services did not have no-charge days for seniors. However, this may pose an additional barrier to seniors who already cannot use conventional transportation because of mobility issues, disabilities, or cognitive impairment.

In addition, OC Transpo managers noted that, as OC Transpo phases in the FareGo system, seniors would need to have a PRESTO card even if they are only using no-charge days. In late 2019, as explained by one of the OC Transpo managers, only the O-Train fare gates use a FareGo system, which allowed seniors to tap their PRESTO card on the no-charge days and it would recognize that their card is a senior fare and let them through the gates. The same manager explained that eventually the buses will have this technology too, making it mandatory for everyone to have a PRESTO card to use the system. As a result, there will be a cost to seniors even to use the no-charge day. This could affect seniors with low income, but this did not seem to be recognized by managers who understood that these changes were going to happen and were out of their control.

One manager believed that seniors were a very well-served group because of these fare discounts and no-charge days, considering that no other groups in the city receive the same reductions as these seniors. However, from the seniors' perspective, who often rely on discounted fares to stretch their budgets and use transportation with independence, these fare reductions were inadequate for some seniors. Indeed, a study conducted by Broome et al. (2013) reported that seniors' satisfaction with transportation was attributed to fare prices; however, our results extended these findings by suggesting that seniors not only appreciated reduced fares, but also that they were sometimes entirely necessary for seniors to be able to use public transportation at all.

Seniors' service providers appeared to consider the diversity of seniors' transportation budgets and often acknowledged that some seniors could not afford the same transportation options as others. Their actions demonstrated that they wanted to be

able to help seniors of all income levels. For example, seniors' service providers mentioned the various OC Transpo vouchers they gave to seniors for travelling to events. Many interviews with seniors' service providers also revealed that they purposefully schedule activities and programming on Wednesdays to give seniors more opportunities to use free public transportation to access those social engagement opportunities. Additionally, alternatives to public transportation were planned with the cost to seniors in mind, including the grocery bus trips (mentioned earlier in the Seniors' Use of Accessible Transportation section). In fact, seniors' service providers explained that seniors would vote on the grocery stores that they wanted to visit, usually choosing low cost options. Finally, seniors' service providers ensured that the transportation programs that were arranged for seniors from diverse cultures were also low cost, thereby enabling immigrant seniors who rely on community transportation who may not be able to afford conventional transit (Stewart et al., 2011).

Beyond discussion of fares, one of the most consistently discussed topics was the no-charge day on OC Transpo's bus and O-Train service. Although the no-charge Wednesday service might be viewed as a promising practice, it is also accompanied by problems that were discussed by seniors, seniors' service providers, and bus operators alike. Issues mainly occurred as a result of having just one no-charge day for seniors per week<sup>1</sup>. As mentioned earlier (see Chapter 5, interactions between transit disadvantage and mobility issues/illness), many seniors reported that the bus was busy and crowded on Wednesdays due to the large number of seniors who make use of this free service. Bus

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<sup>1</sup> During data collection in June 2019, Wednesday was the only no-charge day. The additional day (Sunday) was added in July 2019.

operators echoed this sentiment, stating that Wednesdays were the most common day for seniors to take the bus, and noting that this added to the busyness of their buses. They also noted that the buses tended to be especially crowded on Wednesdays during rush hour, but since seniors only had one no-charge day then they could not always avoid that time. For example, one senior described her experience of taking the bus on Wednesdays during rush hour:

*Well there just isn't enough room; people are going to work, so there's a lot — there's more people on the bus, people have walkers, they are parents with strollers and they're like — well double-wide they're really, really long, or they're really big, they take [up space] — and the buses, the newer buses are smaller than the older ones were, so there's less space to sit down.*

It was evident in our interviews with service providers that the no-charge day was highly used by seniors, and our informal discussions with seniors themselves revealed that the no-charge day was necessary for some of them to be able to maintain meaningful social connections and participate in activities. A few seniors mentioned that they used the bus to save money. At the extreme, some seniors revealed that they used the bus on no-charge days as their only mode of transportation. One senior who was a non-driver seemed embarrassed and quiet when I asked about her use of the bus on other days of the week; she appeared to be unable to use the bus without using a no-charge day. In contrast, some seniors who were drivers mentioned that they used the bus to save money on parking and to avoid driving in the busy downtown, but often still on no-charge

Wednesdays. Although we did not know the income of seniors who were involved in informal discussions in our study, this contrast appears to demonstrate that seniors with various incomes all make use of the no-charge day, but for differing reasons.

There is a marked difference between seniors finding various low-cost modes of transportation to stretch their budget on a fixed income, and seniors who have low income. Low-income seniors might *need* to rely on these low-cost options. Seniors with lower income might use public transportation because of the reduced fares and no-charge days as their only affordable option for transportation. There is, therefore, a connection between the cost of fares and income, which puts seniors at greater risk of finding these fares simply too expensive to afford. In contrast, seniors with higher income might chose to use the bus out of convenience, even if they are able to afford their own vehicle. Furthermore, seniors and seniors' services providers discussed affordable options for transportation that allowed seniors to travel to complete specific tasks such as grocery shopping, often as part of their organization membership.

Finally, in light of the challenges encompassed by having only one no-charge day, some seniors have requested that they have a choice over which days are no-charge days, which two OC Transpo managers also discussed. However, these managers explained that it is too difficult to program the PRESTO cards in order for seniors to be able to choose their no-charge days. They explained that they would need to receive direction from Metrolinx/PRESTO to implement such changes, thereby requiring that these actions were approved by the provincial government across the whole PRESTO

system. However, such a change would make transportation easier for low-income seniors.

Both seniors and seniors' service providers acknowledged that this change would allow seniors to choose which days to attend activities, doctors' appointments, social events, that are not on Wednesdays or Sundays. However, seniors' service providers mentioned that seniors who rely on no-charge days to save money might need to choose between using the no-charge day to attend a doctor's appointment or participate in a program or activity that helps them stay connected to a social network. Additionally, the single no-charge day often resulted in seniors' service providers having to plan activities and programs on Wednesdays so that seniors could use the bus to attend. Unfortunately, there is evidence that some seniors will choose "needs" (e.g., grocery shopping) and will sacrifice "wants" (e.g., social activities) if their transportation options do not allow them to fulfill both (Bryanton et al., 2010).

In summary, the barriers to transportation that are most often discussed in previous research are those that address transport disadvantages. However, the findings of the present study have elucidated how barriers to transportation for older adults can involve transport poverty. The dotted lines in Figure 4 depict how these barriers, challenges, and problems with transportation are produced by the simultaneous influence of both physical and social factors. In Chapter 6, initiatives that seek to address these barriers, challenges, and problems will be discussed as promising practices. There will also be discussion of how social exclusion and stress fit into this conversation, given that transport poverty can result in both social exclusion and chronic stress among seniors.

