A Canadian Study of Young Adults' Suburban Ways of Living

by

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A thesis
presented to the University of Waterloo
in fulfillment of the
thesis requirement for the degree of
Master of Environmental Studies
in
Planning

Waterloo, Ontario, Canada, 2019

Author's Declaration

This thesis consists of material all of which I authored or co-authored: See Statement of Contributions included in this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Statement of Contributions

The contents of this thesis were primarily authored by Zoe Sotirakos. Dr. Markus Moos contributed to the content creation and editing in Chapter 2 - Manuscript 1: The Prevalence of Suburban Ways of living Among Young Adults: A Canadian Case Study and the content ideas of Chapter 3 - Manuscript 2: Are young adults still suburbanizing?

Abstract

This thesis contributes to a better understanding of how young adults are living, in regard to the suburban and urban nature of their lifestyles. Specifically, it explores young adults' ways of living in Canada and are based on Moos and Mendez's (2015) operationalization of suburban ways of living, rather than looking at suburbs as specific places. The focus of this research is on how suburban the young adult population is according to two indicators: 1) housing types and 2) commute patterns. The purpose of this research is to measure the share of young adults living suburban ways of life over time. The research question to be addressed is how suburban are young adults' ways of living in Canada after decades of intensification and downtown revitalization in major metropolitan areas.

The thesis also contests the many studies that elaborate on the traditional motion of young adults leaving urban areas to suburban areas. The trends of this research show the slower, or delayed progression to a suburban lifestyle in major census metropolitan areas of Canada. This is an important consideration for the social consequences of perceived gains of "sustainability-as-density", as explored in this research and based on the work of Quastel et al. (2012). Various local policies should aim to facilitate spaces to satisfy the changing patterns of the young adult population and ensure places are formed with the capacity to accommodate urban ways of living for extended periods of time.

Overall, the research objectives are to: a) explore how young adults live in terms of housing type and commute mode; b) understand the differences in young adult populations in large metropolitan areas; c) investigate the trends over time.

Acknowledgements

I would like to thank Dr. Markus Moos whose continuous support throughout this process has made it so enjoyable and rewarding. His guidance on all matters academically and personally are greatly appreciated. I would like to thank my committee member, Dr. Pierre Filion for his feedback, comments and constant encouragement. And I would like to thank Dr. Martine August who brought a fresh perspective to this research and thoughtful comments.

Thanks to the support of many kind, patience and hard-working friends at Waterloo, the course-work, research, writing and editing was a smooth process filled with many laughs. I am lucky to say thank you to the childhood friends who have been there for me from the beginning. And a heartfelt thank you to Matt Jones who was a constant source of coffee, comfort and motivation.

Most importantly, thank you to my mom and dad who believed in me every-day on this journey. They have both been so unconditional in their love and support to get me to where I am today. I am so thankful for the many moves, phone calls and facetimes that kept me on track. I truly would not be half the person I am without them behind me.

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Chapter 1: Introduction

1.1 Introduction

Young adult populations entering the housing market have the opportunity to shape the residential landscape and patterns. Trends over time show the young adults are living in central areas, and downtown cores in larger numbers (Moos et al., 2017). The question remains as to whether they will suburbanize as they age. The focus of this research is on how suburban the lifestyles of the young adult population is according to two indicators: 1) housing types and 2) commute patterns. The research question to be addressed is how suburban are young adults' ways of living in Canada after decades of intensification and downtown revitalization in major metropolitan areas.

The young adults are defined, for the purposes of this research, as those aged 25 to 34 years old. This age range is selected given this is a time identified as most common for young adults to be entering the job and housing market for the first time. Further, the age range is consistent with prior research that informs the thesis (Moos et al., 2017). Additionally, major lifestyle transitions regarding marital status from single to married, and family size from two to three or more, occur during this time (Grant & Scott, 2011; Morrow-Jones & Wenning, 2005). Canada offers a growing variety of lifestyle options for young adults based on housing type and transportation modes (Harris 2004; Phelps, 2015). The large size of the young adult cohorts impacts the residual effects on housing and transportation infrastructure in many metropolitan regions.

The idea of suburbanism is based in literature by Walks' (2013) and through his interpretation and adaptation of Lefebvre's understanding of urbanism. According to Walk's, suburbanisms take form through several dimensions, with existence in both urban and suburban places. Complementary to these ideas, Moos and Mendez (2015) define suburbanisms as a way of living that is transferable over time and space, therefore without binds to the geographic and stereotypical boundaries that are commonly associated with suburbs as places (Moos & Mendez, 2015). A core concept of Moos and Mendez's research is specifically, how suburbanisms are defined and operationalized as a way of living rather than as a geographic place. This thesis studies how suburban the lifestyles of young adults are, based on Moos and Mendez's (2015) operationalization of suburban ways of living, rather than looking at suburbs as specific places. This thesis aims to build upon the suburbanisms previously theorized and re-theorized by Lefebvre, Walks and Moos and Mendez.

As of 2017, Toronto, Montreal and Vancouver were home to more than one third of Canada's population (Ipsum, 2017). With Canada's increasing population size, coupled with a majority of individual's attraction to central cities, the population in larger cities is growing while some smaller cities are seeing a decline in population (Statistics Canada, 2015). Municipal government efforts across North America are marketing central, urban cities to young adults; and based on recent trends, young adults appear to be attracted to and living in high numbers in urban areas (Kipfer & Keil, 2002; Moos, 2017). This thesis research works with data that is not definitive or conclusive to state that preference and attraction of young adult populations to urban areas is the cause of the high numbers, rather the thesis acknowledges the many patterns in the data that

can include a range of economic, social and other conditions.

The three metropolitan areas of Toronto, Montreal and Vancouver have large young adult populations and therefore can offer insight into the variety and diversity in young adult's ways of living. The housing landscape in Toronto, Montreal and Vancouver is unique based on density, sprawl and cost of living (Moos, 2017). Vancouver has seemingly reversed "North America's post-Second World War romance with the suburbs" and the replaced the suburbs with lively urban areas – commonly, transit-rich, and where young adults have been observed to cluster (Berelowitz, 2010, p. 220; Moos, 2014).

According to the Canadian Mortgage and Housing Corporation (CMHC), Montreal's housing construction and sales are booming – with more condominiums being built and a decreasing inventory of single family houses, the prices for buying and renting will most likely continue to rise (Tomkinson, 2018).

In Toronto, housing affordability is a crisis which has manifested in intensity, given the high demand, growth in population and low vacancy rates (Haines & Aird, 2018). Young adults looking to live somewhere other than their parent's homes, face challenges of affordability and availability in all three cities (Atkinson 2004, Moos 2014).

The housing trends in Toronto, Montreal and Vancouver directly impact the young adults' suburban ways of living by potentially altering the traditional housing trends of transitioning from urban to suburban environments. Many of the young adults are living centrally overall, but as the young adults age, we expect their inclination for urban ways to living to continue. Between Toronto, Montreal and Vancouver, the way young adults live will likely differ based on the locations housing stock, availability and

cost. It is acknowledged social and economic factors which influence young adult ways of living, are not considered as indicators in this research. We expect suburbanization to occur as the young adult population ages, but availability of housing options outside the city, and amenities provided in the urban cores may change the location young adults are found as they age.

This thesis includes two manuscripts developed with the use of Statistics Canada Census data. Each manuscript aims to gauge the share of young adults living suburban ways of life. Suburban ways of living are operationalized using indicators of housing type and commute mode based on prior research by Moos & Mendez (2015). The first manuscript analyzes young adults living suburban ways of life in Canada as a whole. The second manuscript examines young adults suburbanisms' through a metropolitan comparison of Toronto, Vancouver and Montreal.

