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## Preparing Communities for the Golden Years: Approaches for Developing Age-Friendly Communities for Seniors

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Preparing Communities for the Golden Years:  
Approaches for Developing Age-Friendly Communities for Seniors

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## **ABSTRACT**

The heterogeneous nature of aging has led policymakers to reconsider how seniors are impacted by localized decision-making and implementation efforts (Remillard-Boilard, 2018). Forecasted by the World Health Organization (WHO), the population of seniors (60+) is expected to reach over two billion worldwide, surpassing the number of children being born across the world for the first time in human history (United Nations, 2006). To better address the local challenges faced by the aging population, WHO devised an Age-Friendly Communities (AFC) framework to guide urban communities into redesigning policy and intervention models to better reflect the needs of seniors while also allowing them to independently ‘age in place.’ Shifting social, health, and economic barriers towards implementing age-friendly policies help sustain, expand, and champion aging-related policy initiatives. Municipalities are well-equipped to address aging issues, given the ease in access this particular level of government has to its communities. The resiliency and success of age-friendly communities is a product of collaboration between various levels of government and community stakeholders. Prioritizing the need for neighborhood-level initiatives requires innovation, harnessing knowledge, and partnerships with various community actors to demonstrate the impact of successful implementation. Devising innovative solutions works best through collaboration. Recognizing how aging, and urbanization work in tandem requires an integrative decision-making model to drive positive outcomes for effectively developing age-friendly communities for seniors.

## INTRODUCTION

The dawn of the 21<sup>st</sup> century has inspired significant changes to the social, economic, and health of communities due to population aging. As the world encounters a monumental demographic shift forecasted by the doubling of the senior (60+) population and recognizes their impact to community life, significant pressures are put on policymakers to address this demographic's needs. Local government plays a unique role in supporting the needs of the seniors within its communities. It allows them to live and lead healthy, and independent lives through the adaption and implementation of age-friendly policies and community-level intervention. Many localities worldwide have already begun to redesign policies to become more age-friendly to better respond to the needs of the imminently growing seniors' population. The United Nation reports, "the proportion of those 60 years and over in the global north increased from 12 percent in 1950 to 23 percent in 2013 and is expected to reach 32 percent by 2050" (United Nations, 2014). Not to mention, over half of the world's total population, 54 percent resides in urbanized environments and is subject to increase by 67 percent by 2050 (United Nations, 2014).

The intersectionality between population aging and urbanization has rendered significance in public policy as more seniors live independently and longer within their communities. At the most basic level aging in place is about proximity. Globally, older persons spend more time within their home and immediate environments (Wahl et al., 2005). As a result, their daily lives are entrenched with their local communities, thereby requiring policymakers to enhance congruency for seniors and their localities (Walsh et al., 2015). AFC models are built upon environmental gerontological theories that demonstrate how living environments impact older adults (Lawton & Nahemow, 1973). Coined by Lawton and Nahemow, the Ecological

Theory of Aging demonstrates how environments impact specific demographics. For policymakers, designing communities for human behaviour to fulfill needs continues to be a rising concern as such needs and capabilities continue to evolve. The impact created by the environment, by the community, and through technology establishes a “new” environment to support aging in place (Wahl et al., 2012). The connection between aging and the environment showcases how environmental inputs positively impact cognitive and affective functioning for aging persons, and influences seniors’ quality of life within localities. By incorporating the Ecological Theory of Aging, the focus of this research will be placed on three factors: Environmental factors, the demand character, adaptive behavior, and affective response. Environmental pressures refer to “aspects of the environment that are presumed to have some motivating force for the individual whether they are aware of them or not” (Nahemow & Lawton, 1973). Demand character is defined as the “total magnitude of the environment’s effect on the individual, and affective response is the “self-evaluated quality” to illustrate overall experience” (Nahemow & Lawton, 1973). By framing the context of this research from an ecological perspective, this paper aims to explicitly showcase the interplay between how the individual and the environment shapes age-friendly policy and intervention models. These indicators are critical to consider through the implementation of an AFC to showcase how senior-focused interventions create a sense of community belongingness and resiliency for the aging population.

Through major demographic shifts, there has been increased pressure put on localities to spearhead innovative and collaborative efforts to redesign policies to support quality of life, accessibility, inclusion and the safety and well-being of seniors. Typically, innovative policy incorporates diffusion to drive innovation through collaboration, implementation, and

communication. As diffusion literature suggests, championing innovation requires organizational change to support innovation and the innovating agent's ability to leverage its network to communicate the process of diffusion over time (Horak, 2020). As diffusion theory is complex, using artificial intelligence and technology as the agents of change to support innovative policies can drive effective age-friendly policy designs for local agents. Developing innovative and cost-effective methods to allow seniors to age in place has become problematic for municipalities given the inconsistency in funding available across communities. It is anticipated that by 2030 there will be 9.5 million seniors across Canada, making up 23 percent of the total population (Statistics Canada, 2019). The limitations imposed on spearheading geriatric health initiatives with minimal funding and capacity has led to inconsistency, inaccessibility, and unaffordability of necessary services across urbanized communities. Enhancing policy and intervention models at the local level focuses on prevention and promotes community resiliency, as well as a sense of belongingness among seniors when done in collaboration with various community actors and partners. Fostering inclusive environments for seniors in "community-based decisions, health promotion and better access to health services including preventative and mental health care" creates opportunities for these individuals to age in place (Jeste, et. al., 2016). The development of policies, accessible services and structures related to the psychological, physical, and social environments are designed to enable seniors to live independently, securely and in good health.

Therefore, the following research asserts how urban communities can develop effective age-friendly policies by integrating: multi-level governance, community collaboration and technology into their policy design framework. The premise of this assertion is built upon the role of local government entities as 'agents of change' driving community cataclysm for seniors within their localities. This paper will incorporate will provide a comprehensive background of

aging, demographic trends and contextualize the historical shift towards aging policy intervention captured through the literature review. The literature will highlight key concepts including the AFC design to strengthen the research aim and incorporates a wide array of information in support of community collaboration, intergovernmental cohesion, and technological adaptation to effectively strengthen AFC policy designs. This model will refer to three Canadian communities (Montreal, Quebec, Langley, British Columbia and The Greater Sudbury Area, Ontario) that are innovative policy leaders in AFC policy development. These communities have spearheaded change by fostering inclusive environments for their community seniors by devising systems that encourage “community-based decisions, health promotion, and better access to health services including preventative and mental health care” to age in place (Jeste, et al., 2016). The development of policies, accessible services and structures related to the psychological, physical, and social environments are designed to enable seniors to live independently, securely and in good health. To avoid a community collapse, it is critical to devise AFC policies through collaboration with various levels of governments and community actors. By incorporating a hybrid ‘top-down’ and ‘bottom-up’ approach to decision-making and policy design produces a comprehensive understanding of the realities seniors face through integration.

## **Methodology**

To illustrate the importance of integrating AFCs into local policy planning requires an inductive approach to the research design. This approach is used to address the intersection of stakeholder engagement and policy design to showcase patterns and relationships. The inductive approach used to support an effective AFC policy design requires communities to develop resiliency through experience. The heterogeneity factor of this research is centered on aging and

is observed among all communities. Fostering meaningful relationships between different levels of governments, community organizations, and interest groups supports the validity and authenticity of effective policy and intervention recommendations. Qualitative data has been used to support the research ontology and has been collected from Statistics Canada. Academic literature and policy papers collected from the Association of Municipalities of Ontario have been consulted throughout this research. To date, funding, innovation, capacity, and resources continues to be stumbling block for local government entities to support effective social and health policy initiatives. The research collected from the supporting literature reinforces several challenges associated with the “grey tsunami” that is population aging, and how it influences the sustainability and effectiveness of community-building.

A multi-case comparison and longitudinal case study has been applied to observe the efforts derived from three Canadian communities deemed as AFC policy leaders. The research demonstrates how similar outcomes (the development of senior-focused communities heightened belongingness, empowerment, and resiliency) through AFC initiatives has taken shape. The use of trends analysis on demographic shifts and an increased dependency on social and health services has been the premise to drive change among the policy leading communities. Employing a case study analysis is an appropriate method to support the “why” and “how” elements of the research and has proven to be an effective measurement to highlight the impacts of new research areas (Denzin & Lincoln, 2000). Recognizing there is a gap in the existing research, this paper reinforces the concepts and provides timely and probable recommendations using literature and the case studies to support the overall research aim.

Additionally, as the recommendations provided are experimental, an acceptable trade-off between the internal and external validity is demonstrated through the evidence provided from

the case analysis and literature. Experimental manipulation used in this study demonstrates how AFCs lead to better-designed communities for an engaged and independent aging population. While the recommendations address the need for innovative solutions derived from community partnerships, intergovernmental cohesion, and technological integration, the overall effectiveness of an AFC implementation resides in further testing and evaluation. Factors such as inclusion and exclusion criteria have been incorporated to demonstrate how the population (seniors), is clear and how intervention models can be replicated based on proxy measurements used to empower and engage seniors within any locality.