## **Chapter 6: Findings & Discussion II—Promising Practices**

As discussed above, transportation research, policy, and initiatives — and more specifically, transportation policies in Ottawa (and elsewhere) — often focus on physical barriers to public transportation for seniors. However, the findings from this Ottawa field study reinforce the growing need to assess how transport poverty influences social exclusion and stress. The discussion below highlights the usefulness of using multiple perspectives to identify whether seniors’ perspectives on transportation are translated into practice. Additionally, the qualitative nature of this study identifies in-depth several areas that should be taken into consideration by AFC initiatives and city decision-makers when addressing seniors’ social exclusion and stress through transportation initiatives.

### **AFCs and Transportation Policy**

In Ottawa, transportation policy decisions are established with influence from political, economic, and societal contexts. As seen in Figure 5, the social norms and practices, economic and political structures, and governance and decision framework (Lucas, 2012) represent the factors that guide transportation policy to address the needs of older adults. In terms of social norms and practices, the AFC framework has been used to develop the City of Ottawa’s *Older Adult Plan* (City of Ottawa, 2019b; Nanos Research, 2012; City of Ottawa, 2003). One manager mentioned that the *Older Adult Plan* is revisited by the City of Ottawa every few years to improve services that affect seniors, including transportation. This plan creates action items that are measurable and progress on these actions is tracked (City of Ottawa & City for All Women Initiative, 2018).

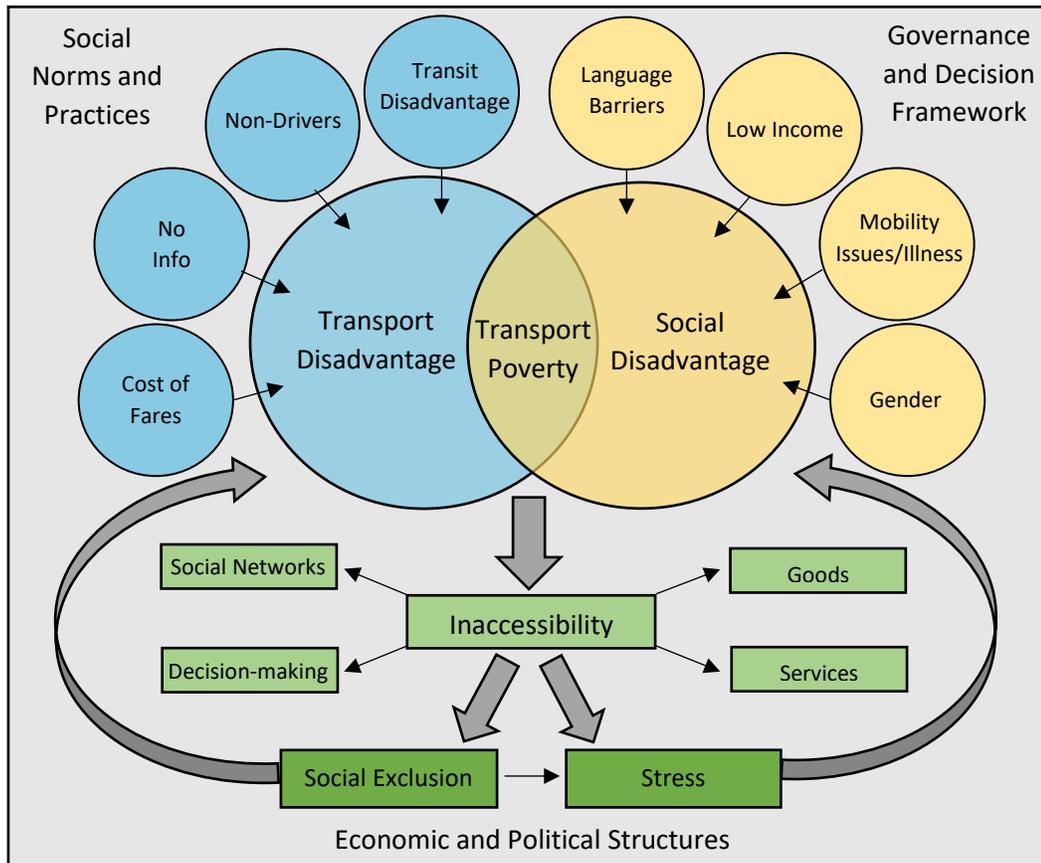


Figure 5: The relationship between transport and social disadvantage, social exclusion, and stress for older adults. Figure adapted from Lucas (2012).

However, while AFC initiatives promote the inclusion of older adults in all aspects of city-planning, transportation is often considered to be a solely physical domain. As the barriers to transportation involve transport poverty, the initiatives that promote social inclusion through the AFC framework will not be as effective in helping older adults if they do not consider both the physical and social influences on social connectivity and stress, both of which can impact seniors’ health and well-being more broadly.

Regarding governance and decision frameworks, as well as economic and political structures, transportation decisions in Ottawa are made by OC Transpo in

collaboration with the City of Ottawa. Along with the City of Ottawa's *Official Plan* and *Transportation Master Plan*, the OC Transpo managers discussed the use of the *Equity and Inclusion Lens Handbook* in decision-making and ridership-based adjustments to the transportation system. These guidelines were used to consider all forms of equity and inclusion when making decisions about accessibility, planning routes, and transportation policy development, as well as when training bus operators.

The *Equity and Inclusion Lens Snapshot* from the *City of Ottawa* and *City for All Women Initiative (CAWI)* (2016) is focused on older adults and recognizes the relationship between transportation and connection to the community. This Snapshot promotes accessible and affordable transportation, stating that “[older adults] who lack access to appropriate transportation find it difficult to stay connected with their communities or access medical services, recreational programs, and social activities” (City of Ottawa & CAWI, 2016, pp. 9). Thus, the connection between transport poverty and social inclusion via access to goods, services, and social networks is acknowledged in the Snapshot document. Both social disadvantage and transport disadvantage seem to be addressed in areas that discuss rural access, reduced mobility, and low income and the connection to inaccessible transportation (City of Ottawa & CAWI, 2016).

This Snapshot also discusses isolation of older women and immigrant seniors with language barriers, but these social disadvantages could be better linked to transportation access (City of Ottawa & CAWI, 2016). Alternative modes of transportation offered by various organizations often serve groups that experience social disadvantages due to language, mobility, and low income (for example)— these are the

initiatives that are most often considered promising practices. These results also show that seniors' service providers create transportation programs that support social disadvantages, so these social disadvantages seem to be underlying thoughts in the transportation field.

In Ottawa, transportation policy decisions are mostly focused on alleviating problems with physical access to transportation. The *Equity and Inclusion Lens Handbook* appears to make good progress considering transport poverty for older adults. However, even with this handbook, there is still a disconnect between initiatives that are implemented by decision-makers to address the transportation needs of seniors and the barriers that are reported by seniors themselves. Importantly, the next section discusses the perspectives from OC Transpo operators and managers who are *inside* the transportation field and seniors and seniors' service providers whose perspectives come from *outside*.