The findings of both manuscripts have implications for planning for sustainability given the growing share of young adults living in higher density housing and commuting by modes other than the car. These lifestyles can be associated with lower environmental impact lifestyles. However, the aggregate impact may not be sufficient to achieve substantial sustainability gains, as many more continue to live suburban ways of life. This research demonstrates some patterns in young adults' ways of living that may have further social consequences related to gentrification and displacement.

The method for both manuscripts is a cross-tabulation and cohort study, which is a form of longitudinal research. Each manuscript uses intervals of census data and samples a cohort of people who share the defining characteristic of age. The analysis of each cohort is repeated for a selection of census years between 1996 to 2011. The

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cross-tabulation of the data is beneficial to understand the relationship between the two to three variables and the categorical data. Key findings show a declining share of young adults living suburban ways of life in Canada, specifically within the three largest cities.

1.2 Study Purpose and Research Questions

The purpose of this research is to measure the share of young adults living suburban ways of life over time. It is important to study young adults as they are entering the housing market in mass numbers. It is important to planners, policy professionals and academics to understand how young adults will impact the housing market in the future. My research asks where and how the shares of young adult living suburban ways of lives has changed over time. This is done through examining quantitative descriptive data from Statistics Canada Censuses on young adults. The overall research objectives are to: a) explore how young adults live in terms of housing type and commute mode; b) understand the differences in young adult populations in large metropolitan areas; c) investigate the trends over time.

The first manuscript asks about Canada as a whole, and what share of young adults compared to the total population, are living suburban lifestyles. The second manuscript focuses on data from the Census Metropolitan Areas (CMA) of Toronto, Montreal and Vancouver, which have the three largest populations in Canada. The second manuscript addresses three research questions: First, what is the share of each CMA's total population that is living suburban ways of life? Second, what is the share of each CMA's young adult population living suburban ways of life? And third, how have

the shares of the young adult's population living suburban ways of life changed over 5-year periods as the cohorts aged?

1.3 Manuscript Approach

The thesis is produced as described above, by way of two manuscripts. The manuscripts aim to build on one another by starting the study of the young adult ways of living on national scale in the first manuscript, and understanding how suburban young adults' ways of living are in comparison to the total population. This manuscript establishes overall tendencies and variations between the young adult lifestyles at national scale. The findings demonstrate a pattern of young adults to remain in lifestyles that rely on automobiles and commonly imply a higher environmental impact. The manuscript incorporates and reflects on the concept of sustainability-as-density and continued change in young adults' lifestyles from urban to suburban continuing on a national scale.

The second manuscript aims to build on the existing findings of the first manuscript, while repeating the same young adult age range from 25 to 34 years old. The second manuscript similarity uses a baseline analysis of the young adult and total population of ways of living, but identifies three key study areas. The three largest census metropolitan areas of Toronto, Montreal and Vancouver are used for a comprehensive analysis of the nation-wide information on young adults' ways of living uncovered in the first manuscript. We have identified and implied suburbs are not homogenous places, and found that many young adults are still living suburban ways of life, in the first manuscript and at a nation-wide scale. The three census metropolitan areas facilitate further investigation into the ways of living by young adults, in areas with

vast intensification. Overall, the second manuscript looks at how suburban young adults' ways of living are comparatively between three census metropolitan area of Montreal, Toronto and Vancouver.

The manuscripts use a similar methodological approach with the creation of categories through repeated variables. The difference is in the first manuscript, three variables of dwelling type, automobile use and tenure to create eight categories and in the second manuscript, two variables of dwelling type and automobile use generate four categories. The variables have been selected based on prior findings that establish dwelling type and automobile use as key indicators of ways of living. The categories of organized in a similar fashion to identify suburban and urban ways of living on a spectrum. The spectrum of categories is intended to create clear extremes of the categories, which are in-turn a by-product of the data. The scope of the manuscripts progresses to be scaled down methodologically, resulting in concentrated findings of young adult's ways of living in Manuscript 2.

Table 1: Manuscript Comparative Table

	Manuscript 1	**Manuscript 2**
Object of Study	The scope of the study was broad, at a nationwide scale, to examine the young adult and total populations suburban and urban ways of living across Canada.	The scope of the study was narrowed to focus on the young adult population and total population comparatively, in three of Canada's largest Census Metropolitan Areas: Toronto, Montreal and Vancouver.

Methods	The method used was a cohort study and longitudinal analysis of Statistics Canada census data from 1996, 2001, 2006 and 2011 from all of Canada inclusively. Eight categories were created using three variables of tenure, dwelling type and automobile use.	The method used was a cohort study employing Statistics Canada Census data from 1996, 2001, 2006 and 2011 on only Toronto, Montreal and Vancouver. Four categories were created using two variables of dwelling type and automobile use.
Findings	Many policies on complete communities and densification are reflected in young adults' location and housing patterns identified.	The data shows a pattern of many young adults are remaining in urban environments for an extended period of time. The transition or suburbanization is not as monotonous, as observed by previous generations.
	A decreasing share of young adults are living suburban ways of life, but there is still a large, majority portion of the young adult population living high-environment impact lifestyles, where many rely on cars.	A decreasing share of young adults are shifting to suburban ways of living as they age in Toronto, Montreal and Vancouver.
	Many young adults are living in suburbs with higher density, renting and less automobile use – implying suburbs are not a homogenous place.	The findings demonstrate how the housing landscape can have a large impact on how suburban young adult lifestyles are and/or transition to be.

	Overall, a slow change away from suburbanization is observed across the young adult population in Canada.	Overall, it is evident from the patterns in the data that suburbanization still occurs, while there is a general trend of urban ways of living, for longer periods of time. This is emphasized and exaggerated by young adult populations in Toronto, Montreal and Vancouver.

1.4 Thesis Outline

Chapter 2 is the first manuscript of the thesis which provides an analysis of the share of young adult's suburban ways of living. The paper considers the hypothesis of density-as-sustainability to value the differences between urban and suburban lifestyles in Canada. The analysis uses nation-wide census data to measure and track the young adult population cohort.

Chapter 3 is the second manuscript that focuses on the metropolitan areas of Toronto, Montreal and Vancouver to measure and analyze young adults and the total population living suburban ways of life. The paper explores the differences between young adult cohorts in Toronto, Montreal and Vancouver as well as considering the housing landscape of each metropolitan area.

Chapter 4 considers the findings presented in each manuscript within the larger context of housing trends in Canada. The chapter explores how the research findings contribute to the literature on young adult lifestyles. Further, it challenges the common conception urban-centric young adults and hypothesises on the lifestyle transitions of the Millennial generation. Future research and policy recommendations are explored to

enhance further studies. Further, the conclusion provides a summary of the key findings

and how they might be insightful to practicing planners and academics.

Chapter 2

Manuscript 1: The Prevalence of Suburban Ways of Living Among Young Adults: A Canadian Case Study

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2.1 Overview

This paper asks about young adults' ways of living in Canada. It uses prior established indicators of suburban ways of living to measure the changes in the share of young adults living urban versus suburban lives. Suburban ways of living are operationalized using variables on owning a single-detached dwelling and commuting to work by automobile from the census. Findings illustrate that young adults have become less likely to live suburban lives from 1996 to 2016. However, suburban ways of living remain the most common among young adults today at the national scale. The findings have implications for planning for sustainability: A growing share of young adults are living in higher density housing and commuting by modes other than the car, which are associated with lower environmental impact lifestyles. However, the aggregate impact may not be sufficient to achieve substantial sustainability gains, as many more continue to live suburban ways of life.