## **THEORETICAL FRAMEWORK**

### **Defining Age-Friendly Communities**

The World Health Organization defines age-friendly communities (AFCs) as:

“A community which recognizes diversity amongst older persons, promotes inclusion and contributions in all areas of community life, respects their decisions, and lifestyle choices, and anticipates and responds flexibly to aging-related needs and preferences” (National Seniors Strategy, 2020).

Policies directed at older adults reinforce the potential for communities to ensure housing, transportation, healthy lifestyles, and accessible services are in place (Keyes & Benavides, 2017). According to WHO, between 2015 and 2050, the population of seniors is expected to reach two billion worldwide (WHO, 2007). AFCs provide social and inclusionary programmes to encourage participation, enhance civic engagement, and improvements to the physical structures to transportation and physical environments to support seniors. Table 1 includes the physical, social, and mental dimensions under the WHO framework to support various aspects of aging. These dimensions have been adapted from the literature review, and the WHO Age-Friendly Communities Guideline to showcase what features are needed to allow seniors to age in place and remain independent within their local communities.

**Table 1: Dimensions Defining Age-Friendly Communities and Examples of Initiatives***Characteristics of the Environment**Corresponding Initiatives*

<b>Physical Environment</b>	City planning and development focused on building recreation and open spaces Land-use policies
<b>Transportation</b>	Bicycle and pedestrian roadways Transit systems and subsidized fares Older persons driving safety design
<b>Housing</b>	Housing options Subsidized housing Senior-focused home services
<b>Communication</b>	Communication models built with accessibility lens and information is to be provided in different formats
<b>Citizen Engagement</b>	Social engagement activities and inclusive policy designs
<b>Safety</b>	Vulnerable population public safety and emergency management provisions
<b>Mental Health</b>	Community health network built with resources and information to support deteriorating mental health issues
<b>Empowerment</b>	Participation in advisory committees and councils for representation

Source: WHO. (2007). Global Age-Friendly Cities Guide. World Health Organization. Pp. 1-82.

AFCs have existed for decades and various disciplines like environmental gerontology have examined the intersectionality between AFC policy designs, the environment, people, and quality of life. WHO's Global Age-Friendly Cities guideline encourages cities to devise meaningful policies, programs, and services that promote healthy, safe, and secured aging in place opportunities. This type of systematic change requires an integrated approach. Creating

community collaboration with stakeholders and various levels of government reduces social, economic and health implications to the broader community.

The AFC movement can be traced back to the United Nations First World Assembly on Aging in 1982 (Rémillard-Boilard, 2018). This conference highlighted the importance of population aging and issues which influenced seniors across the world. International discussions took place and invited governments at different levels to work together to better address aging-related concerns including but not limited to income, health, housing, and the environment. Not to mention, a significant influence – both directly and indirectly became centered around health promotion practices. “It initiated a redefinition and repositioning of institutions, epistemic communities, and actors at the ‘health’ end of the disease-health continuum (Rémillard-Boilard, 2018). The deliberation suggests the importance of stakeholder engagement with governments, social and economic sectors, organizations, and community groups to drive achievable outcomes for effective health promotion for seniors (Rémillard-Boilard, 2018). This initiative birthed the development of the world’s first age-friendly framework to reorient health, social and economic services “towards the perspective of the users, strengthen community collaboration and devise environments conducive to the population” it serves (WHO, 2015). Fast forward twenty years and the WHO’s Active Aging Policy Framework tool emerged as a guideline to encourage and enable active aging, while increasing the quality of life opportunities for seniors.

The AFC guideline was created in 2005 during the International Association of Gerontology and Geriatrics (IAGG) World Congress of Gerontology and was launched across 33 cities worldwide in 2006 (Rémillard-Boilard, 2018). The purpose of this guideline was to ensure perspectives of older persons, interest groups, and service providers were considered in designing AFCs. The development of this design included 1,485 seniors, 250 caregivers and 515

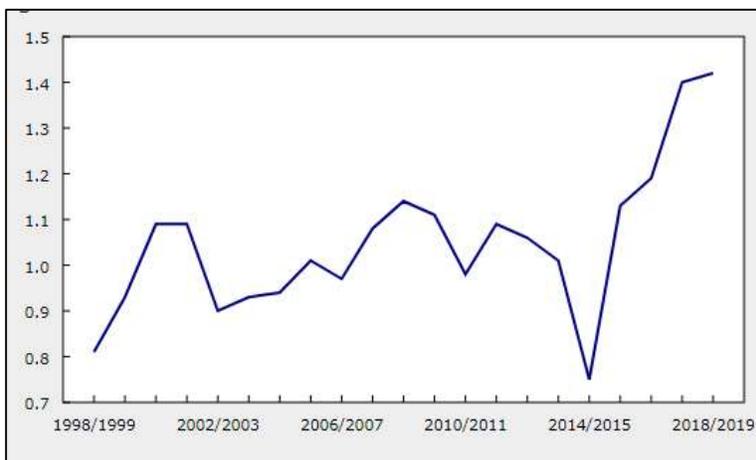
service providers from the public and private sectors with over 15 focus groups conducted worldwide (Plouffe & Kalache, 2010). This process, also known as the ‘Vancouver Protocol,’ required seniors to be divided into different age groups (60-74 and 75+) along with their socioeconomic status (Rémillard-Boilard, 2018). The collaborative approach of integrating seniors into the development of the AFC framework was to empower them in developing intervention and policy models of age-friendliness that resonates with their lived realities. This integrative approach also included consultations with researchers, municipal and regional service providers, interest groups, and voluntary organizations to identify the key domains required to address age-friendliness within communities. Housing, transportation, respect, social inclusion, social participation, social and civic engagement, outdoor spaces, buildings, community support and health services, communication and information were areas proposed within WHO’s Age-Friendly Communities checklist for communities to adopt (WHO, 2007).

### **Examining Population Growth of Seniors within Canada and Ontario**

Like many communities across the world, Canada is no stranger to the paradigm shift caused by the growing aging population. The number of seniors in Canada has been on a growth trajectory since the 1970s, from 8 percent to 14 percent in 2009. It is anticipated by 2061; seniors are expected to make up 28 percent of the nation’s total population (Statistics Canada, 2016). In 2011, the average life expectancy was 81.7 years old compared to 57.1 years of age in 1921(Statistics Canada, 2011). As illustrated in Figure 1, the population growth rate of seniors has grown substantially from 1999 to 2019. As a result, intertwining the aging population growth with an increased life expectancy indicates significant fiscal pressures and higher demands for senior-related programs for governments. As demonstrated, Canadian seniors are living longer their quality of life demands also increases. Through the aging process issues related to the

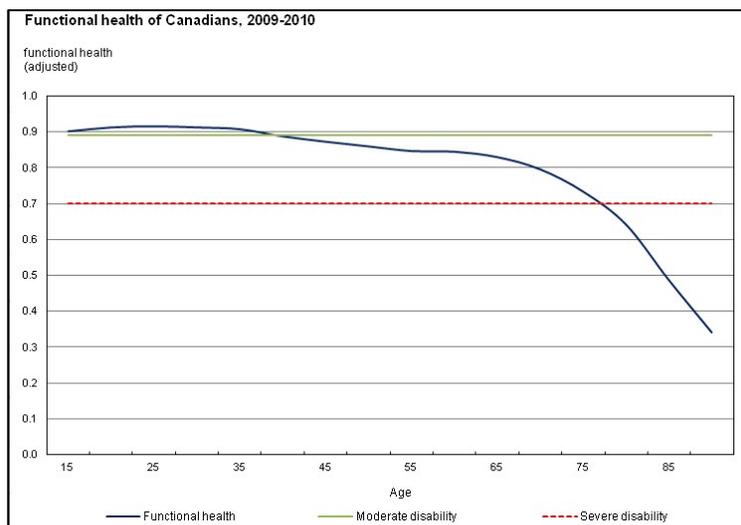
demand for health services and support are rapidly growing increasing the need for sustainable policies to take shape. Figure 2 showcases the trend collected from Statistics Canada and demonstrates how decline in functional health leads to a growth in disability and disability-related costs.

**Figure 1 – Population Growth Rate, 1998/1999 to 2018/2019, Canada**



Source: Statistics Canada (2019). Population growth rate, 1998/1999 to 2018/2019, Canada.

**Figure 2 – Functional Health of Canadians 2009-2010 – Longer Life and Quality of Life**



Source: Statistics Canada (2011). Canadian Community Health Survey, National Population Survey, 2006 Census, Canadian Vital Statistics Death.