### **Perspectives from Inside and Outside Transportation Planning**

When comparing the perspectives of those inside and outside the transportation field, it is evident that working alongside seniors can influence one's outlook on issues that are experienced by seniors. Without contact between groups, a homogenous or stereotypical view of seniors can be developed (Aberson & Haag, 2007). Additionally, it is apparent that bias from one's own background can influence understanding of the transportation issues that are experienced by diverse seniors. It is this understanding of seniors' perspectives that will allow transportation to be tailored towards seniors' needs. The ability to engage in perspective-taking is especially important considering that this

analysis reveals that seniors, seniors' service providers, and bus operators recognize the relationship between transport and social disadvantages, yet most OC Transpo managers did not make the same connections.

OC Transpo managers tended to focus on physical accessibility for older adults with disabilities, as well as the cost of fares and assisting seniors to find information about transportation services. All six managers seemed to understand their role in creating a transportation system that was inclusive of seniors with different mobility needs, disabilities, and incomes, but most managers did not make the connection between access to transportation and access to social networks, goods, and services.

However, it appeared that all groups interviewed (including OC Transpo managers) understood the importance of inclusion for seniors on transportation and acknowledged that seniors have different barriers to accessing transportation compared to younger people. In many cases, seniors, seniors' service providers, and bus operators recognized that for seniors to remain connected to their community through activities and social networking opportunities, transportation needed to be inclusive of all seniors. They seemed to understand the meaning of transportation for seniors and how it contributed to their independence and connectivity to others. Both seniors' service providers and bus operators also discussed their roles in facilitating a link between transportation and access to social opportunities, events, and activities, in addition to accessing medical appointments and shopping for groceries.

Most OC Transpo managers mentioned that their work was guided by the *Equity and Inclusion Lens Handbook*, which acknowledges both physical and social access to

transportation. The managers discussed initiatives that revealed promising practices as well as barriers to transportation for groups of seniors with low income, mobility issues, disabilities, and cognitive declines; however, they often needed to be prompted to consider culturally, ethnically, and linguistically diverse seniors. For example, some managers tended to overlook the importance of no-charge days or reduced fares for seniors to remain connected to their community. Only the two managers who regularly interacted with seniors seemed to understand this connection. One OC Transpo manager acknowledged that transportation is very important to seniors' independence and when it is taken away or when barriers are not resolved, seniors are left without ways of getting to appointments, activities, and social events. This particular manager also stated that management "*[spends] more energy and time on nitpicking, and the nitpicking [about following the rules] never even resolves anything.*" However, this attitude towards solving problems can significantly impact "*customers who need day to day help.*"

Although many managers discussed their use of the *Equity and Inclusion Lens Handbook* in their various roles, it does not appear that all managers apply this lens in practice. Managers tended to focus on physical accessibility, such as infrastructure and the built environment, unless they interacted with seniors. Thus, this equity and inclusion lens might not be completely translated into practice, even with good intentions to use it as guidance for transportation decision-making.

### **Contact and Perspective-Taking**

In line with much previous social psychological research, contact between groups (in this case age groups) seemed to encourage perspective-taking for seniors' service

providers and those inside the field of transportation (Aberson & Hagg, 2007; Cadieux, Chasteen, & Packer, 2019; Pettigrew & Tropp, 2008). Such contact also seemed to reduce the likelihood of endorsing and basing decisions on stereotypes about seniors (Cadieux et al., 2019; Pettigrew & Tropp, 2008), such as seeing seniors as a homogeneous group. Seniors, seniors' service providers, and bus operators tended to discuss similar barriers, challenges, and problems with transportation for seniors. The perspectives from seniors' service providers were most in line with seniors' opinions, followed by the bus operators. In contrast, transportation managers' perspectives were the most distinct from those of seniors.

The overlap between seniors' perspectives and other perspectives seemed to depend on the amount of interaction and contact that an individual had with seniors. Seniors' service managers are often hired from more frontline positions; they may thus understand seniors' perspectives best because they have worked closely with them for significant periods of time. Managers in the transportation field, on the other hand, do not typically get hired from frontline positions (e.g., bus operator positions), perhaps explaining the apparent disconnect between their perspectives and those of seniors. Most of the managers mentioned broad, systematic issues that had the potential to affect seniors; however, their perspectives did not tend to reflect how the barriers were experienced by seniors unless they had interacted with seniors on a regular basis. For example, the two transportation managers who were in contact with seniors mentioned challenges, barriers, and problems as well as facilitators and promising practices that

were more aligned with those raised by seniors, seniors' service providers, and bus operators compared to the four managers who had little to no contact with seniors.

Given that all six managers who were interviewed were white, in their 30s-50s, and mostly male, and four of the six managers reported very little contact with seniors, they might not have considered the perspectives of such diverse seniors due to inherent biases stemming from their own backgrounds and amount of contact (Dasgupta, 2004; Cundiff, Nadler, & Swan, 2009; Aberson & Hagg, 2007). Seniors are not a homogenous group; they are diverse in their backgrounds and abilities, but this was not reflected in the interviews with all managers. For example, in discussions of surveys about the public's opinion on transportation services, ambassadors at the new O-Train stations, and materials handed out about the new O-Train line, managers were asked about how seniors who spoke other languages were considered. Some managers responded that they were only required to hold roundtables or prepare surveys and materials in English and French and, although they had not thought about how they included seniors from different language backgrounds, they were open to suggestions about ways to include all seniors in their surveys.

Additionally, a few managers made assumptions about seniors' use and fear of technology—either that seniors were intimidated by online services or that most seniors do not know how to use technology. Two managers thought that seniors might feel uncomfortable having their PRESTO card linked to their bank account and assumed that this was due to a fear or distrust of technology; however, some seniors in our study reported that they simply wanted to be able to track the balance on their PRESTO card.

The larger problem for seniors was finding information about PRESTO cards and fares that was available in their own language.

In contrast to the transportation managers, seniors' service providers had contact with seniors and they were also diverse in terms of languages spoken, ethnocultural background, gender, Indigeneity, health status, and age. Their discussion of barriers to transportation involved recognition of the inequities in transportation access for seniors in terms of culture, language, mobility status, cognitive ability, income, and gender. Additionally, although informal discussions were only conducted with a small number of bus operator who were all white, men, and in their 30s-50s, they nonetheless discussed problems due to mobility, low income, and language barriers, perhaps because they were faced with seniors having those challenges on a daily basis.

When managers did not have contact with seniors, they did not recognize the impact their jobs have on seniors – that is, they are not seeing how their jobs have impacted people “on the ground”. This finding is relevant to policy development; the process of social exclusion is situated within social norms and practices, economic and political structures, and governance and decision-making frameworks, as shown in Figure 5 (Lucas, 2012). Within society, seniors who are socially disadvantaged are part of groups that are systematically excluded (Lucas, 2012). In the case of transportation policy, governed by the City of Ottawa and OC Transpo with influence from the Government of Ontario, current values and priorities are also systematically excluding groups of seniors (Lucas, 2012). In this regard, policymakers are the ones in charge of changes to the transportation system, rather than those who are impacted by these

changes, thus making it imperative that those policymakers consider the experiences and knowledge of those who are impacted by transportation changes when making policy decisions (Lucas, 2012).