2.2 Introduction

This paper engages with two critical contemporary issues in planning: The topic of changing young adult housing and transport patterns, and the sustainability of cities. There is strong evidence that the most recent cohort of young adults, better known as the Millennial generation, is more likely to live in urban as opposed to suburban locations in the US and Canada (Cortright, 2014). These shifts in location patterns are often assumed to be associated with higher density living and less car-oriented transportation patterns. The sustainability of cities is believed to be positively impacted by these changes as they are known to reduce sprawl and transportation related carbon emissions (Brewer & Grant, 2015).

Seemingly a positive development, supporting evidence may not be complete. The prior studies have rarely considered the combined changes in housing and transportation characteristics of young adults at the national scale. The studies have assumed a more central, urban location among the young adults living in metropolitan areas translates into overall sustainability gains. It is important to identify and understand the aggregate changes in young adults' lifestyles. Given the large size of the Millennial generation, their level of impact on development patterns has the potential to be substantial. While research on Millennial housing and location is becoming more prevalent, few have asked specifically about young adult ways of living at the national scale (Badger, 2014; Karsten, 2007; Townshend & Walker, 2010).

In prior studies of the urban and suburban, these concepts are often defined as a binary using census or political definitions. A study by Airgood-Obrycki and Rieger analyzes three types of suburban definitions including census-convenient,

suburbanisms and typology definitions, in a North American context (Airgood-Orbyki & Rieger, 2019). The definition of suburbs chosen should be descriptive, as recommended by Forysth (2012), and can influence the interpretation of a study. The suburbs can be defined solely by geography, using geopolitical boundaries or by suburbanisms being ways of life that are present across metropolitan areas (Airgood-Orbkyi & Rieger, 2019; Forysth, 2012). The definition of suburbanisms utilized for this research is suburbanisms, as operationalized from Moos & Mendez's (2015) operationalization of Walks (2013) suburbanisms theory.

These census or political definitions designate the central city as the 'urban' and remainder of the metropolitan areas as the 'suburban'. This is problematic for at least three reasons. First, it overlooks the changing character and form of many North American suburbs, which have experienced growing diversity in terms of housing types, tenures, and availability of public transit, for instance (Meligrana & Skaburskis, 2005; Moos, 2014). Some young adults living in suburbs may well be living in higher or at least as high-density housing as some in urban locations.

Second, it assumes that all locations in urban settings are equal in terms of how people live their lives, overlooking the existence of lower density, auto-oriented neighbourhoods in central cities. Third, young adults living outside of major metropolitan centers are commonly not included, leaving a gap in knowledge about how young adults as a total cohort are shaping residential and transport patterns in a country as a whole.

Our research thus asks about the share of young adults that is actually living suburban lifestyles, focusing on Canada as a case study. We follow prior research on suburbanisms as a way of living to operationalize suburban lifestyles as consisting of

single-detached housing ownership and car-oriented commute patterns (Moos &
Mendez, 2015). Instead of using an *a priori* place-based delineation of suburbs, we
identify the lifestyles generally associated with suburban living in North America that are
viewed as problematic from a sustainability perspective.

Following methods from our prior research, we operationalize suburban lifestyles
based on tenure, dwelling type, and car use, creating eight categories ranging from the
most urban (renting, multiple dwelling, non-automobile based commute) to the most
suburban (ownership, single-detached dwelling, automobile-based commute) (Moos &
Mendez, 2015). The variables also originate from prior research by Moos & Mendez
which created neighbourhood types based on the presence of three measureable
aspects of suburbanism including single-family dwelling occupancy, homeownership,
and automobile commuting (Moos & Mendez, 2015). Commute mode, home-ownership
and dwelling type are the most common, widely defined and utilized variables in the
literature on North American suburbs, and therefore transferable and applicable to this
thesis. We conduct this analysis using nation-wide census data from Statistics Canada
in 1996, 2006 and 2011 (also see Moos & Walter-Joseph, 2017).

Our findings indicate that the share of young adults in the most urban category is
increasing. Although still the most dominant lifestyle, a decreasing share of young
adults owns a detached dwelling with an automobile-based commute. An increasing
share owns an attached dwelling with a non-automobile-based commute. The findings
illustrate that the growing embrace of urban lifestyles by young adults is observable
even at the national scale but that suburban ways of living still dominate. We

acknowledge that these patterns in the data are overarching, and that a wide range of

influencing factors such economic conditions and built form may be at play.

2.3 Literature Review

2.3.1 From Suburb to Suburbanism

Defining the suburbs is no easy feat. The suburbs are a nebulous concept. There

is no one definition. As Forsyth (2012) rightly argues, defining suburbs is about "more

than just an issue of semantics" (p. 270). How we define suburbs influences how they

are viewed, she argues, and how we see their potential for change. Forsyth outlines

how definitions of suburbs vary greatly in the literature ranging from place-specific

definitions to ones based on housing or transportation patterns, road configurations,

period of development, and other elements of the built form.

In North American scholarship, it is common to view the suburbs as being those

areas outside of the central city. The central city is delineated either using a political

definition or an initial period of development after which areas are considered 'outside'

the urban (Sorensen & Hess, 2015). Suburbs are thus defined, in these accounts, by

their relative newness and/or their physical distance from a historic core.

Here we follow the axiom that definitions are never correct but useful in particular

instances. This means that a plurality of definitions is not necessarily problematic as

long as they are replicable and clearly justified in relation to the purpose of the study.

Further, Airgood-Obrycki and Rieger expand on the suburban variety in definitions and

demonstrate how the definition can "shape our understanding of suburban space and

suburban change" (Airgood-Obrycki & Rieger, 2019). The definition of suburbanism

utilizes in our research flows into the suburban-urban continuum rather than the place-

based definitions. This further contributes to our categorical organization of suburban and urban lifestyles on the spectrum describes in the methods section.

In the case of our research, we are studying whether young adults are more or less likely to reside in suburbs over time. We are interested in this question because suburban lifestyles have been associated with negative implications for sustainability (Dale & Newman, 2009 & Grant & Scott, 2011). Therefore, it is important to know how prevalent this lifestyle is among a particular population. To measure prevalence, however, we first need to define what we mean by a suburban lifestyle and which aspects of it are deemed more or less sustainable.

2.3.2 Suburbanisms as a way of living

We cannot assume that suburbs defined as places inherently encompass a homogeneous lifestyle. Thus, instead of focusing on suburbs as places, we consider people's ways of living, or suburbanisms. Conceptualizing suburbanism as a particular way of living and experience in space acknowledges the socially constructed notion of spatial concepts (Harris & Larkham, 1999). We build on Alan Walks' important extension of Lefebvre's framing of urbanism to the suburban. Walks' (2013) establishes a framework for thinking about North American suburbanism, and its plurals (or isms), along several different dimensions such as centrality (power and agglomeration), difference (juxtaposition and social difference), and functionality (automobility and domesticity) (p. 1479). These dimensions are not mutually exclusive but rather intersect in various ways to produce a plurality of suburban ways of living.