Additionally, Canada's population growth rate is rated the highest among its G7 counterparts; doubled that of United States and United Kingdom at 0.6 per cent each (Statistics

Canada, 2019). In 2011, Ontario reported seniors making up 15 per cent of the province’s overall population and forecasted to double by 2036 impacting communities and health service providers (AMO, 2006). As the population is shifting, the life expectancy rates are also growing, causing increased demands for more senior-focused services, interests, and expectations to become readily available. Today, the “grey tsunami” has put immense pressure on the quality of services and aging in place initiatives to empower seniors to live independently and recognizing the number of seniors living beyond 80+ will require heightened community, social and health services to be readily available to support their needs. Table 2 showcases the Association of Municipalities of Ontario (AMO) projected population growth from 2010 to 2031 and paints a picture of the imminent pressures and capacity adjustment issues emerging beyond the horizons.

**Table 2 – Population Project Growth from 2010-2031 in Ontario**

Region	2010*	2031*
Ontario	13.2	16.9
North East	.568	.587
North West	.239	.237
Eastern	1.72	2.11
Central/GTA	9.08	12.9
South West	1.6	1.81

*\* In millions*

Source: AMO<sub>2</sub> (2011). *Coming of Age: The Municipal Role in Caring for Ontario’s seniors*. Association of Municipalities of Ontario. AMO Paper on Long-term Care and Senior Services. Toronto: Ontario.

### **Examining the Relationship Between the Environment and Seniors**

Gerontological literature suggest there is a correlation between the individual and environmental resources that contribute to healthy aging. Contributing factors caused by the physical, spatial, and technical environment remain largely overlooked as it relates to the design of community environments, technology, home, and public life. Environmental gerontology experts such as Lawton and Nahemow showcase how the human life span is influenced by the

nature and characteristics of the person and environmental interactions (Wahl et al., 2012). Improvements to the physical environment has positive impacts to seniors with reduction to disability and dependency for assistance as they age (Wahl et al., 2010). Furthermore, within urban environments, seniors are often victim to social exclusion known as ‘erasure’ which is “an extreme form of social exclusion whereby frail older people remain unseen in cities” (Kelley et al., 2018). To support the process of aging in place, there must be continuous interaction between seniors and their living environment. Lawton and Nahemow devised the Ecological Model of Aging to illustrate the interaction between an individual and their environment. It assumes that the well-being of an individual is built on the premise of a dynamic interplay between a person and their environment over a lifespan and the relationship shared evolves through the aging process. “When a person has the capabilities to meet the demands of the environment or the demands of the environment are reduced to match the person’s capabilities, a successful interaction occurs” (Fausset et al., 2011).

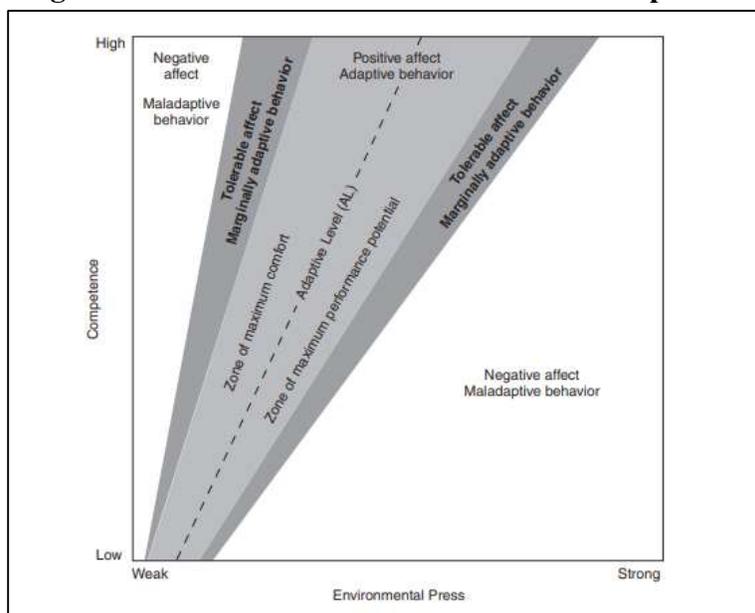
The physical environment imposes impediments later in life for an individual but can also enhance opportunities to support aging in place through new technological competencies and refinements to the environmental design. As aging is a process of decline, a person’s physical, perceptual, and cognitive change emerges through a natural process. Challenges associated with mobility, vision, and cognitive ability hinders the functionality of seniors to meet the demands of their environments (Fausset et al., 2011). Similarly, the environment also fluctuates based on the demands placed by residents. Environmental or unprecedented occurrences such as the COVID-19 pandemic, has shown to heighten the efforts of senior residents to keep up with the environmental shifts, resulting in a significant impact to the quality of interaction between themselves and the environment. For policymakers, designing for human behavior in a way that

fulfills human needs is a rising concern. However, the impact created within the environment, by the community, and from technology has also established a “new” environment for aging (Wahl et al., 2012). Lawton refers to the concept of environmental docility as situations where an individual’s competence diminishes, and behaviour is influenced by the characteristics of the environment. Moreover, environmental proactivity increases an individual’s competence and enables their ability to make use of the resources provided within the environment for favourable outcomes for themselves. Environmental pressures refer to “aspects of the environment that are presumed to have some motivating force for the individual whether they are aware of them or not” (Nahemow & Lawton, 1973). Demand character is defined as the “total magnitude of the environment’s effect on the individual” and affective response is the “self-evaluated quality” to illustrate overall experience” (Nahemow & Lawton, 1973).

The Ecological Theory of Aging showcases how the competencies of an individual (e.g. “sensory loss, physical mobility loss and cognitive decline) and characteristics of the environment which include (housing opportunities, neighborhood conditions and public transportation”) are interrelated (Wahl et al., 2013). As policymakers, the need for policy designs focused on the environment posits the ability to support aging in place. Leveraging new technology for the future helps support aging in place, considering how baby boomers and future generation of seniors become more technically adept. To support effective aging policy models, linking experiences built on the premise of belonging and behaviour lead to positive outcomes from person-environment interactions. Policy design focused central to the concept of belonging demonstrate a commitment to enabling positive connections among people and the environment. The concept of agency is defined as an individual’s ability to proactively change their life through behaviour.

Figure 3 showcases the relationship between belongingness, agency, the environment and aging effectively through Lawton and Nahemow's Press-Competence Model.

**Figure 3 - Lawton and Nahemow's Press-Competence Model**



Source: Schaie K. & Schooler C. (2013). *Chapter 2 – Behaviour-Relevant Ecological Factors*. Social Structure and Aging: Psychological Processes. Psychology Press. Pp 1-282.

## MODELS TO SUPPORT AGE-FRIENDLY COMMUNITY POLICY DESIGNS

Policy and program designs aimed at seniors have traditionally focused on the delivery of the benefits sought to the aging population. Over the last two decades, significant shifts have taken place to strengthen the age-friendly communities initiatives (AFCIs) process. AFCIs require extensive engagement with multiple stakeholders for an effective policy design and implementation to take place. Peters explains rational decision-making is central to strengthening policy design through intergovernmental cohesion, advocacy and support from political leadership and ongoing communication with citizens, social and interest groups (Peters, 2015). This type of systematic and collaborative decision-making leads to sustainable and purposive policy planning enabling a sense of confidence of among community residents in having their needs met. As Mahmood and Keating state: “Neither person nor place is static; at different points

in the aging process, the same home in the same neighborhood can foster or impede access to other material resources or social relationships” (Mahmood & Keating, 2012). As a result, environmental gerontology, and the systematic and purposive policymaking process both justifiably argue progressive and continuous changes to implementation to support AFC designs. The impacts of policy development must consider what has taken place but also consider the future potential and aspirational elements to aging (Kelley et al., 2018).

Peters conceptualizes the policymaking process to be systematic and purposive (Peters, 2015). Through this process, governments are required to continuously engage and develop activities for the purpose of transforming society with outcomes reflected by realities. Peters defines governance as a continued process with costs and benefits tied to both action and inaction (Peters, 2015). To reinforce rational policymaking, information and data collection is critical to evaluate long-term impacts to monitor a policy’s overall effectiveness. Understanding needs assessment and diversifying interest is critical feedback for policy-planning. Ineffective policies often assume that all actors involved in the preliminary process of information gathering have the “same array of preferences...or be based on roughly similar foundations” (Peters, 2015). However, as the literature showcases, actors are self-interested in policymaking and seek to push their own interests to get onto the public agenda. Under decision-making models, Peters explains the rationality piece applied to governance decision-making can be drawn from decision science seeking to quantify payoffs of making choices under risk. Particularly with health-related policy designs, the decision-making framework must consider the costs and benefits associated with both action and inaction to assess varying probabilities and its direct impact to the population being affected. Recognizing how environmental factors influence aging, attention must be paid not only to the opportunities, risks and conditions of the immediacy of the day-to-

day experience of seniors, but also how outside factors affect such conditions (Kelley et al., 2018). Such factors include provincial and federal policies influencing aging and the accessibility of public services. Consequently, understanding the processes behind policy outcomes must consider factors emerging from the macro-environment as well as the micro-environment for effective implementation.