### **Addressing Social Disadvantages with Promising Practices**

Despite the barriers, challenges, and problems associated with seniors' access to and use of public transportation, several promising practices and facilitators of access were also reported from all perspectives. Importantly, these promising practices and/or facilitators appeared to be conditions and initiatives that aimed to reduce transport poverty by addressing transportation inequalities that resulted from social disadvantages. The promising practices focused on low income, mobility issues and illness, and language barriers in relation to transportation (see Figure 4). However, interestingly, participants in our study did not mention promising practices that addressed gender equity.

#### **Promising Practices to Overcome Low Income**

Seniors and bus operators discussed how no-charge Wednesdays and reduced fares created opportunities for seniors to remain connected to others, regardless of their income. As discussed in Chapter 5, the busyness of Wednesdays on the buses compared to other days of the week is evidence of seniors' use of OC Transpo's services on the no-charge day. Although bus operators experienced a lot of stress on Wednesdays, they recognized the importance of no-charge days. One bus operator even mentioned that he "*would deal with the time pressure because [he] could recognize how important [Wednesdays are to seniors].*" Therefore, the no-charge day facilitated low-income

seniors' access to transportation that allowed them to attend activities and programs, run errands, and visit with friends and family.

Similarly, another promising practice that particularly helped seniors living with low income was reduced fares for seniors. Many seniors mentioned that they were able to afford to take the bus because of this reduced rate. They also identified seniors as a group with a fixed income, so they knew the importance of having days that they could take transportation free of charge or have reduced fares. Two managers discussed how discounted fares and the different fare options allow many seniors, including low income seniors, to be able to access transportation. One of the managers mentioned that seniors receive a “*25% discount on single rides and 62-63% discount on monthly passes*” in addition to the no-charge days. Another manager mentioned that the EquiPass was available to anyone, including seniors, with low income. The manager explained that this pass is “*guided around the LICO chart—the Low Income Cut Off chart... it’s a program that’s been [spearheaded] through social services and [it’s for helping another] set of customers that are in that vulnerable sector where [they] can’t necessarily afford transit.*”

In addition to the initiatives for reducing seniors' transportation costs put forth by OC Transpo, seniors' service providers themselves are part of the conditions that facilitate access to transportation. In this regard, seniors' participation in activities, programs, and events, is often enabled by seniors' service providers who adjust their activity schedules so that most activities occur on no-charge days. These organizations also often provide their own buses and vans or hire companies that provide transportation

services to the organization's activities and programs, which help to facilitate access to seniors' social networks. Two seniors' service providers mentioned that they tried to find seniors transportation to events that their organization is holding by either booking transportation services on their behalf or "*[loading a PRESTO] card with a certain amount of money that [the seniors] can use to take public transportation*" to the event. Indeed, these seniors' service providers are often aware that they are preventing people from being "*deprived of [participation] simply because they cannot travel to and from an event.*"

Taken together, no-charge days, reduced fares, and arrangements for low-cost transportation by seniors' service providers are all examples of ways that inequalities due to income can be reduced. No-charge days and fare discounts also reduce inequalities for low-income seniors, promoting access to public transportation. Seniors' service providers further aim to address these social disadvantages by working to address gaps in the public transportation system for low-income seniors. It is often the combination of these promising practices that facilitates access to transportation for many seniors living with low levels of income.

### **Promising Practices to Overcome Mobility Issues and Illness**

In addition to promising practices that helped to overcome low levels of income among seniors, several promising practices also emerged that facilitated transportation for seniors living with mobility issues and/or illness. Seniors, bus operators, and OC Transpo managers discussed accessibility features as a requirement on all OC Transpo buses, trains, and Para Transpo vans. Bus operators and seniors discussed the kneeling

function and ramps that can be folded out on every bus, and the entire OC Transpo system has cooperative seating. When asked about what facilitates their use of OC Transpo services, seniors noted that these accessibility features enable them to use the buses. In fact, for some seniors with mobility issues and illnesses, it was quite necessary that the buses have these features for them to use public transportation.

The bus operators themselves facilitate the use of OC Transpo services. Seniors in our study spoke of how the bus operators accommodated their mobility needs and how they were kind and respectful towards seniors. Similarly, some previous research has reported that seniors considered bus operator friendliness and helpfulness as a priority for an age-friendly bus system (Broome et al., 2013). Many seniors in our Ottawa sample shared examples of when bus operators gave them extra time to get on the bus and take a seat. In an informal discussion with one senior who had just had knee surgery, he described a positive interaction with a bus operator where the operator was “*very patient and let him [take his time] to get on the bus and sit down before pulling away.*”

However, in other research (Broome et al., 2013), seniors reported that their satisfaction with the bus system was improved by friendly and helpful bus drivers, likewise our findings suggest that bus operators are a large part of facilitating transportation for seniors. Although it was a small sample of bus operators, there were examples of bus operators demonstrating age-awareness. The bus operators did not directly state this, but they discussed evidence that supports this claim. For example, one operator mentioned:

*[He] personally takes it upon himself to mentor newer bus drivers and help them to learn patience when dealing with older adults, on Wednesdays specifically. [He teaches] them [to] give [seniors] more time and to not stress about the timing of the buses... [their job] is about the people getting to where they need to be and being courteous to them and their needs.*

These bus operators explained that they care about their customers having a pleasant experience and want to help them in any way possible. They recognize the importance of being courteous to older adults who might need more time to board the bus due to mobility issues. Two of the bus operators also noted that they hoped more bus operators would have respect and patience for seniors. One bus operator specifically reiterated that they deserve respect and patience as they deal with increased mobility limitations.

A related promising practice that was discussed by bus operators and OC Transpo managers was the required accessibility training for bus operators. The training program is approved by the *Ministry of Transportation of Ontario* (MTO) to focus on safe driving skills, but it also teaches about accessibility, customer service, and equity and inclusion of seniors with disabilities and cognitive impairment. However, managers admitted that most bus operators' learning about accessibility and customer service is done on the job, without formal training. New operators are accompanied on the road by instructors and more experienced operators that act as mentors. OC Transpo managers and bus operators recognized the importance of the on-the-job training to be able to assist older adults with

accessibility needs, including being taught to use the kneeling feature on the buses and the ramp.

Several OC Transpo managers also mentioned promising practices such as the changes in accessibility on the bus system over time. One manager mentioned that OC Transpo's goal is for "*95% of households in Ottawa have a stop or station within 400 meters.*" Both conventional and Para Transpo have become more accessible over time; for example, Para Transpo vehicles originally had high floors with steps into the vehicle and lifts would be needed if someone could not use the stairs. In terms of cognitive accessibility, Para Transpo operators have also had sessions addressing dementia incorporated into their training.