Moos and Mendez (2015) operationalized three of Walks' dimensions of suburbanisms and measure their geography and prevalence empirically: Social

difference, auto-mobility, and domesticity. They argue that in North America, suburban

ways of living are tightly bound up with ideas of homeownership, the single-detached

home, and car ownership/use. Their work showed that these ways of living do in fact

correspond to a large extent with place-based definitions of suburbs that characterize

them as the low-density residential areas surrounding the central city. They also

showed, however, that these dimensions intersect in various ways to produce suburban

ways of living in both urban and suburban places, as well as urban ways of living in both

suburban and urban places (also see Moos & Kramer 2012; Moos & Walter-Joseph,

2017). The concept of suburbanisms emphasizes the measurable variables that are

fluid over various places.

This means that a suburban lifestyle can exist across boundaries of the

traditional distinctions of place. A common characteristic of tenure and shared values

may form a community that reflects a suburbanism in a non-traditional, suburban setting

(McGinn, 2013). The experience that individuals have is based on many elements

including "location (Turcotte, 2008), built form (Forsyth et al., 2007), transportation

infrastructure (Flint, 2006), activity (Duany et al., 2000) and social, cultural, and political

features (Beauregard, 2006; Hayden, 2003; Teaford, 2008)" (Moos & Mendez, 2015, p.

1868).

2.3.3 (Sub)Urban Sustainability

While there are potentially many ways to achieve greater sustainability in

suburban settings (Dale & Newman, 2009; Gibbs, 1997; Quastel et al., 2012), we focus

on the most common approach in planning, which has been to urbanize the suburbs.

The first definition of sustainability is often attributed to the United Nations Brundtland Commission in 1987. This definition emphasized the urgency to balance the needs of current and future generations, as well the imperative of balancing economic and social needs with environmental ones (Keeble, 1988). While inherently broad, the definition became more specific as it was applied in particular contexts.

In the realm of planning, it was arguably the works of Newman and Kenworthy (1999) that gave sustainability its particular bent. They argued that higher density, urban environments were associated with lower automobile use. Their work was extended over the years to measure these effects at various scales and in various places, more generally associating higher density urban living with lower carbon emissions and reduced sprawl (Newman & Kenworthy, 1999).

The suburbs were increasingly characterized as inherently unsustainable due to their low development densities and high reliance on the automobile. Solutions to suburban sustainability often emphasize the need to build housing at higher densities and provide alternative modes of transport (Filion, 2001; Quastel, Moos & Lynch, 2012). Quastel et al. (2012) coin this approach "sustainability-as-density", and demonstrates the ways in which it has become complicit in the displacement of lower income earners through gentrification of walkable, transit-rich areas.

Although ripe with stereotypes and contradictions, an urban way of living has thus effectively been characterized as more sustainable than a suburban one in planning discourse. Without trying to examine the limits of this conceptualization, we operationalize sustainability in this manner.

2.3.4 Young Adults and (Sub)Urban Lifestyles

Understanding societal change is strongly connected to the dynamic changes of the young adult cohort. Birth cohorts embody coherence and continuity according to Ryder (1985) and the societal experience of cohorts is often similar. Although no exact age range exists, young adults are often defined as those 25 to 34 years old (Moos, 2012).

The age range is chosen partly as a matter of convenience based on its match to census age groupings, but also, because it corresponds to the age range where young people are increasingly making their first, more permanent decisions about where to work and live. The pursuit of post-secondary education by an increasingly number of people means the young adult cohort is in school for longer. This delays the decisions regarding housing type, location and family-starting or childbearing.

Among North American young adults, a dominant trend is the increasing urbanization, resulting in a youthification of central city neighbourhoods (Moos, 2016). The evidence shows that young adults are embracing the city-dwelling, urban lifestyle more than preceding generations (Smith & Hubbard, 2014; Moos, 2014). High-density, attached dwellings have become more popular amongst young adults entering the housing market. In the past, the low-density detached dwellings were more commonly preferred (Moos et al., 2015; Unsworth & Nathan, 2006).

The urban lifestyle allows for access to amenities, work and leisure to be within a close radius of home. Young adult's preferences for residential locations includes walkability and public transit access as many more have become aware of the negative environmental impacts of automobile use (Badger, 2014).

In this context, even young adult suburbanites may seek suburbs with greater options of tenures, densities, and transit availability (Moos & Skaburskis, 2008). The young adult populations in Canada are converging in high-density neighbourhoods within close proximity to work as well as social conveniences (Karsten, 2007). There has also been a decline in the number of driver's licenses held by young adults (Badger, 2014; Moos, 2014). The impact of an increasing share of young adults residing in central city neighbourhoods on aggregate location patterns remains largely unknown.

2.4 Methods

The analysis in this paper aims to uncover and compare the shares of young adults living urban versus suburban lifestyles over time in Canada. Knowledge of the differences in shares of young adults living various lifestyles will contribute to the wider body of literature on understanding young adult location and commute patterns. The empirical analysis sheds light on the existence and extent of suburban versus urban ways of living.

The first methodological decision made concerns the operationalization of urban versus suburban ways of living. Building on the work by Walks (2013), we examine urban and suburban ways of living along several spectrums. We follow Moos and Mendez's (2015) study that operationalize these spectrums using all eight combinations of three variables.

While the eight combinations still produces categories of urban versus suburban ways of living, they are presented on a spectrum and allow for much greater variability than traditional, binary, place-based definitions of suburbs. The spectrum aims to defer

from the idea of a hierarchy in the organization of categories. The organization is a product of data representation rather than a statement for the findings.

The three variables were chosen because they reflect traditional and stereotypical views of what suburban ways of living in a North American context entail (Moos & Mendez, 2015; Beauregard, 2006; Harris, 2004; Harvey, 1989[1985]; Hayden, 2003; Jackson, 1985; Teaford, 2008). The variables are derived directly from other conceptual literature on North American suburban ways of living (Moos & Mendez, 2015).

Moos et al., 2015 sets a foundation of variables, categorical creation and ways of living to study, in the case of this thesis, the patterns of young adults. Their research found that the suburbanisms can occur outside of traditional geographic boundaries and the measure of distance from a central area to delineate suburbanization is not accurate (Moos et al., 2015). Moos et al., 2015 used Principal Component Analysis and mapped the top three-scoring components in census tracts across 26 of Canada's largest CMA's. The data looked at four suburban feature categories with various variables from Statistics Canada to provide detail within each feature category. The variables included, that relate directly to this research are auto-mobility – driving to work and middle-class status - owner occupied dwellings. The importance of these methods in relation to this thesis is the identification of variables that can be explanatory and exploratory in studying suburbanization at a national scale.

Tenure was chosen as it differentiates the fast-growing condominium market from rentals. Dwelling type directly relates to the environmental sustainability of an area and is telling about where young adults may prefer to live. This an assumption on

preference that is made from the data. It is acknowledged that this data does not measure preference of young adults' ways of living. Commute mode is a key consideration for environmental reasons and understanding the general change in transportation patterns that has occurred and may be exaggerated by future generations.

The spectrum of lifestyles is operationalized based on the three variables of tenure (renting versus owning), dwelling type (attached or detached), commute mode (by car versus other modes). The most suburban category is defined as owning a single-detached dwelling with an automobile-based commute. The most urban category is defined as renting an attached dwelling with a non-automobile commute. Table 2 below includes the most urban and most suburban categories. The categories are presented in neatly defined manner below, as a product of research organization, rather than as a statement of importance to the research. It is acknowledged that the categories are highly complex in reality and are a part of broader social and economic interfaces that are highly volatile and influential in the ways of living for the population. The categories are ranged in the chart format for organization purposes but are to be thought of in less of a hierarchical way and rather on more of a spectrum. The spectrum of ways of living indicate that the categories between most urban and most suburban are interchangeable.