### **Intergovernmental Cohesion**

Polarization and partisanship incapacitate the success of policy planning and implementation particularly when it comes to health and social issues. As municipalities are creatures of the province, engaging in health and social initiatives often falls under the approval of the provincial body. As policy ideas and instruments are often provided to local government agencies, often policy models and decision-making efforts fail to reflect the actual realities of the policy problem in question. As healthcare falls under provincial jurisdiction, local government agencies are required to deliver elements of healthcare, including promotion to their community with minimal collaboration and decision-making abilities for effective policy action. Horak explains policy diffusion as the process “where one government’s policy choice is influenced by those of another” (Horak, 2020). The cross-functional relationship between intergovernmental policymaking resides through policy diffusion. Municipalities are provided with a direction to provide health and social policies but are often limited in receiving support in how to do so effectively. The Association of Municipalities of Ontario (AMO) assert municipalities are active players in Ontario’s health system with limitations in supporting the design of provincial policy planning for aging (AMO, 2019). In fact, the financial burden of delivering healthcare services is distributed between both the province and municipalities with 75 percent of the contributions emerge from the province and municipalities are expected to pay 25 percent (AMO, 2019).

However, municipalities put forth more than the allocated amount to cover impending gaps with public health costs deriving from the province.

Since municipalities are the closest level of government to the people, they have better access to knowledge and the realities of the health concerns within its community. The divide between the province and municipalities is further exacerbated when politics comes into play, and diverging views at the local and provincial level increases the gap for cooperation. Cohesion between different levels of government is vital towards improving the access and delivery of aging related policy initiatives. Understanding and taking into consideration of the distinctive realities the different levels of government have on the same issue creates a valued system of output- to outcome-based policymaking.

In British Columbia and Quebec, the funding is allotted through the Ministry and their represented municipal associations (Plouffe & Kalache, 2011). Engagement with provincial ministries, non-government organizations supporting municipal policy, senior-focused agencies and post-secondary institutions are presented as plausible allies to support the effective implementation of AFC designs strengthening visibility and coherence. AMO continues to work with its provincial counterparts for flexibility and funding support to mitigate the impacts of its current (or absence of) policies impacting the health and social risks of senior residents within specific communities. For many municipalities, the impetus to provide health-related services is conducted through an exhaustive budgetary process or property tax base and is mandated by the province for implementation regardless of its sustainability and quality. Enhancing funding opportunities to advance policy directives surrounding aging, health, and wellness would generate better service delivery to support residents as it reduces the burden of social and health costs associated with these issues through the absence of proactive policy planning.

As governments are the primary drivers of AFC models, political engagement and declaration directly impacts changing policy problems into political realities. Directly or indirectly, there are funding models provided to communities to undertake AFC planning. As many policies at the local level are spearheaded under council's direction, they have a substantial impact on how effectively implementation is conducted to support health policy directives (Williams, 2013) While health is not "considered in municipal deliberations around budgets, transportation and infrastructure investments, neighborhood planning", it still has the ability to make it on the public agenda through positive political coercion and network integration (Williams, 2013). As the policymaking process and political sway go together at the local level, policy action emerges through need through municipal staff being directed by council, and council being the direct representatives of the community. As aging is a complex problem, policy development to support effective implementation requires an integrated solution through collaboration. Members of Council are responsible for championing and representing the needs of the community they serve through effective leadership. As community catalysts, the elected officials possess the power to leverage citizen participation and use indirect policy instruments such as public input and encouragement through information to generate the action needed to support the community they serve. There is significance related to participation through the local policy process since there are no party or platforms in place. Since municipalities are the level of government closest to the people, this level of government is well-positioned to ensure health and social services are delivered through coordination and community-level engagement to support the province for effective implementation. As community catalysts, members of council are in place of authority and able to articulate community needs to champion better healthcare delivery models. Locally elected officials can leverage their power to move policy decisions

quickly by applying necessary pressure on municipal staff to ensure community needs are addressed and monitored to achieve positive outcomes.

To strengthen the political ties to policy decision-making, several municipalities have developed senior-focused advisory committees to ensure community issues related to aging are reflected through the involvement of senior residents. Through the committee structure citizens are empowered to lead discussions and provide input through lived experiences. It also helps develop effective communication loops in place between councillors, the mayor, and citizens regarding the policy process. Not to mention, as elected officials often contribute to strategic plans, organizational visions and values, open communication with committee representatives helps ensure community wide values and perspectives are addressed in the municipal strategic and organizational planning framework. For example, “municipal recreation departments have become leaders in providing healthy living options for the broader community including seniors” (AMO<sub>2</sub>, 2011). As a result, when senior or health-focused policies are entrenched into community strategic or master plans, services provided automatically begin to incorporate an age-friendly lens for inclusivity.

### **Multisectoral and Community Cohesion**

Beard and Warth state, “to ensure the improvements are coherent, equitable and sustainable for older people”, building partnerships with stakeholders of different calibres leads to success for the development of AFCs. (Garon et al., 2016). Participants coming from various interest groups recognize the value of integrating seniors into AFC initiatives. McDonald explains this level of integration with seniors, and senior-focused groups strengthens the ‘lived experiences’ to increase momentum of results (McDonald et al., 2018). A key issue identified through the literature has been focused on prioritization and framing solutions to provide

implementation advice. While consultation is critical to drive AFC developments, literature advocates for an integrated approach between experts, society and various stakeholder groups are needed for well-rounded solutions.

Across many disciplines, public health policies rely on expert level knowledge. However, Raphael argues “lay knowledge and critical knowledge exploration of political and social forces influencing population health” are just as important for community-based health promotion activities (Raphael et al., 2005). Participatory engagement with the broader community creates a fluid discussion from varied perspectives. The City of Toronto’s study to assess how policy decisions affect senior’s quality of life identified the participants gathered (seniors), noticed policymakers failing to engage them in the design and delivery of aging programs. Resulting in policy decisions becoming insensitive to the needs of seniors due to the lack of collaboration and cohesion. Federally, Canada was among one of the “few industrialized nations with no implementation plans aimed at seniors, whereas provincially, more emphasis resided in the cost and program reduction limiting interest in seniors-supporting policies” (Raphael et al., 2005). Kelley states eliminating erasure is key for inclusionary policy designs for AFC models. She defines erasure as a form of social exclusion – the absence of certain groups of people as ‘unseen’ in the policy or implementation process (Kelley et al., 2018). As the public influences the policy process through democracy, inciting a participatory approach to policy planning for AFCs is critical to ensure stakeholders have control over the AFCI’s development, implementation, and outcome. Shifting the knowledge and information gathering process to capture lived experiences and wisdom has been deemed just as insightful as expert-level input. Not only does this process democratizes policymaking, but also fosters a sense of community

pride and “community-level change in response to changing policy environments” (Raphael et al., 2005).

As the public is responsible for electing its officials, eligible to participate in civic demonstrations, advocacy and consultative practices, civilians can influence policy through meaningful structural interactions. Encouraging citizens vis-à-vis government to lead participatory decision-making efforts in designing policy, evokes a sense of transparency and flow for information to be shared through ongoing community-government collaboration. As public participation paints a holistic picture for effective policy action, fostering collaboration and engagement efforts evokes civic pride and a sense of belongingness as residents can contribute to the design of their local neighborhoods. The structural design of the participatory engagement model creates a sense of checks and balances for residents to monitor and assess how policy decisions are made and evaluate their effectiveness. Encouraging community and interest groups focused on seniors also supports capacity building and denotes a sense of urgency for policy action. As local government agencies are pressured to deliver innovative and effective solutions to support seniors. They are often constrained by a finite amount of knowledge, expertise, resources, and funding available in-house to support aging-related initiatives. However, collaboration with citizens, participatory groups and community actors alleviates such burdens and shows a commitment quality and equitable policymaking to take shape.

### **Technological Integration to Support Policy and Intervention**

Communities around the world are experiencing a rise in the number of seniors with mental ailments such as Dementia and Alzheimer’s. In 2010, there were 36 million seniors across the world with dementia with the forecast projected growth of 115 million by 2050 (Guhien, 2016). Together, technology and policies enable seniors with cognitive and physical

ailments to continue to age in place independently. According to AGEWELL, a Canadian network of researchers and leaders, 70 percent of Canadians feel incorporating technology into healthcare would prevent the onset of severe illnesses (AGEWELL, 2019). The environmental constructs integrated with technological-based solutions to the structural design of housing for example, can support senior residents live independently and within their neighborhood for a much longer duration. Smart solutions to senior-friendly housing promotes better quality of life for seniors wishing to remain in their homes and free from the burdens of aging in institutional care homes (Guhien, 2016). Within Canada, 85 percent of seniors prefer to age in homes and their local communities and only 33 percent have considered smart-home technology (AGEWELL, 2019). Remaining in familiar surroundings has showcased to be a more economical, socially sustainable, and environmentally sound alternative to institutionalized home care (Landof et al., 2007). As seniors develop stronger connections throughout the years to their neighborhoods, familiarity with services provided and community-based resources, it assists in their well-being towards aging in place for a longer period. In fact, Karuppannam & Sivam illustrate that many seniors prefer to live independently and age in place within their home environments. (Karuppannam & Sivam, 2013). As municipalities are limited with funding and resources to spearhead senior-focused initiatives, opportunities to leverage financial, capacity and resourcing through tech-based solutions provides opportunities to create innovative solutions to support the growing senior population.