Of course, Para Transpo operators receive more intensive training to help people with disabilities compared to standard bus operators. Para Transpo operators are not only trained to drop off and pick up customers, but they also follow procedures to assist customers with their mobility needs wherever they can. They also receive consistent refresher training, whereas conventional bus operators do not receive refreshers as often (although they can request more training). Moreover, Para Transpo assists with accessibility by allowing seniors to be temporarily eligible for the service in the winter months so that they can be picked up on their doorstep during weather conditions in which they may not be able to safely access conventional transit.

Several seniors in our study mentioned that the Para Transpo service itself is a promising practice, as some of them needed more assistance but would still like to use public transportation. Many seniors were "*grateful for the service*", even if they were

also able to use conventional buses. However, Para Transpo was viewed more positively by seniors who could not use other modes of transportation due to the need for a mobility device, wheelchair, and/or extra assistance due to another disability or illness. From the perspective of one senior who used Para Transpo, they stated:

*I'm just very happy that I have this opportunity. Some people [complain] that their transport is arriving too late. If there is a half hour delay, they become angry with the driver. I don't like this. We should just be happy for this opportunity.*

Thus, although many seniors and seniors' service providers stated that there were many issues with Para Transpo, they also recognised the importance of having this service as an accessible option for transportation.

Finally, despite the promising practices noted by OC Transpo managers and staff, seniors and seniors' service providers reported that alternative transportation programs often allow seniors to access social opportunities or run errands in the winter, when it is very difficult for many seniors with mobility issues, disabilities, and/or illnesses to use public transportation. One of the researchers had an informal discussion with a seniors' service provider about additional transportation in the winter:

*[The program staff] were saying that winter is a busier time for the grocery van, so what they've done in the winter to accommodate this is they add more routes to pick up seniors in different buildings, and they also rotate days. So they said that, for example, one group of seniors would be picked up one week for the grocery van, and then*

*the following week it would be a different group of seniors, so then it's every other week the same group goes, so they try to make it work and spread it out that way so that all the seniors can in fact take advantage of the service.*

Furthermore, there was a pilot project that hired taxis to carpool seniors with accessibility needs to seniors' day programs at a cultural centre. These were seniors who could not originally access cultural programs due to mobility issues and disabilities, but the centre saw a need for accessible transportation for this group of seniors and created a program to assist them. Thus, actions were taken by seniors' service providers to fill gaps in transportation for seniors with mobility issues, even beyond what OC Transpo could offer. However, seniors did not often mention alternative modes of transportation in terms of inequalities in mobility affecting their access to transportation, perhaps because public transportation systems have been working toward being more accessible, even if they are not perfect for all seniors with mobility needs.

From physical accessibility changes made to conventional bus services, accessibility training for bus operators, to alternative options for seniors' transportation, we can see that these initiatives are geared towards reducing inequalities in access to transportation due to mobility limitations, disability, and illness. Notably, whether seniors used conventional buses, Para Transpo services, or alternatives to public transportation, there were promising practices that supported seniors with mobility issues and illnesses. The aforementioned promising practices aim to help seniors with various

mobility levels to experience as few restrictions as possible when choosing which transportation services to use.

### **Promising Practices to Overcome Language Barriers**

The final theme observed with regard to promising practices aimed to assist seniors to overcome language barriers in order to access transportation services with minimal constraints. The seniors' service providers and the two OC Transpo managers who worked (more directly) with seniors mentioned several ways that they worked to facilitate transportation for linguistically diverse seniors. One of the most promising practices is the availability of grocery buses and vans to enable seniors to shop for food, especially when they find it difficult to use public transportation. The programs that seniors' service providers deliver often make it possible for older adults who speak languages other than English to shop for groceries, attend medical appointments, attend events or programs, and just generally maintain their independence. Additionally, travel training programs (designed and administered by OC Transpo to prepare groups of seniors to use the public transportation system) were organized so that linguistically diverse seniors could support each other.

The volunteers and staff at seniors' service organizations were the key to running the grocery or alternative transportation programs. Non-profit organizations often lack funding to be able to offer culturally appropriate staff and services (Stewart et al., 2011). Yet, the organizations we observed had prioritized culturally and linguistically appropriate alternatives to public transportation services even when funding is limited, demonstrating the importance of providing services that fill gaps in public transportation

services. Seniors' service providers worked to ensure that seniors had alternative transportation programs available in the language they were comfortable speaking. The volunteers and staff managing these programs also spoke languages other than English to be able to assist seniors in the language they spoke best. This way, they could also assist these seniors to read English labels at the grocery store and make decisions about what to buy. One of the seniors' service providers shared that these programs involve more than just transporting people to grocery stores:

*[It's] not just pay for the bus and all that; you've got to find some other people who are willing to help and support the group as well, because a lot of people need help as they're shopping. It's not as easy as bringing them here, kicking them off the bus, and saying, "Yeah, meet me back here in an hour." You've got to help them find things, interpret things, read things, make decisions.*

Seniors' service providers also spoke about how they worked hard because they recognize the importance of facilitating transportation for seniors. For example, a service provider at a cultural centre stated:

*[There] are a number of seniors who are unable to take OC Transpo, have difficulties in taking Para Transpo and therefore are in threat of social isolation so we have started a program called the Transportation Assistance Program where we have identified the seniors, made a roster of them and with some funding, ... arranged [a transportation service] which essentially is a shared taxi service*

*which enables them to attend our main religious functions and certain important sociocultural events.*

The seniors participating in these programs often recognized the importance of having staff and volunteers that spoke their language and described them as very empathetic and even like family to them. They felt a deeper connection with these staff, perhaps because they felt that their voices could be heard. One researcher spoke to seniors who were using the grocery bus program and noted:

*All of [the seniors] were extremely appreciative of the program and wanted to tell me how much they appreciate the program... they really wanted to get the point across that they appreciate the program and the staff, and I can really see how much they value the staff who are working with them. Many of the seniors [wanted to] hold the hands of the staff members... and you can see just how they interacted. There was a very warm feeling between them.*

The researchers also observed how much work is done by the staff and volunteers to benefit seniors. Seniors' service providers explained that they take the time to get to know seniors and went "above and beyond" to check in with them if they were missing from a program one week. Staff and volunteers also help these linguistically diverse seniors to fill out paperwork for Para Transpo, and to interpret other documents they receive in the mail, for example.

In addition to the alternative transportation programs with a focus on language diversity that were organized by seniors' service providers, "travel training" was

mentioned by three OC Transpo managers as a promising practice. Initially, when the PRESTO card fare system was first implemented, OC Transpo conducted outreach to seniors to teach them how to use the new PRESTO system. Additionally, when the new O-Train line was established, OC Transpo staff assisted groups of seniors with familiarization sessions to help them learn about the new LRT line. This travel training has been developed over several years and included sessions to teach seniors' service providers the tools to help seniors learn to navigate the transit system as well.