Table 2: Ways of Living Ranging from Most Urban to Most Suburban

Variable Combinations			
Tenure	**Commute Mode**	**Dwelling Type**	**Way of living**
Rent	Non-automobile based commute	Non-detached (attached)	Most urban

Rent	Automobile based commute	Non-detached (attached)	
Own	Non-automobile based commute	Non-detached (attached)	
Own	Automobile based commute	Non-detached (attached)	
Rent	Non-automobile based commute	Detached	
Rent	Automobile based commute	Detached	
Own	Non-automobile based commute	Detached	
Own	Automobile based commute	Detached	Most suburban

The second methodological decision made concerns the time frame for analysis. The analysis draws on data from Statistics Canada Censuses in 1996, 2006 and 2011. The three census years were chosen given data availability and similarity of variables that permitted temporal comparisons. Census data from 2016 has not yet been released in the format required to conduct this research. Prior to 1996, the Census did not consistently collect information on the three variables selected. Options for further exploration with more census years was considered but for the purposes of this research, would not be attainable. The three census years had consistent information on the same three variables in a format that was accessible for analysis. Hierarchical, household level data from 2011 and 2006 was selected for the purposes of being able to compare the populations. The 1996 data is from the public use micro data household file.

It is acknowledged that the 2011 Census data at the individual and regional specific level can be unreliable given the change in status from mandatory to voluntary after 2006. At the aggregate level at which the data is extracted and analyzed for the purpose of this research paper, the data quality should be not affected.

For each of the Census years (1996, 2006, 2011), the same methods for extracting the data was used. The number of young adults in each of the eight categories (see Table 1) was extracted for 1996, 2006 and 2011. The total population in each of the eight categories was also extracted for 1996, 2006 and 2011. A total of all young adults was calculated as a share of young adults in the eight categories. The percentage of young adults within each category was calculated by dividing the number within each category by the total. The percentage of the total population within each category was calculated in the same way.

To further understand the changing patterns over time, we tracked data on two cohorts through census years. Data was extracted from the 2001 Census on 25 to 34 year olds, and then for the 2006 Census on 30 to 39 year olds. This assumes that roughly the same population would be captured in both census years, as the population aged. A second set of tracking data was extracted from 2006 Census on 25 to 34 year olds and the 2011 Census on 30 to 39 year olds. Data from the 1996 Census and 2001 Census was not available in the 5-year age groupings as required for this portion of the analysis. Tracking the population into the next two available Census years has the potential to demonstrate what variables are causing the changes in the distribution in various categories and the general lifestyle trends as young adults age.

Although the tenure variable reveals an interesting dimension of suburban ways of living, from an environmental sustainability perspective the dwelling type and commute mode are arguably most pertinent. That is because dwelling type relates closely to the density of the built form with implications for land consumption, while both the density and commute mode reveal ease of alternative modes of travel with lower carbon emissions. We therefore also conduct an analysis to consider the changing share of young adult and all households considering only these two variables.

The intention behind the data measurement and analysis is to identify overarching patterns in ways of living. The measurements are intended to provide insight into the patterns that exist in the data. The overarching patterns do not reveal individual preferences and are not conclusive in nature with use the variables as indicators of lifestyle choices. The processes that lead to these patterns identified, could include a range of factors on social, economic and land use climates of Canada. These data limitations are acknowledged further in the conclusion.

2.5 Findings

Figures 1 and 2 show the percentage of young adults and all households in each of the eight categories by ways of living over the three census years. A notable trend over time is a decreasing share of young adult households that own a detached dwelling with an automobile-based commute. This category is defined as the most suburban way of living. Between 1996 to 2011, the percentage in the most suburban category declines from 35 to 30 percent of all young adult households. Yet, despite the decline over time, this category still has the highest share of young adult households.
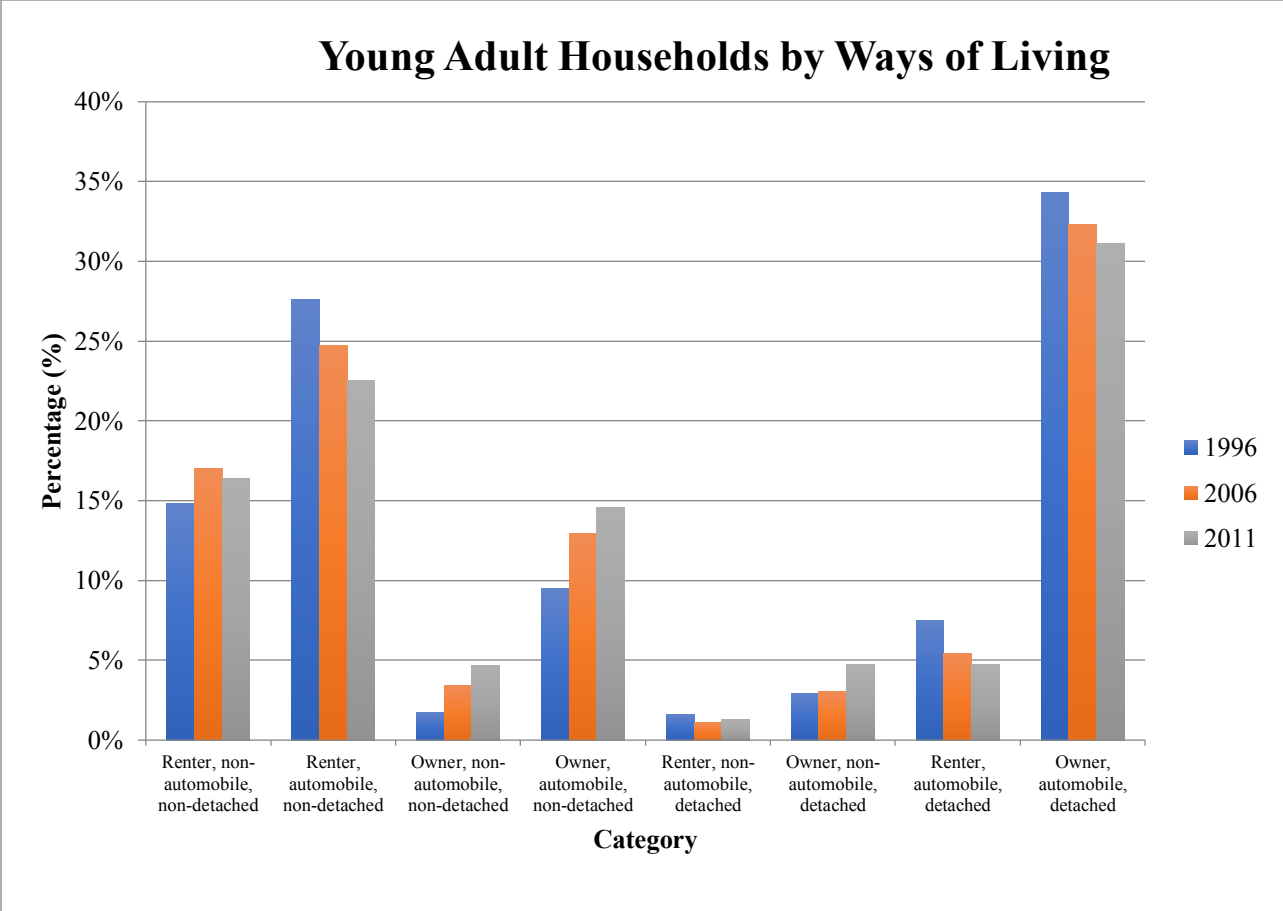
Figure 2-1: Young Adult Households by Ways of Living