Traditionally, technological developments were not readily available to support Lawton and Nehemow's theory on aging as it would now. The World Wide Web and automation of everyday technology (teller machines, computer voice options, vehicle-based technology, and sensor- or GPS-based assistance options) has transformed the way people of different age groups

interact with their environment (Harrison et al., 2019). Today, the average senior spends more time using technology than in previous decades (Livingston, 2019). According to the Pew Research Center, the rise in screen time and exposure to technology coincides with the growth of number of seniors. In 2004, 14 percent of seniors in America were internet users. Today, 73 percent are technologically proficient (Livingston, 2019). As technological literacy grows among seniors, meaningful improvements to help this demographic interact and live independently using technology requires partnerships between policy and program design interventionists and seniors. Co-designing partnerships creates barrier-free policies and enables aging literacy in the mandate for communities looking to enhance their AFC mandates. Canadian communities have recognized technological advancements will spur rapid change in community services are delivered and accessed. It also opens up a window to attract businesses within a community to devise a ‘caring-sharing economy’ for age-friendly and senior-focused businesses. “Only a few programs provide technology-related services to help [Canadian] adults age in place” (Government of Canada, 2019). It is no surprise remote care and robotics offer infinite possibilities to transform care for seniors. However, as policymakers, understanding technology is available to support service and policy models is needed to help seniors age in place.

The rapid increase of the ‘silver market’ has emerged to support innovative designs for seniors, particularly those with compromised cognitive, social functioning and physical capabilities. Robotics and artificial intelligence models have enabled seniors to live independently within their homes and communities, provide training and smart home environments support seniors with sensory, mobility or cognitive decline. As the policy process must be systematic and purposive, it must be transformative in nature and open to change for an evolving society. Policymakers can utilise the benefits of technology designed to support seniors

of the future age in a healthy manner within their communities while remaining “connected” despite loss of experiences. WHO’s age-friendly communities guideline recommends consultations with seniors to address technological-based solutions to support aging in place within the community. “An important component of this initiative should be identifying technologies that support aging in place” (Jefferson, 2018). As the preference of the new wave of seniors is to age in place rather than in assisted living facilities, technological based solutions such as the internet of things, active assisted living robotics and artificial intelligence, have proven to foster increased quality of life and independence among seniors. Exploring the feasibility of technological-based solutions for seniors requires a ‘bottom-up’ approach to policy design. A key barrier to wider adaptation of tech-based integration in policy planning have found in the design process. During the design phase, technology for seniors has been spearheaded by businesses and geriatricians’ perceptions of what seniors need with little to no consultations conducted with the target audience for input (Wang et al., 2019). A bottom-up approach from the user perspectives of real-world constraints would better substantiate the success in its intervention. For effective policy diffusion, integrating seniors in the conversation to leverage technology to support aging in place is critical. Robotics and the digital space shows promise for policymakers and the broader community. For seniors, tech-based solutions support and compensate those with loss agency. It also creates a heightened sense of emotional attachment to the digital space creating positive experiences of environmental richness in the context of community belonging.

## **CASE STUDIES**

### **Montreal, Quebec**

#### **Municipal Action Plan for Seniors 2018-2020**

#### **A Case for Citizen Participation for Municipal Projects**

In 2010, the City of Montreal signed an agreement with the province of Quebec to adapt a city-wide strategy aimed at supporting the needs of its seniors. In response to the Global Age-friendly Cities project in 2005 and the WHO's publication of age-friendly communities framework, the province of Quebec established an Age-friendly Municipality (AFM) initiative to encourage Quebec cities to develop policy design and action plans aimed at supporting seniors thrive and age in place effectively (Montreal, 2018). In 2010, the City of Montreal's administration signed an agreement with the province in developing a multi-year action plan aimed at addressing the realities concerning seniors. In 2012, Montreal's City Council adopted its first action plan outlining several commitments aimed at aging in place to be achieved over the years which included deliverables aimed at improving services, infrastructure and integrating seniors to lead discussion for improved living conditions to support their needs (Montreal, 2018).

Effective policy implementation requires measuring outcomes of the policy objectives. In 2017, the city ruled out a four-year implementation plan for the first time in the city's history focused on and led by seniors. This plan was focused on measuring progress and outlining the issues seniors continued to face, fostering meaningful partnerships and collaborations, and creating better municipal programs and action plans to sustain aging within the city. At the administrative level, municipal departments collaborated with seniors and senior-focused interest groups on the progress and planning of city-wide projects to assess its long-term impacts on seniors. For example, the parks, recreation, infrastructure delivery and urban planning

departments regularly met with community groups under council's direction to ensure project deliverables incorporated the perspectives of seniors upon design. To support this initiative the City staff assembling an Advisory Committee spearheaded by an elected official, and included public participants, non-profit organizations focused on seniors and other senior-focused agencies for regular consultations (Montreal, 2018). The City also assembled a municipal representative committee (MRC) which included department heads, senior residents, and senior-focused agencies to ensure departmental objectives were in alignment with the City's senior-focused action plan. The City and Council worked together to ensure a participative approach was in place through consultations, surveys, and telephone conversations to ensure senior voices are heard across all available mediums. Over the course of the policy design, 17 consultations took place with seniors within Montreal through the development of its strategic plan (Montreal, 2018).

As part of the City's commitment to transparency, municipal administration produced a midterm report highlighting policy outcomes and progress made through the 2018-2020 duration for public knowledge (Midterm report, 2018). This level of engagement builds public trust in government and showcases the City's commitment to producing outcome-based results to support its community through accountability. Throughout this report, 27 objectives were highlighted and provided details such as how consultations were conducted, who was involved and what objectives were completed within the specific timeframe (Montreal, 2020).

The participative approach to policy design demonstrated the city's commitment towards implementing service delivery models that reflect the needs of the seniors within the community. Encouraging active citizen participation in the design and implementation of municipal projects related to urban planning, infrastructure and policy design strengthened the city's AFC initiative

to be sustainable to meet future needs of aging persons. As the Ecological Theory of Aging is focused on the interplay between an individual and the environment, creating systematic changes to the social, physical and structural environment within Montreal heightened a sense of belongingness and ensured aging in place was a feasible reality for seniors. As Montreal illustrated, integrating as City's vision and strategic plan to foster solidarity and inclusiveness for sustainable neighborhood development, positively enriches the living experience for seniors. As part of the City's 2018-2020 Municipal Action Plan for Seniors, the City focused on four areas to enhance age-friendliness towards its policy and program intervention design: Making Montreal accessible and safe, focusing on social inclusion, citizen engagement and creating meaningful partnerships.

### **Langley, British Columbia**

#### **The Development of Dementia-Friendly Villages**

As mentioned, technology offers unprecedented opportunities to enhance quality of life initiatives for seniors with sustainable solutions. Conceptualized by the De Hogeweyk village in the Netherlands, dementia villages have become an innovative way to provide residential care for seniors with cognitive impediments such as dementia. Dementia villages are an innovative model of residential care that is focused on enhancing the quality of life of seniors and providing personalized care that is minimally institutionalized with home-like environments in place (Harris et al., 2009). "Dementia is a mental illness caused by the progressive decline of cognitive function affecting memory, language, and making the everyday tasks of seniors both mentally and physically difficult" (Harris et al., 2009). Advancing dementia is the root cause of admission into long-term care facilities to support the complex health care needs associated with this mental health disorder. Dementia villages often integrate AI and smart technology to help provide care

for residents while providing research opportunities for policymakers and service providers. In Canada, over 87 percent of long-term care residents have a form of dementia (Harris et al., 2009). As the population of aging persons with dementia is subject to increase, annual healthcare costs associated for dementia care are subject to double from \$8.3 billion in 2011 to \$16.6 billion by 2031 (Harris et al., 2009). The Canadian Academy of Health Sciences noted the “safety, quality of care and quality of life for people with dementia varies considerably in long-term care homes across Canada” (Harris et al., 2009). A greater focus to publicly funded resources for dementia patients, and a stronger commitment to the design and delivery of policy recommendations for dementia-friendly designs are needed to support aging in place. Integrating AI within the facility through GPS sensory tracking and technology generates opportunities for intelligent and innovative solutions in policymaking.

The Village, a private-care facility in Langley, British Columbia launched a pilot project with the Ministry of Health for an innovative approach by deinstitutionalizing nursing homes and allowing patrons to age in place independently within a village-designed environment. The De Hogeweyk model is the world’s first dementia village and encompasses a “small-house concept of six people living in a household with walkable access” to the village that is safely secured (O’Brien, 2019). The Village is a seven-acre complex underscoring the De Hogeweyk model comprised of six cottages home to over a dozen residents, sharing a communal kitchen, single-floor bedrooms, surrounded by a retail village, grocery store, barber shops and beauty salons, a community garden, art studio, coffee shops and restaurants (O’Brien, 2019). The parameter of the village is discreetly secured and pathways throughout the village have been designed with accessibility and safety precautions in mind. The Village is also equipped with 72 healthcare workers available 24/7 for nursing and other forms of care. As the purpose of a dementia-village

is to stimulate social inclusion and independence, majority of the residents within the Village have private rooms and individualized spaces to empower aging in place. Within British Columbia, 70,000 people live with dementia with the number expected to grow by 50 percent over the next ten years (Duran, 2015).