The travel training also involved seniors helping other seniors to learn to navigate the system. Outreach staff from OC Transpo were also joined by interpreters in some cases. However, an unintended result of the OC Transpo travel training program was that seniors who understood English/French helped seniors who experience language barriers and could not thoroughly understand the travel-training instructors. Other research has promoted travel training to increase seniors' confidence using public transportation (Bittner et al., 2011); however, seniors in previous studies also received travel training in their desired language.

In sum, seniors who do not fluently speak English or French can experience language barriers that interact with transit disadvantage to result in transport poverty. However, the promising practices that assist with developing provisions to diminish transport poverty tend to focus on addressing social disadvantages instead of solely transport disadvantages. Low-income seniors, seniors with mobility challenges, and seniors with language barriers continue to experience problems with using the public transportation system (as discussed in Chapter 5), but these promising practices aim to

fill gaps in the transportation system for these groups. The seniors' service providers seem to understand that there are services that are missing to serve these seniors, as evidenced by the initiatives they create or in their inclusive behaviours. Furthermore, these promising practices also appear to promote social inclusion through ensuring access to different forms of transportation for socially disadvantaged groups of seniors.

## **Chapter 7: Overarching Themes & Conclusions**

Two overarching themes that emerged from this study's findings included social exclusion and stress. Social exclusion disproportionately affects seniors, but it especially impacts seniors who are diverse in terms of gender, ethnicity, culture, income, education, and location (Lui, Warburton, Winterton, & Bartlett, 2011; Warburton et al., 2013). Social exclusion can also result from structures in society that socially isolate individuals (Barry, 2002); therefore, access to transportation is considered to be a risk factor for social exclusion (Barnes et al., 2006; Engels & Liu, 2011; Levitas et al., 2007; Serrat et al., 2018; Shergold & Parkhurst, 2012). However, to promote social inclusion, both transport and social disadvantages need to be considered as they can—separately and together—influence access to social networks, goods, and services (Lucas, 2012; Lucas et al., 2016). Moreover, the social exclusion resulting from difficulty accessing social networks, goods, services, and opportunities for participation in decision-making can ultimately culminate in chronic stress for seniors and, notably, also for the service providers who aim to alleviate their exclusion.

### **Inaccessibility of Transportation and Social Exclusion**

Accessible, shared and/or public transportation is a way for seniors to access social opportunities, events, and activities, as well as more practical activities such as medical appointments and shopping for groceries. This connection between social opportunities and transportation has been noted in previous research (Levasseur et al., 2015; Curl et al., 2013; Kim, 2011); older adults' participation in social activities and volunteering is often dependent on access to transportation. In our study, one researcher, in an informal discussion with a senior, noted the connection between social engagement and transportation for seniors:

*When I asked her about aging well she said that for her staying active and engaged with the community was a key aspect of it. As well she's maintaining good health... When I asked her about what it might be for other people she said certainly transportation is a key issue. You know, to get out and about.*

It became apparent that even the grocery bus, which has a more practical use, had fostered social connections as seniors shopped together and socialized. One senior explained that they were feeling very isolated before joining the grocery bus program, but that the program had made her feel socially connected:

*Never having been through this before. And never having been disabled before; right? So, it took care of a crisis for me... there's a whole gamut of things that this bus remediated for me. And it was especially nice because these other people are from the building and I*

*didn't know anybody. Because I had just moved when my daughter found out she had to move. And I had moved because I became disabled. And so, I am now connected with... women and men inside of this building and, you know, we've exchanged telephone numbers and we're here to help each other.*

Whether access to transportation for seniors is facilitated by public or alternative transportation services, a common theme throughout many of our discussions was how access to transportation enabled access to social opportunities. The no-charge day on OC Transpo also facilitates social connectivity, and many seniors chose to use these days to be involved in social activities. As an example, one senior meets up with friends every Wednesday, when they can all take the bus for free. Another senior mentioned to a researcher that:

*[In] terms of aging well in Ottawa, for her it was about being able to shop with confidence and comfort, being able to meet people. Transportation was a key part of that. Maintaining or keeping your friendships intact, or even better, making friendships.*

These comments from both seniors and seniors' service providers emphasize how necessary transportation is for many seniors to remain connected to these programs.

The OC Transpo managers discussed attitude surveys and roundtables that collected data from seniors. While some managers mentioned that these evaluations would start again, they did not indicate that it might be an issue that the surveys or roundtables were stopped or not conducted frequently. Meanwhile, seniors wanted to be

involved in planning and decision-making about transportation, especially decisions that were made by OC Transpo about changes to transportation. The seniors included in this study, along with seniors' service providers and bus operators, shared problems that involved both social disadvantages and transport disadvantages, but these issues were not being communicated to OC Transpo policymakers due to the lack of OC Transpo-led data collection initiatives.

As noted in previous research, older adults are often at risk for experiencing shrinking social networks and a lack of meaningful relationships with others due to events experienced during the aging process (e.g., older adults often experience retirement and/or the loss of friends and family), which can ultimately lead to social exclusion and/or social isolation (Emlet & Mocerri, 2012; Nicholson, 2012; Warburton et al., 2013). However, the above examples have suggested that groups of seniors (who are diverse in terms of gender, ethnicity, culture, mobility, health, and income) could experience greater disparities in their access to social networks, goods, and services due to the combination of access to transportation and social disadvantages.

Overall, the message to take away here is that a lack access to transportation is a risk factor for social exclusion, since exclusion from transportation can result in barriers to accessing health services, social activities, and social networks (Engels & Liu, 2011; Lamanna et al., 2019; Serrat et al., 2018; Walsh et al., 2017). Moreover, seniors who are linguistically and culturally diverse, Indigenous, female, or living with low income and/or disabilities face additional barriers to accessing public transportation. The combination of their social disadvantage and transport disadvantage appear to influence

both social connectivity and physical access to goods and services. Furthermore, when seniors cannot use public transportation in a way that allows them to remain connected to their social networks, another outcome that often results is stress.

### **Inaccessibility of Transportation and Stress**

Stress was the second overarching theme that ran through all perspectives in the present study, which—like social exclusion—also appeared to be linked to interactions among transport disadvantage, social disadvantage, and transport poverty. For seniors, stress was experienced when social disadvantages complicated their access to public transportation. Seniors' service providers experienced stress upon needing to organize additional transportation options for seniors with diverse language, culture, and health/mobility needs. Bus operators felt stressed about providing transportation suited to seniors with unique needs. And finally, OC Transpo managers who regularly interacted with seniors were stressed and frustrated when they were unable to help seniors with mobility challenges due to the rules and regulations that often accompanied the organization's decision-making processes for change.

Seniors tended to experience stress when bus routes or numbers changed, when there was ambiguity about cooperative seating, and when service changes were not communicated clearly to them. However, for groups of seniors who experienced both transport and social disadvantages, stress was especially apparent. Many seniors mentioned that they were stressed when attempting to phone OC Tranpo for information on routes or phoning to book appointments for Para Transpo, especially if they experienced language barriers. In addition, seniors were stressed when they were not

picked up by Para Transpo on time and were concerned about leaving events on time to make it to their Para Transpo pick up time.