All Households by Ways of Living
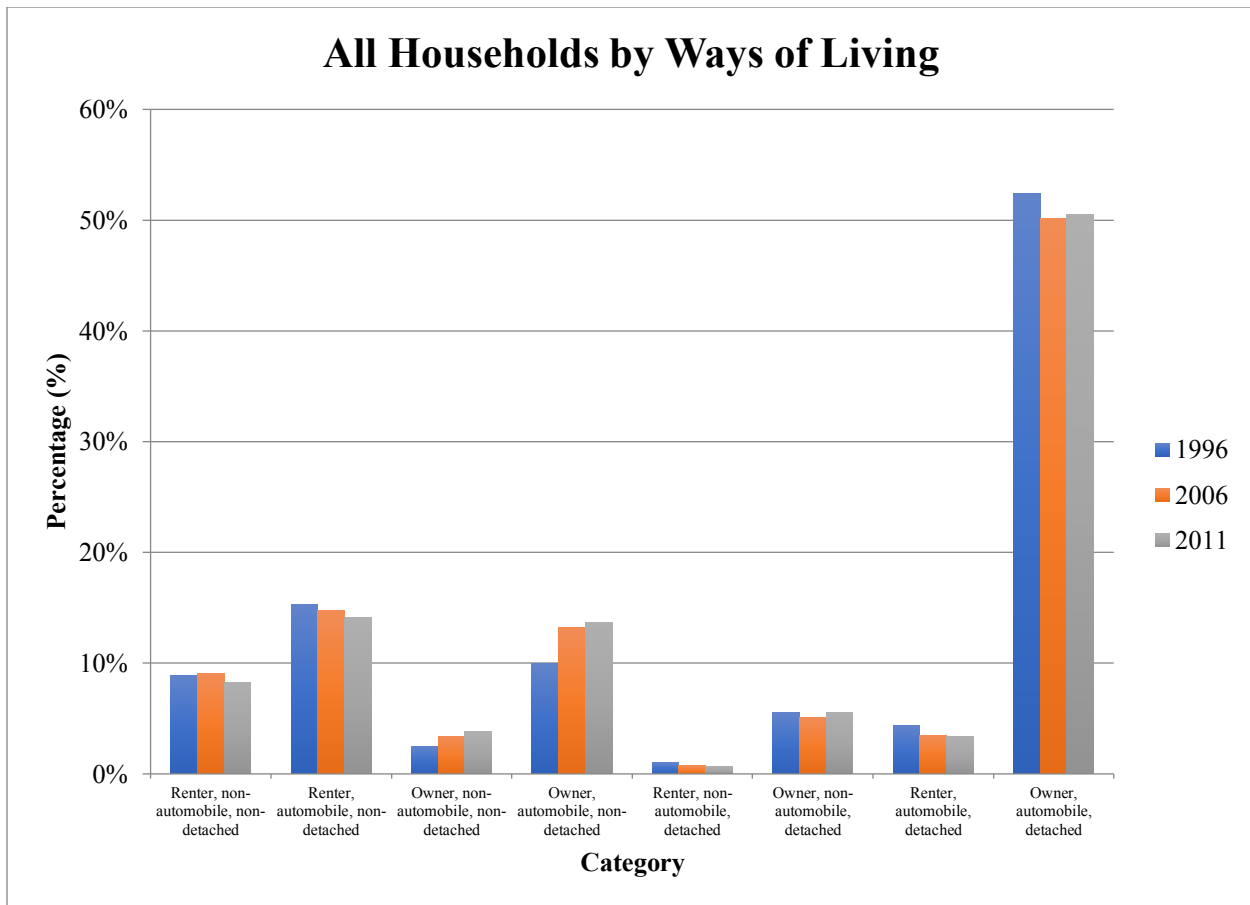
Figure 2-2: All Households by Ways of Living

Another trend is a decline in the percentage of young adults living in the second most urban category, renting a non-detached dwelling with an automobile-based commute. The percentage in this category decreased from 28 to 23 between 1996 and 2011. The category includes the second highest share of all young adult households.

Notably, the two most urban categories combined include about the same percentage of young adult households (39 percent) in 2011 as the two most suburban ones (36 percent). Most of the young adult households are thus concentrated on opposite ends of the urban to suburban ways of living spectrum. However, three of

these four categories (the two most suburban, and the second most urban) include households commuting by car (a total of 59 percent of all young adult households).

Thus, if there are sustainability gains to be observed over time, it is a shift towards higher density living but not necessarily reductions in automobile use. In fact, in 2011, 74 percent of young adult households remain in a category that include an automobile-based commute; although this figure did decrease by 5 percent since 1996. Some of the reductions in the categories including automobile-based commutes and single-detached living are offset by gains in a category that includes households that own a non-detached dwelling but still have an automobile-based commute.

The increasing share of young adult households in the category including non-detached dwelling living with an automobile-based commute by may be in part attributable to the development of condominium apartments (Figures 3 and 4), largely in the center of Canada's major metropolitan areas. The percentage increased by 6 percent since 1996 to 15 percent in 2011, which is often believed to demonstrate a combination of cultural shifts and demographic changes, that sees young adults delay single-detached home ownership until late in life.

Figure 2-3: Urban Lifestyle Category representing households that rent a non-detached dwelling with an automobile based commute

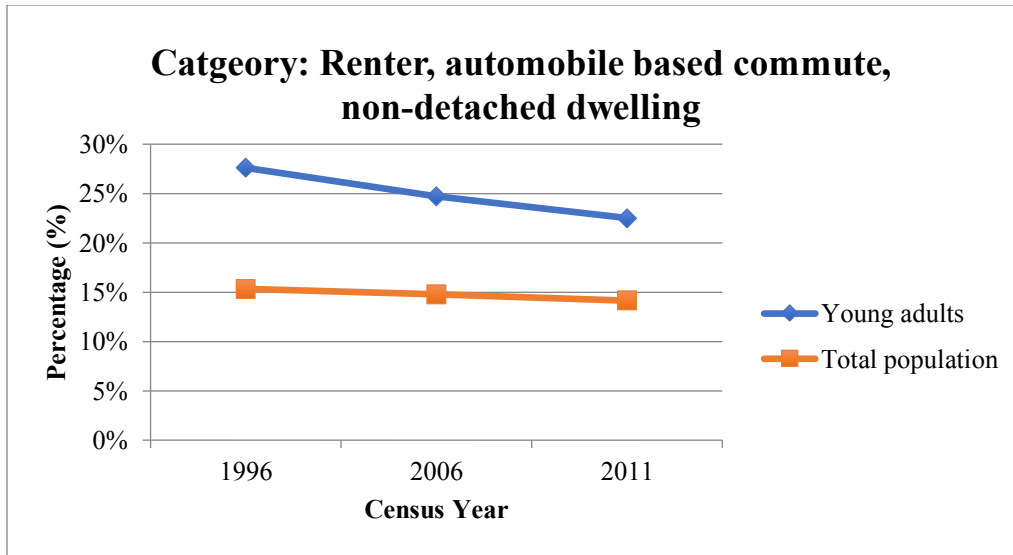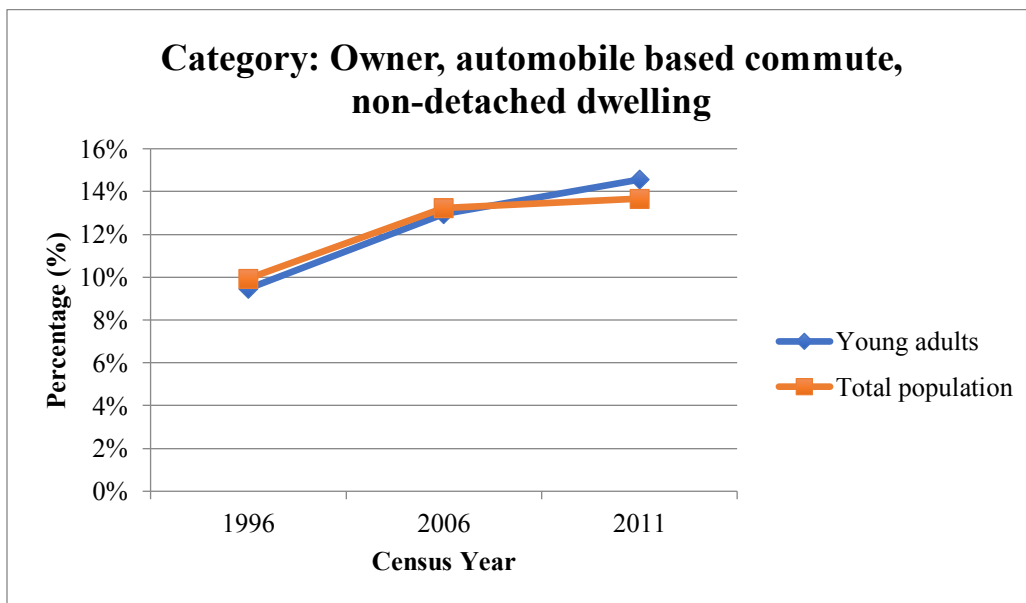*Figure 2-4: Urban Lifestyle Category representing households that own a non-detached dwelling with an automobile based commute*