Enhanced quality of life and independence are key elements contributing to an effective AFC. Improving the quality of life of seniors with dementia requires a “multidimensional change in the residential care philosophy and care delivery model” (Harris et al., 2009). Creating home-like environments which enable active participation provides positive outcomes for seniors. Not to mention, testing the data from real-life subjects helps guide technology and policy interventions in the right direction to be applicable for the real world. Interventions including accessibility to gardens and outdoor space contribute to better quality of life and well-being (Harris et al., 2009). The literature in favour of dementia-friendly villages demonstrate positive outcomes related to individuals feeling empowered, autonomous, and able to engage in everyday activities with the support of staff and residents available (Jenkins & Smythe, 2013). With access to everyday activities, interaction with various social groups, and accessible healthcare provided at a smaller scale; residents continue to engage in ‘real world’ activities and are able to maintain a sense of connectedness within their community and to the outside world.

### **The Greater Sudbury Area, Ontario Age-Friendly Community Strategy**

In 2016, the City of Sudbury and Greater Sudbury Area communities, shifted the community’s priorities to reflect the needs of its growing senior population. While the population of Sudbury grew by five percent between 2010 and 2017, the number of seniors prevalent across the Greater Sudbury Area grew to 33 percent and accounted for 21 percent of the total population

(Age-Friendly World, 2018). Recognizing this transformative growth, Sudbury devised an extensive age-friendly communities' strategy to alleviate burdens associated with housing, transportation, civic engagement, and accessibility to support its senior residents. To fulfill the requirements to meet these domains, Sudbury and other local communities engaged in several changes at the administrative level to incorporate a collaborative decision-making framework to enhance service delivery models to better allow aging in place.

Sudbury engaged in its first AFCI by devising several Community Listening Sessions, surveys and research conducted by the Center for Social & Demographic Research on Aging at UMass Boston (Age-Friendly World, 2018). Concurrently, Sudbury utilised this information to devise two public forums focused on the lived experiences of seniors in the planning and development of a livable community for its aging residents. The partnership created with the UMass Boston and other aging-related organizations created a sense of urgency for the Greater Sudbury Area to act to support its rising seniors' population. Sudbury's second initiative was focused on improving the transportation model for seniors. This multi-level community support turned into a one-year pilot project in partnership with CrossTown Connect Transportation Management Association and local transportation units to accomplish the following:

1. "Embed an element in the regional transportation infrastructure that is a hybrid between traditional taxi business model and mobility-on-demand services to better address the needs of residents, service providers and municipalities
2. Provide services to both market rate and subsidized customers that encompassed vetted and potential certified senior-friendly drivers, diverse fleet and vehicles, extended hours and;

3. Model the use of mobility-on-demand technology from other cities and enhance parking space for commuters and pedestrian-friendly roadways” (Age Friendly World, 2018).

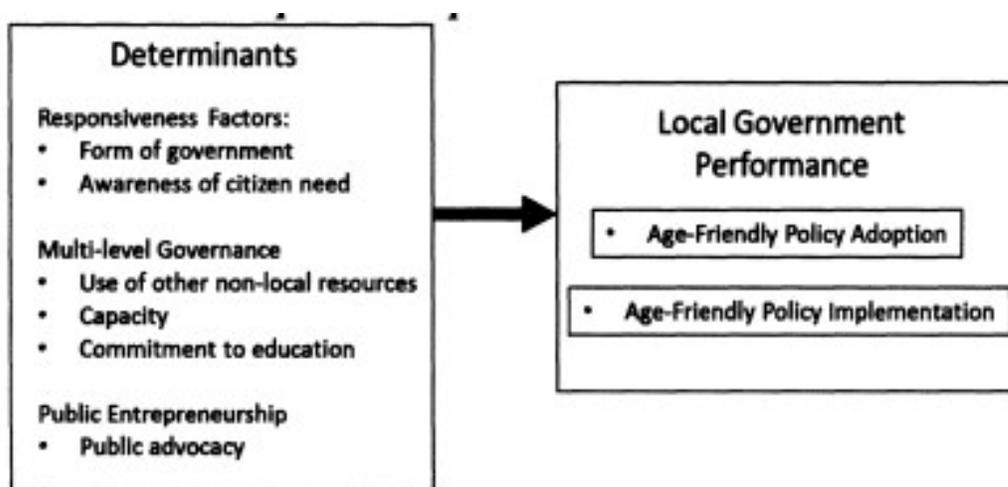
In addition, Sudbury’s mission included advancing its outdoor space and buildings to become more age friendly. As municipalities promote accessible outdoor spaces, enhancing the City’s pedestrian and bicycle roadways as well as incorporation of open spaces and building promote active and healthy living. In addition, Sudbury’s commitment to accessibility became entrenched in various design and service delivery models throughout the municipality. It showcased its values towards age-friendliness by: Creating open spaces, being accessible (easy to navigate, easy to understand trails and pathways, have painted curbs and promote “equity at intersections” when traffic is multimodal, enable longer times at crosswalks, have fountains and raised community garden beds in place, provide shaded areas to sit and adult playgrounds and workout stations” to foster a commitment to age-friendliness for seniors (Age-Friendly World, 2018). These designs integrated in the planning and development of urban spaces promoted interaction, socialization, and stewardship for seniors; buildings begun to take into better accounts of sight and hearing needs from an accessibility’s standpoint. Lastly, Littleton a small town within Sudbury, committed itself into enhancing its communication and information strategy to become more senior-friendly by ensuring adequate in-person outreach opportunities are prevalent, social media, print newsletters and phone calls are offered. Sudbury as a whole, also co-designed its communication strategy in partnership with TigerTech, a program supporting seniors’ trouble-shoot their computers, smartphones and digital devices and technological support is provided for free by high-school students local to the area (Age-Friendly World, 2018). In addition to disseminating information using various mediums, the Greater Sudbury Age-Friendly Plan

encompasses a commitment to distribute information in different languages and in ways which supports visual and hearing impairments. Other elements of Sudbury's strategy include increased programs available for health and wellness including Tai Chi, blood pressure checks, fall prevention programs, and various mental health and addictions programs to be offered through partnerships with allied healthcare agencies within the Greater Sudbury Area.

## **FUTURE DIRECTION**

As it has been showcased, population aging has become a democratic reality. Environmental gerontology and the AFC design delineate the need for policy and intervention outcomes to support seniors age in place. The preceding evidence showcases how municipalities incorporated a hybrid model to decision-making consisting of expert knowledge with community values. While the literature suggests the term responsiveness is defined as "speed and accuracy" in how governments react to community needs, policies aimed at health and well-being requires a collective sense of interest and understanding from a personalized level (Keyes & Benavides, 2017). The effectiveness of an AFC design resides in how local governments can facilitate, collaborate, and understand the needs and values of the community to support aging. Figure 3 showcases the various elements required for effective policy adoption through citizen engagement, capacity development and a commitment to creating change.

**Figure 4 – Integration Model: Responsiveness, Multi-Level Governance and Public Entrepreneurship**



Source: Keyes, L., & Benavides, A. (2017). Local government adoption of age friendly policies: an integrated model of responsiveness, multi-level governance and public entrepreneurship theories. *Public Administration Quarterly*, 41(1), 149-185.

The following section will illustrate how best practices through innovation (policy entrepreneurship), citizen engagement and intergovernmental cohesion drive effective age-friendly policy adoption and implementation.

### **The Living Labs Model**

Dutilleul states innovation is a joint problem-solving process” requiring integration of expertise and backgrounds geared by collaborative decision-making (Dutilleul et al., 2010). As innovation is an open-ended process, it requires trial and testing rather than a system designed with blueprints hindering the process and influencing (natural) outcomes. Zahariadis argues policymakers do not have the ability to solely address all issues put forth as part of the process. There is limited capability in place for policymakers to “ration their attention” towards limited issues (Zaharaidis, 2007). However, policy entrepreneurship and innovation seize the opportunity and are in better positions to analyze issues for optimal result. Political and policy

entrepreneurs are defined as individuals who “have something to gain by organizing individuals around a central cause. They take a latent group and turn it into an organized group through a sense of purpose” for market-based policy solutions (Keyes & Benavides, 2017). Encouraging political and policy entrepreneurship in local government fosters an ability to “interject innovation to enhance government responsiveness to citizen demands” (Keyes & Benavides, 2017). Therefore, integrating a matrix through collaboration from experts and social actors with technical innovation is the foundation of the Living Labs model. Together, the trifecta approach of contact, communication, and collaboration from the three dimensions provides an analytical framework designed to better develop systematic approaches to innovative policy design. Coined by William J. Mitchell, Living Labs are defined as a model with “living spaces such as building or a city to monitor people’s responses to- or interactions with- innovation (Dutilleul et al., 2010). Through this process, empowering people to age in place is achievable through the Living Labs model. Policy planning can find the inspiration from observed users to monitor the effectiveness of policy implementation activities. Developing innovation emerges from a desired interest of the masses. Drawing upon literature on Living Labs, the model serves various purposes: (1) innovation system comprised of an integrated network built on collaboration and ongoing interaction, (2) monitoring living, social settings integrated with technology or testing, and (3) organizations facilitating network and technological adaptations for service delivery. As AFC initiatives vary in forms of delivery and design, exploring the multifaceted concept of Living Labs is applicable towards interpretation for implementation purposes.