Meanwhile, seniors who used alternative methods of transportation (e.g., grocery buses, rented vans) seemed to experience less stress, especially when these methods of transportation suited their linguistic or mobility needs. However, if seniors could not access those alternative methods of transportation, they reported feeling stressed. For example, when seniors were not within the boundaries that the grocery buses served, as one seniors' service provider noted, "*...seniors can get quite upset when they can't access the services because of certain boundaries, because all they want to do is find services that will help them, but then they're told they can't.*"

The stress reported by seniors seemed to stem from being unable to use transportation services to access grocery stores or doctor's offices, but also to maintain their social needs. Indeed, many seniors wanted to remain connected to their community, participate in activities, and socialize with others, but the lack of transportation options could hinder their ability to do so. Thus, just as the social exclusion experienced by seniors might result in additional stress (see Figure 5), the stress of having to use transportation that does not take social disadvantages into account could result in seniors being excluded or isolated from social opportunities by factors that are beyond their control.

Seniors' service providers also tended to experience a great deal of stress while working to fill the gaps in transportation for older adults. As mentioned previously, the programs they independently organized fulfilled transportation needs for seniors who

could not access transportation due to social barriers (e.g., language barriers, disability, cognitive decline). This often resulted in the creation of alternative options for seniors or driving seniors to and from activities themselves. Additionally, problems with Para Transpo put additional stress on seniors' service providers and the OC Transpo managers who assisted seniors. Many were concerned about seniors who were not eligible for Para Transpo but could not easily take other forms of transportation either.

Seniors' service providers also discussed the stress surrounding precarious funding and work that accompanies the provision of transportation alternatives. Funding often came from allocating a portion of the organization's revenue from seniors' memberships to transportation services. Otherwise, an organization applied for grants or similar funding to support their transportation programs. The budget to run the program, rent/hire vans and/or buses, and pay employees was dependent on these sources. Since budgets varied year-to-year, seniors' service providers sometimes cancelled some transportation services and/or had a limited number of people they could support in the program. A seniors' service provider explained that they had to cancel a program due to funding:

*We did have a Wal-Mart trip too, in the winter. Unfortunately we didn't have the funding to keep it going, but hopefully, we will again. We applied for more opportunities for funding because that was an area too, that the seniors identified, was the grocery stores were taking them to -- or were great for things like food, but things like*

*toilet paper or light bulbs, again, in the downtown area, we don't have a lot of options for getting those sorts of things.*

Likewise, there was often interest in expanding existing programs, but the size of any program is limited by funding. Challenges with expanding these programs also arise due to the limited availability of volunteers. Seniors' service providers often performed multiple roles in order to make up for fewer volunteers or staff. As this seniors' service provider notes, they "*always struggle to find volunteers and to meet [seniors'] needs*", but "*[it's] a tough city to get around in*" so that is one of "*the reasons [why their] transportation program is so big.*" Seniors' service providers in other Canadian cities have also reflected this sentiment, often avoiding advertising their programs because they could not commit to serving the number of seniors who would apply (Edmonton Seniors Coordinating Council, 2011).

Finally, another challenge that was exacerbated by constrained funding and few volunteers is the catchment area restrictions that some transportation programs serve. Seniors' service providers recognized that some seniors might miss out on opportunities to participate in programs if they are not within the same area as the program is offered. Many seniors' service providers put pressure on themselves to serve as many seniors as possible, adding additional stress to their jobs when they need to turn people away. One researcher summarized this issue after talking with a seniors' service providers, who stated:

*Around the topic of catchment areas, the staff mentioned how this can be a barrier in providing services to some of the seniors who call in*

*and seek support, because, given their funding and the way in which the organization operates, they're only allowed to offer services to seniors who live in their specific boundaries and catchment area.*

Bus operators were most vocal about the stress they experienced on no-charge Wednesdays, often noting that their workload changed on Wednesdays compared to other days of the week. Bus operators felt that they were under a great deal of time pressure on Wednesdays since more seniors taking the bus meant that they needed to take more time to kneel the bus, deploy the ramp, and wait for seniors to board the bus and be seated. As one of the researchers explained in their field notes, *“the [bus] schedule is not adapted to reflect that reality.”* Some bus operators were additionally stressed when they could not accommodate older adults with wheelchairs due to crowding on no-charge days. Also, beyond stress from the busyness of no-charge days, bus operators were concerned when they could not help communicate bus route changes to seniors due to language barriers. Combined with their recognition that seniors use the bus to remain connected to others, go shopping, or visit a doctor, the bus operators realized how their inability to stay on-time, meet the various mobility needs of seniors, or provide information to all customers would affect seniors using the bus.

All bus operators interviewed in our study attributed this added time pressure to the elimination of no-charge days on Monday and Friday afternoons, leaving Wednesdays as the only day for seniors to ride for free. Additionally, when their route was running behind schedule, they encountered anger and frustration from their

customers. In response, two of the bus operators shared that they were very nervous about operating the bus on Wednesdays. One operator stated that he:

*Sacrificed his own breaks in order to stay on time and... that this was because he felt pressure from the public and from customers who were riding the bus to stay on time because if he wasn't on time then he would have to deal with the negativity and the anger that [results from] being late.*

In contrast, however, the other bus operator did not appear to be concerned about the added time pressure. He noted that although he felt the pressure, he was not worried because he was “*used to it by now*” and he would “*be paid either way so it didn't really concern him anymore.*”

Although the OC Transpo managers recognized that the bus operators’ role involved a lot of stress, they did not tend to mention the additional stress the bus operators would experience on Wednesdays. As of July 1<sup>st</sup>, 2019, Sundays have been included as an additional no-charge day for seniors; however, some OC Transpo managers, seniors’ service providers, and seniors revealed the futility of having Sundays as an added no-charge day— seniors cannot use Sundays to travel to medical appointments or activities because many services are closed on the weekends. Even though seniors could potentially use Sundays to commute to worship services or to visit family and friends, one OC Transpo manager argued that many seniors would not make use of this no-charge day to do so because they often already have transportation through their church or through friends or family. Therefore, the addition of Sundays as a no-

charge day did little to alleviate stress for bus operators, seniors, or seniors' service providers.

Finally, the OC Transpo managers who regularly interacted with seniors tended to feel stressed and frustrated about being unable to help seniors (in contrast to the managers who did not interact with seniors on a regular basis, who did not appear to exhibit that same level of stress). One manager shared that they received phone calls from seniors hoping to get answers about improvements to Para Transpo or fares, but this manager could not solve their problems without changes being made to the overall system. In fact, this particular manager became visibly frustrated during our interview and was almost brought to tears while relaying the amount of red tape that they experience when trying to create unique solutions to seniors' transportation problems, noting that if a solution did not follow standard procedure then it was usually rejected by upper management.