Comparing the changes in young adult households to all households over the 15-year period reveals two overarching trends. First, young adults have much more varied lifestyles than the population as a whole, and the temporal changes are more

pronounced. Second, most Canadian households are living suburban ways of life but young adults are more likely to live urban ways of living than all households combined.

In all eight categories, the fluctuations of the total population were only between 1 to 3 percent between 1996 and 2011. The category with the highest share of households was the most suburban; owning a detached dwelling with an automobile-based commute. The traditional, stereotypical suburban lifestyle appears to be embraced by approximately half of all Canadians. This category accounts for 50 to 52 percent of the population consistently from 1996 to 2011. The two other categories with approximately 15 percent of the population each, are those including households who own a non-detached dwelling with an automobile-based commute and those who rent a non-detached with an automobile-based commute. The other categories each had a constant share of the population with a total of approximately 1 to 10 percent of all households.

The share of young adult households in the most urban lifestyle category is higher than the total population in all three years. This category is defined by renting a non-detached dwelling with a non-automobile commute. The share of all households in this category is stable at 9 percent. The share of young adult households ranges from 15 to 17 percent.

The category that has been defined as the second most urban (renting a non-detached dwelling with an automobile-based commute), also has a higher share of young adult households than is the case among all households. The trend for young adults is a slight decrease in this category over the three census years. In 1996, 28 percent of the young adult population was included in this category; this dropped to 25

percent in 2006 and to 23 percent in 2011. The percentage of all households in this category has remained virtually constant at 15 percent over the three census years.

Young adults are much less likely to be in the most suburban category than all households. This is the category that includes households who own a detached dwelling and commute to work by automobile. Fifty percent of all households are in this category. Between 34 and 32 percent of young adult households are included in this category over the three census years. The 20 percent difference between young adult and all households in the most suburban categories supports the arguments that young adults even at the national scale, are more likely to live an urban way of life.

Considering only dwelling type and commute mode, we find that approximately 40 percent of young adults live in a single-detached dwelling with an automobile-based commute (Figure 5). The figure increased from 41 percent in 1996 to 44 percent in 2006, and then decreased to 42 percent. Given slight changes in definition of households over time, we might say that at the national level the share of young adult households living a traditional suburban way of life has remained constant.

At the national level, the decreases in the most suburban categories observed earlier had more to do with changes in tenure than dwelling type. The share of young adult households in single-detached dwellings increased from 45 percent to 50 percent between 1996 and 2006, and then decreased slightly to 49 percent by 2011. For all households, the percentage living in single-detached dwellings increased from 58 to 62 percent over the three years. It is notable, however, that the share living in single-detached housing for young adult and all households seems to have levelled off, rather than increase.

Variables: Single detached, automobile
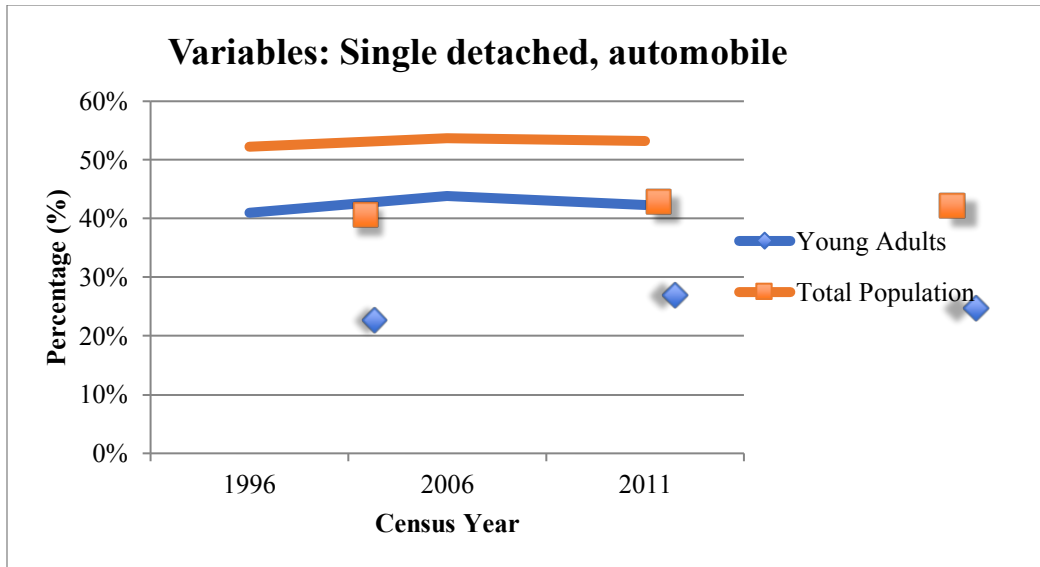
Figure 2-5: Percentage of Households Living in Single-detached Dwellings and Commuting to Work by Automobile for Young Adult and All Households

Importantly from a sustainability perspective, decreases in automobile-based commutes did play a role in the overall reduction in suburban ways of living. The share of young adult households commuting by car decreased from 79 percent in 1996 to 75 percent by 2011. The share of all households commuting by automobile is higher than among young adults but appears to have plateaued between 2006 and 2011 at 79 percent, which is a 2 percent decrease since 1996. Regardless, the relatively high share overall reveals that most households in Canada are still reliant on an automobile for commuting despite rapid urbanization and growth in the centre of major metropolitan areas.

2.5.1 Cohort Changes

To understand the changes in the young adult cohorts, we compared the 2001 Census data on 25 to 34 year olds to the 2006 Census data on 30 to 39 year olds. This

means we can see the changes in the cohort's preferences after 5 years; assuming generally that the same cohort is captured in the later census year.