Meadows conceptualizes Living Labs as “places within a complex system where a small shift in one thing can produce big changes in everything” (Meadows, 1999). Integrating a Living Labs model within communities provides an opportunity to strengthen the social capital of a

locality. While many communities have adapted variations to support aging in place, it is time for communities to reconsider the intrinsic and extrinsic benefits of policy planning for AFCs at an earlier stage. As the senior population and urbanization is growing in tandem, proactive solutions provided through the Living Labs approach reframes aging as an opportunity for policy and intervention action.

As an innovation system, the Living Labs model is built on several components driving effective aging-related policy design: Representation, knowledge diffusion, community-business collaboration, assessing the ontology of senior needs and having a setup for ongoing research.

Table 3 showcases the components substantiating Living Labs as an effective AFC design model for local communities to consider:

**Table 3 – Components to Design a Living Lab to support Age-Friendly Community Designs**

<b>Factors Supporting Living Labs</b>	<b>Concept Design Explained</b>
<b>Representation</b>	Co-creation through contact between stakeholders, experts, population, interest groups and government institutions.
<b>Knowledge Diffusion Capabilities</b>	Continuous engagement with seniors for trials or policy design processes with involvement of experts, para-organizational knowledge hubs to support new forms of collaboration and decision-making opportunities.
<b>Community-Business Cross Collaboration</b>	Driving innovation through mutually beneficial partnerships with businesses for cost reduction, funding, resources, research, and experimental service delivery.
<b>Unremitting Aging-related Research</b>	Provides ongoing research opportunities unobstructively.
<b>Assessing the Ontology of Seniors' Needs</b>	Fosters an environment of ongoing action, research, co-engineering, and design for solutions of the complex and diverse set of senior-focused issues.
<b>Social Configuration</b>	Integration of real-life experiences to and through technology and policy and program initiatives.
<b>Senior-Centric/Driven Implementation</b>	Empowering seniors to provide perspective and engage throughout the policy process.

Source: Dutilleul, B. (2010). Unpacking European Living Labs: Analysing Innovation's Social Dimensions. Central European Journal of Public Policy. Volume 4. No.1.

Through the design of a Living Labs model, communities can enhance cross-collaboration and cohesion among all stakeholder groups and public institutions. To alleviate the burdens of finances and resources, Living Labs create opportunities for researchers to engage in unprecedented trials and implementation opportunities in real-time, and with pure data from participants, technology, and through natural interactions. Kviselius states Living Labs provide an opportunity for localities to share the cost of research among businesses, research organizations and agencies that are focused on aging in place (Kviselius et al., 2008). It is stated that this form of social and systematic integration enables “access to complimentary assets, encouragement of transfers of codified knowledge” yielding in a synergetic construct of varying resources and knowledge (Dutilleul et al., 2010). Living Labs are a fairly new phenomena; while many communities have benefited from integrating aspects of their communities to adopt this model, it is important to keep in mind that every community is unique has its own barriers and challenges associated with social, political and economic impediments towards innovation systems such as Living Labs.

### **Productive Engagement**

Gonzales and Morrow-Howell state seniors are expected to live into their eighth decade and require greater opportunities to remain engaged, while making positive contributions to their community (Gonzales & Morrow-Howell, 2009). “Productive engagement is a concept that includes activities (paid or not) that produces goods and services” (Gonzales & Morrow-Howell, 2009). Morrow-Howell states productive engagement creates greater capacities for seniors to develop and enhance aging-related initiatives through positive economic and social contribution efforts (Morrow-Howell, 2003). WHO’s definition of an age-friendly city includes active citizen and social engagement to preserve the well-being of seniors within a community. Leland and

Uchitelle argue as more older adults are leading longer healthier lives, they are capable of being part of the labour force for an extended period as well (Leland & Uchitelle, 2008). Across various health and social agencies, the need for senior-focused engagement continues to rise to better assess the social and economic current and future needs of the aging population.

Literature supporting productive engagement demonstrates the correlation between volunteerism enhancing mental health and a sense of self-efficacy for seniors (Akabas & Kurzaman, 2006). Volunteerism corresponds to the goals of AFCs as it allows seniors and community actors to expand the knowledge base and increase collaboration for effective decision-making. In various communities, enabling seniors to volunteer heightens a sense of belongingness within the community. Morrow-Howell asserts the benefits of volunteering for seniors includes positive psychosocial outcomes such as less depression, enhances quality of life, social inclusion, functional independence and betters mental perception (Morrow-Howell, 2003). Collaboration with volunteer-based programs to encourage civic and community participation among seniors creates opportunities to increase visibility and outreach initiatives to support aging policy designs. However, barriers to employment and volunteerism hinders engagement levels among seniors, increasing the reliance of social insurance programs and health and social costs to society.

While many AFC designs have stressed the importance of civic engagement, very few have considered the benefits sought from productive engagement from seniors. Upon the integration of AFC designs, communities must possess programs and policies aimed at encouraging employment or volunteerism to support outcome-based results. An integrated effort of including civic engagement in municipal mission statements, strategic plans and designing programs and policies enabling volunteerism, evaluation and employment can progress a community's desire towards a full productive engagement model for an effective AFC implementation (Gonzales & Morrow-

Howell, 2009). Older adults heavily influence the economic and social design of a society through productive work, caregiving, and volunteerism. Enhancing the capabilities of these areas requires a systematic development approach to address the demanding needs of aging-related policy and intervention models. Policies aimed at facilitating participation of seniors and policies focused on capacity-building can benefit from the perspectives and experiences seniors bring to the table. As the population continues to age and demands for health and social costs continue to rise, leveraging productive engagement efforts to strengthen policy and program intervention models is beneficial towards designing an AFC.

### **Integration of AFC Commitments in Official Municipal Plans**

Although driving AFC initiatives requires a multifaceted approach of multisectoral integration and engagement. Local government agencies can drive their own policy levers to support AFCs through strategic planning. As Bardhan states, decentralization of aging-related services provides municipalities with better autonomy and decision-making abilities to address changes and meet the demands of their community efficiently (Bardhan, 2002). Formal resolutions and devising official plans have become common actions municipalities have taken towards their commitment to age-friendliness. To accomplish an effective AFC plan, localities must realize to address the needs of seniors requires a systematic approach. WHO outlines:

“No government or ministry can achieve these outcomes working in isolation. It takes a community to work together to make environments age-friendly, harnessing innovation and imagination from all sectors and actors” (WHO, 2018).

As many communities begin to shift their attention towards the tidal wave caused by the aging population, very few have incorporated concrete visions as part of their official plans. According to the Members of the Large Urban Mayor’s Caucus of Ontario (LUMCO) and as part of AMO, it has encouraged 25 out of 27 cities to enhance its commitments towards integrating aging into their

official plans (Miller, 2017). Municipal Official Plans are revised every five years through a new council cycle and possess the ability to present a community's AFC priority to be reported through this endeavour. According to Miller, incorporating AFCs into the planning process allows municipal leaders to assess critical needs for the aging population through to be strengthened in three different domains: (1) the city-wide impact, (2) the neighborhood impact, (3) resident impact (Miller, 2017). Amendments to the strategic plan and vision of an official plan acknowledges demographic shifts within the community. Incorporation of an AFC strategy into such planning endeavours reinforces the need for a municipality to continue assessing the overall city design, neighborhood walkability and environmental and transportation plans to support its aging population.

Recognizing a full policy implementation takes time, municipalities are in a good position to infuse incremental policy changes to strengthen various elements of the WHO AFC guideline over a period. Improvements to safety and pedestrian crosswalks, more benches, improvements to municipal communication tools and intergenerational recreation and library facilities are examples of incremental changes to advance aging in place initiatives within a local community (Plouffe & Kalache, 2011). As land-use and transportation plans for communities are conducted in secondary plans for reliability and assessment, incorporating AFC lenses to follow suit as part of secondary plan reviews supports priority setting and a shift towards change. As Miller states: "it takes time to effect physical change – by identifying priority areas increases the likelihood residents can age in place" and have confidence in their government to support their evolving needs (Miller, 2017). Incremental policymaking establishes a sense of comprehensive rationality – "the ability to identify problems, consider solutions and make choices" (Cairney, 2011). Literature in support of incremental policy changes states: "smaller number of policy choices

diverge incrementally from the status quo or trial and error” (Cairney, 2011). Incorporating AFC designs through incremental changes creates a system for change through a built environment, investment, capacity-building, and assessment and evaluation of its overall implementation.