### **Intersections Among Social Exclusion, Stress & Transportation Access**

Overall, social exclusion and stress are considered to be important determinants of health; declines in social resources, meaningful relationships, and participation in society that accompany social exclusion can contribute to increased stress and reduced health and well-being (Barry, 2002; Haslam, O'Brien, Jetten, Vormedal, & Penna, 2005; Raphael, 2016; Saito et al., 2012; Serrat et al., 2018; Van Regenmortel et al., 2016; Warburton et al., 2013). Social exclusion and social isolation are often prevalent issues among older adults due to shrinking social networks and health declines (Emlet & Moceri, 2012; Nicholson, 2012; Nicholson, 2009). The findings from this study reveal

how both social exclusion and stress can be exacerbated if other social determinants of health such as disability and mobility, gender, income, and language intersect with access to transportation. Indeed, the connections between transport and social disadvantage reduces many seniors' abilities to access social networks, goods, and services using existing transportation services (Lucas et al., 2016), which is often linked to additional and chronic stress (Beekman, Stock, & Marcus, 2016; Blackhart, Eckel, & Tice, 2007; Pfundmair et al., 2015; Wang, Braun & Enck, 2017). For seniors' service providers, bus operators, and the OC Transpo managers who regularly interacted with seniors, stress seemed to be correlated with recognition of the importance of transportation in facilitating social inclusion.

The most socially disadvantaged groups were also the most at risk for transportation-related social exclusion, isolation, and the resulting chronic stress. As the City of Ottawa continues to diversify and the population continues to age, seniors who are already at risk for social exclusion and social isolation due to social disadvantages could be further excluded from transportation. When seniors' voices are heard by seniors' service providers, promising practices are put in place to reduce transportation inequities by addressing issues experienced by seniors with social disadvantages. Through the many conversations with diverse groups of seniors in Ottawa (i.e., participants from different ethnocultural backgrounds who spoke different languages, had varying levels of mobility and cognitive ability, and were different genders), it is evident that there is a discrepancy between the public transportation initiatives that are provided to them and the needs that they express.

## **Caveats and Conclusions**

Although this study contributes in many ways to the existing research literature, there are some limitations that should be noted. First, this study involved a small sample size of transportation providers (bus operators and OC Transpo managers) in comparison to the sample of seniors and seniors' service providers; thus, generalizations to the entire transportation field in Ottawa (and elsewhere) should be made cautiously. Second, this study discusses the social determinants of health for seniors, but not for seniors' service providers, bus operators, and managers. Future research might consider the impact of employment and working conditions and stress on people providing services to seniors. Third, data collection was conducted in June 2019, before the added barriers of winter weather or the global pandemic of COVID-19 in 2020 complicated the lives of seniors (and everyone) and altered transportation plans significantly. Finally, this research was conducted before the O-Train Line 1 opened; thus, the experiences of transportation from seniors, seniors' service providers, and bus operators and managers were shared before this service was available, making it impossible to comment on any problems or promising features surrounding this new transportation service.

Despite these limitations, this study also has several strengths. Due to its multi-perspective approach, comparisons could be made within and across each of the four groups (i.e., seniors, seniors' service providers, bus operators, and transportation managers), as well as comparisons between the groups inside and outside the transportation field. Additionally, as part of a larger, international project, this study benefitted from working with a large team of interdisciplinary researchers from other

cities and countries. Thus, small teams of researchers with varying backgrounds were grouped such that some researchers were familiar with Ottawa while other researchers had not yet visited the site, but brought fresh perspectives and insights from their own cities and previous research (Baines & Cunningham, 2013; Armstrong & Lowndes, 2018). Relatedly, the use of rapid ethnography as a methodology for this study is also a strength. Involvement of traditional ethnographic methods in combination with short-term field visits with international, interdisciplinary researchers can lead to a focused and collaborative understanding of individuals and their interactions with their environment (Baines & Cunningham, 2013). Finally, with the cooperation of professionals from the organizations that were visited, researchers were able to gain access to key practices to observe, and personnel to interview. The relationships between researchers and organizations made it possible for seniors to have a platform to share their expert, first-hand transportation experiences with researchers.

The implications of this study extend beyond reporting seniors' needs to transportation managers in decision-making positions and recommending changes to be made to transportation initiatives (Engels & Liu, 2013; Alsnih & Hensher, 2003). To answer my first research question (i.e., "What does accessible transportation mean to older adults in Ottawa, considering their diverse backgrounds, and varying levels of mobility and health?"), for diverse seniors, access to transportation meant that they were able to access meaningful social opportunities in ways that respect their language, mobility levels, and other factors that reflect their social location and identities.

To answer my second research question (i.e., “Do older adults in Ottawa experience transport disadvantage and social disadvantage simultaneously? How is transportation-related social exclusion experienced by groups of older adults that are most at risk for transport poverty?”), the findings from Ottawa reveal that there are many problems that prevent some seniors from accessing transportation. This appears to be especially true for seniors who are living with mobility challenges, language barriers, and/or are women (especially those who do not drive)—unique communities of seniors within our community—thus demonstrating the connections to transport poverty. Indeed, as Figure 5 illustrates, it is the overlap between these types of disadvantages that can produce transport poverty. Building on previous research, I suggest that by taking the perspective of seniors and ensuring that their voices are heard, transportation initiatives can be better designed to suit the needs of diverse seniors. This is especially important given that the transportation sector tends to systematically exclude specific groups from access to transportation (Lucas, 2012; Lucas et al., 2016).

Transportation, social inclusion, and social participation are defining factors of the AFC framework (WHO, 2007). AFCs suggest ways in which transportation can be improved to benefit seniors and how social inclusion/participation can be fostered (WHO, 2007). However, when addressing these factors in practice, there is an artificial divide between social and physical factors: transportation is most often considered to be a solely physical component, and social inclusion and respect as well as social participation are considered to be purely social components (Scharlach, 2012; Syed et al., 2017). I suggest here that this divide is perpetuated when transportation policy (e.g., the

*Older Adult Plan* and the TMP) is translated into practice using the AFC framework (City of Ottawa, 2015b; City of Ottawa, 2013; City of Ottawa, 2003). To answer my third research question (i.e., “Do seniors’ service providers and transportation service providers address seniors’ needs when developing transportation initiatives?”), I propose that policies with a focus on physical access might stem from a lack of contact between seniors and decision-makers. In contrast, when seniors’ voices are heard by seniors’ service providers, promising practices are put in place to reduce the problems that are related to social access. These promising practices are mostly initiated by seniors’ service providers who generally understand the perspectives of seniors and work to address their needs.

The divide between social and physical AFC factors needs to be resolved; through this thesis, I have built on previous research that provides evidence for how social and transport disadvantage are not only linked but can also culminate in transport poverty and simultaneously influence seniors’ social exclusion and stress. Older adults are a heterogeneous group; some seniors will benefit from approaches to transportation that only consider the physical, but others will not. By taking a “one-size-fits-all” approach to designing accessible transportation for seniors, those with social disadvantages will continue to experience physical barriers to accessing transportation, as well as the social consequences.

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