### **Barriers to Developing Age-Friendly Communities**

Despite the literature emphasizing the impetus for AFC policy and interventions, it is critical to understand the implications associated with pioneering aging-related initiatives. Given the margins associated with financial flexibility, capacity and resources, municipalities are faced with challenges balancing quality with innovation to deliver effective policy and intervention models to support community issues.

Aging in place can become difficult for seniors with limited housing or service delivery models in place. Miller suggests as “aging is subject to lead to an increased demand of home-based delivery” of health and social services, recalibrating seniors as a homogenous group is needed to accommodate the needs of the aging population (Miller, 2017). As the demographics of seniors was relatively low in the 1980s, policy planning did not consider the need for continuous changes to urban planning development to accommodate the evolving aging population (Miller, 2017). Through the literature, the following obstacles (past and present), have been identified as barriers to the development of a successful AFC: (1) fiscal challenges, (2) interdepartmental confusion for service delivery ownership, (3) synchronicity with other planning initiatives, and (4) future-oriented planning for present day challenges.

Miller states a momentum shift from urban growth and population aging will find municipalities struggling to effectively transition towards an age-friendly “built-out state in” community; while experiencing the already increased costs associated with health and social

service delivery for seniors (Miller, 2017). Beyond planning and development challenges, coordinating efforts interdepartmentally to adopt age-friendliness into their mandate may prevent staff from achieving effective policy outcomes given a restraint on limited resources. Literature support engagement and collaboration has highlighted the desire for continuous improvement, and managing change requires a shared vision and dedication across a municipal organization. As Stephen Golant states “AFCs should avoid promoting over-ambitious agendas that overlap with pre-existing housing, service and care programs” to avoid confusion and backlog in priority setting (Golant, 2014). AFC designs are argued to impede other planning initiatives. According to Miller, developing a barrier-free development has been entrenched into municipal standards for streets, roadways, parks and building codes. However, to support a built-in environment including outdoor spaces, buildings, transportation units and housing bring to light other urban issues such as the quality of green and natural spaces, affordable choices for transit options, neighborhood-scale and site-specific designs, signage, and the maintenance of pedestrian roadways. While these initiatives have been broadly outlined through WHO’S AFC guideline, an effective integration of the policy and service delivery model is limited because of a lack of clarity related to scale (Miller, 2017). As municipal planning is entrenched into future planning, the process requires policies, procedures and planning to reflect the evolving nature of the community with impacts and incremental changes in place to build environments to support all residents. Although the AFC design is aimed to build sustainable communities to support future needs, many aging strategies and quality of life initiatives are centered around the realities of a community’s current conditions. This means an emphasis is placed on the physical, health and social needs related to implementation of enhancements to the physical environment to support aging adults remain independent and mobile. Longer-term initiatives such as retrofitting homes

and neighborhoods to become age-friendly is subject for implementation but requires both support and time from the broader community and allied partners to accomplish such elaborate and innovative goals.

## **CONCLUSION**

While the adverse implications from aging has shown to have significant health and social costs to society, this research has demonstrated how it can be mitigated through proactive policy planning at the local level. As the expansion of the age-friendly movement continues to garner worldwide attention, the time has come for policymakers to create opportunities offering a “new design vocabulary to redefine age-friendly initiatives and devise creative methods for seniors which includes new insights that are instrumental to support effective and sustainable [decision-making]” (Handler et al., 2018). Through the research, it is recommended that local policymakers evaluate current policy and service delivery models to see if they incorporate a senior-focused lens to the implementation. Many communities around the world are engaging in AFC initiatives and may already have established programs and policies in place to support seniors but have labelled it differently. By rebranding their initiatives to be considered as AFCs would generate more support for cohesion to support their seniors age in place. As environmental gerontology suggests, as people age, they become increasingly attached to their place of residence, neighborhood and “more sensitive and vulnerable to their social and physical environment” (Iecovich, 2014). This notion emphasizes how belongingness empowers aging in place in two areas: (1) Enables belongingness through the physical environment by “living somewhere for longer periods of time and developing a sense of environmental control through idiosyncratic rhythm and routine and, (2) Social belongingness related to developing social and

communal relationships through collaboration because of the attachment to the place (Iecovich, 2014).

The global policy response to aging and urbanization has enabled communities worldwide to adopt AFCIs to strengthen neighborhood resiliency for their local communities. Causes for concerns related to AFC resides in competing policies and overlooking trends associated with a shift in demographics. To support an effective change towards the golden years, it is vital communities improve the coordination and communication between different levels of government and look to innovative solutions to accommodate to the changing needs of seniors. WHO's "global network of support and dialogue" through the development of the Age-Friendly Communities Guide uses the eight policy domains" to provide a framework for cities to tweak and adopt aging-related initiatives to support aging in place (Rémillard-Boilard, 2018). Lee states, policymaking is a trained art - capable of "identifying and working with phenomena that others find too ephemeral, imaginative and unstable for serious research" and can reframe ideas to move initiatives forward (Lee, 2012). Through the encouragement of critical reflection "beyond the disciplinary boundaries" of policymaking, devising intervention which enables a flow of input, knowledge and resources to be shared between various actors creates opportunities to challenge and enhance the development of AFCs (Handler et al., 2018).

Through this collaborative approach, discussions in support of age-friendly communities empowers proactive policy planning to take place. The world has collectively shifted its priorities towards the age-friendly movements because of increased urbanization and population aging. To strengthen the effectiveness of aging initiatives, municipalities must bolster their policy design processes to ensure age-friendly designs are done with consistency and co-productive decision-making. Drawing upon the expertise from different levels of government

and community stakeholders helps ensure policies are equitable and showcase promise for effective implementation. Collaboration of this magnitude ensures seniors have a right to contribute to the decisions shaping their communities. Buffel explains co-production of the AFC design instils “empowerment into practice where working with communities and residents offer greater control over the environment” (Buffel et al., 2018) Not to mention, multi-sectoral partnerships ensure consistency through implementation and makes the AFCIs transparent and widespread particularly through participatory governance. As a key barrier towards implementing an effective AFC resides in funding and resources, the research has showcased marketing AFC initiatives to various stakeholders such as different levels of government and funding agents to support the vision for change for a shared cause. As Isaacs states: “Design for the young, and you exclude the old – but design for the old and you include everyone” (Miller et al., 2006).

The movement towards AFCs has achieved significant progress within a short amount of time (Buffel et al., 2018). Through the WHOS’s Guideline and global efforts to reinforce the impacts of urbanization and aging has created a sense of urgency – making aging a priority. However, the lack of documentation to illustrate effectiveness of intervention is a gap identified through the literature. The success of implementation in Quebec, Ontario and British Columbia have shown how collaborative-decision making has provided early indication of success, but a long-term evaluation will be needed to identify outcomes to track changes and impacts to the community. Furthermore, evaluation will need to be considered through these case studies to demonstrate how active aging has enhanced the vitality of these communities as a whole. A spatial, open-ended, innovative, and integrated lens helps foster a sense of pride and belongingness for both policy-designing and community members. The robust movement from

communities around the world has proven there is an appetite for age-friendliness. By drawing upon the importance of the values brought forth by the ‘community,’ and the environment which enables ‘community togetherness,’ helps enrich the policymaking process to support AFCs as well as broaden the repertoire of co-production.

In sum, this research has provided new directions to support AFCs and age-friendly policymaking to support seniors age in place within their local communities. While this research has been exploratory in nature, it was designed to recognize how approaches and tools (collaboration with communities, innovation and technology and intergovernmental support) are relevant to support aging policy designs in local government. The findings showcase that while *many* urban communities are spearheading aging initiatives, it leads to question why *all* communities are not actively incorporating and enhancing their age-friendly lenses into their policy design. The success of most localized policymaking emerges because of policy decisions foregoing the cause and effect of its implementation. To ensure there is sound development between planned outputs and actual outcomes, collaboration through decision-making is needed among and between government agencies, citizens, and innovation policy. Participatory decision-making asserts positive democracy and achieves better outcomes for effectiveness. This level of implementation incorporates both a ‘top-down’ and ‘bottom-up’ approach for input and knowledge transfer that captures the essence of the issue in its totality. The impacts of collaboration through this framework creates better quality policy programs, bridges budgetary concerns, and accounts for unforeseen externalities and spillover effects. As municipalities continue to experience the pressures of healthcare service delivery, while also balancing a rapidly growing aging population, fostering collaboration among different agents with similar mandates creates a better network to share insights and opportunities for market-based solutions

to drive innovation policy and interventions for a shared purpose. As the age-old saying goes, if you want to go fast go alone, but if you want to go far, go together.

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