An increase of 13 percent is found in the most suburban category, which also holds the highest share of the cohort in both the 2001 and 2006 Census. In all categories with tenure as ownership, there was an increase in the share of the cohort. In each category with tenure status as renter, there was a decrease in the share of the cohort after 5 years. The most urban category defined as renting an attached dwelling with a non-automobile based commute experienced a 5 percent decrease as the cohort aged. In the category of renting an attached dwelling with an automobile based commute, there was a decrease of 12 percent. These two decreases in the share of young adults in the urban environments demonstrates pull towards suburban lifestyles overtime.
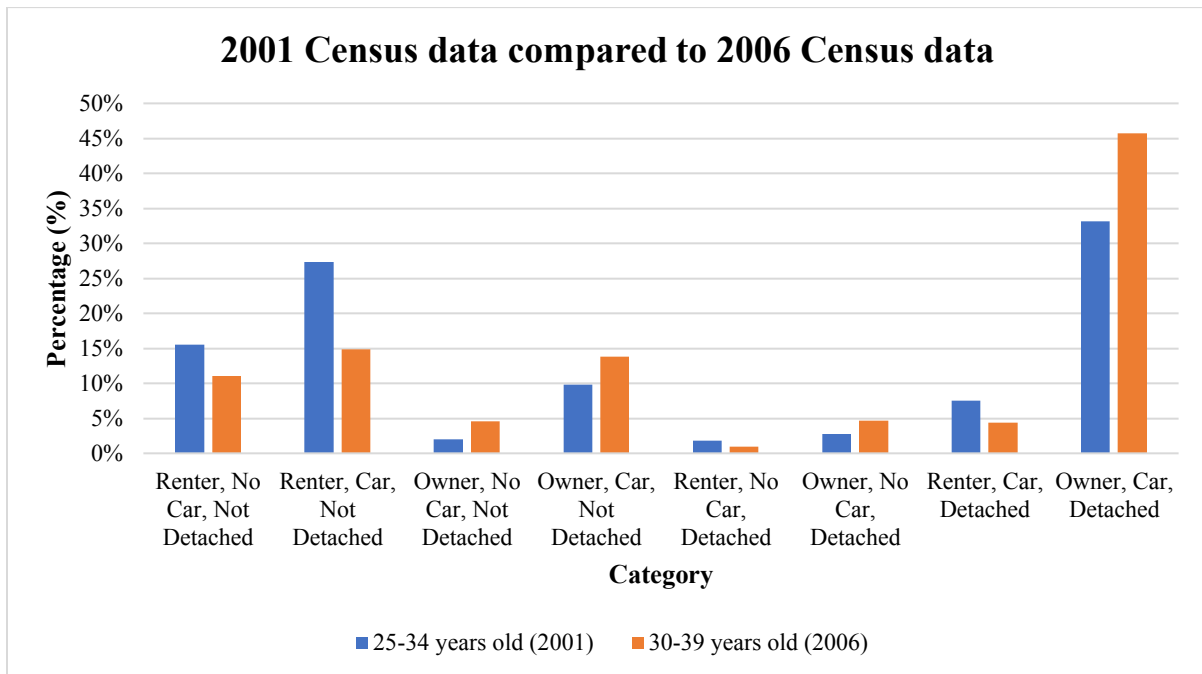
Figure 2-6: 2001 Census data on 25 to 34 year olds compared to 2006 Census data on 30 to 39 year olds

In the 2011 Census, the population of young adults found in 2006 would be ages 30 to 39. After 5 years, the beginning of a general shift towards suburban lifestyles is evident. A similar degree of variability in the distribution between all eight categories is still found after 5 years, but with a majority of the population in the most suburban category. Forty six percent of the 30 to 39 year olds households are included in this category. The second highest share is observed in the category of owning an attached dwelling with an automobile based commute at 15 percent. In comparison, in the 2006 Census, only 3 percent of the 25 to 34 year olds fell into this category.

In 2011, the second highest share of all households is split between the categories of owning an attached dwelling with an automobile based commute and renting an attached dwelling with an automobile based commute. In 2006, the second highest share of 25 to 34 year olds was in the category of renting a non-detached dwelling with an automobile based commute at 25 percent. The common element between the categories with high shares is the automobile based commute.

The category of renting an attached dwelling with an automobile based commute decreased as the young adults aged. In 2006, 25 percent of households fell into this category, whereas in 2011 the category had only 14 percent. The category of renting an attached dwelling with a non-automobile based commute also saw a decline in the share of households, dropping from 17 percent in 2006 to 10 percent in 2011.

2006 Census data compared to 2011 Census data
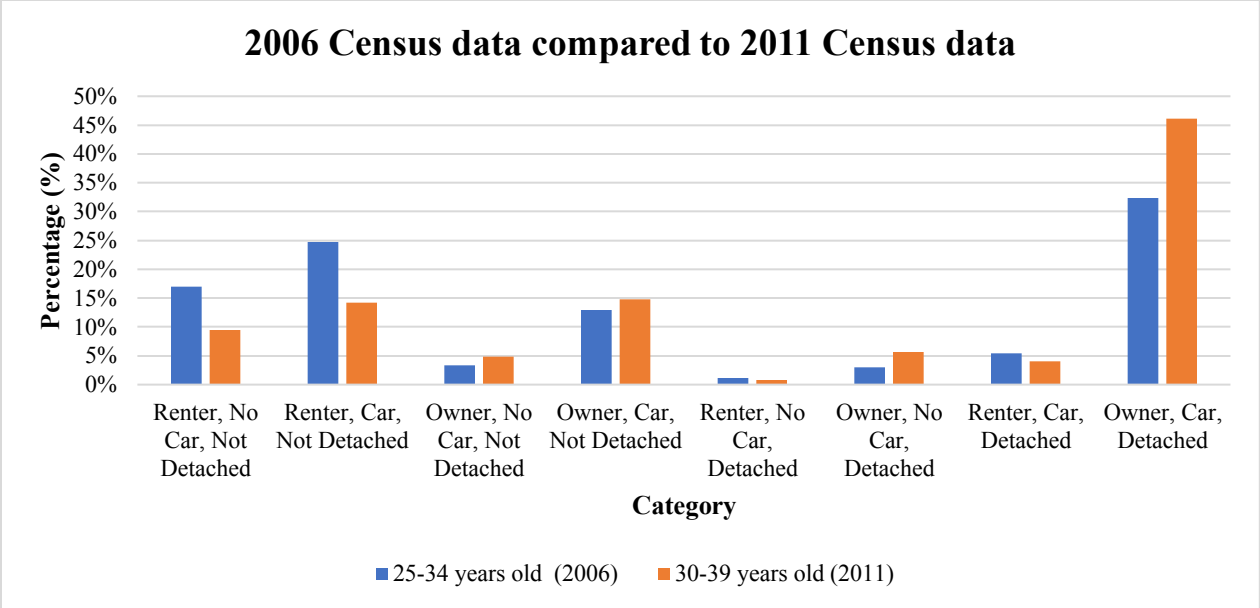
Figure 2-7: 2006 Census data on 25 to 34 year olds compared to 2011 Census data on households ages 30 to 39 years old

2.6 Conclusions

The results portray that at a national scale in a Canadian context, planning policy that has been pushing complete communities and densification are in fact being reflected in the housing and location decisions of young adults (Brewer & Grant, 2015). The data indicates a range of patterns in young adults' ways of living, which are different than the process of preference in young adults' ways of living that can include a range of factors that include, but not exclusively: economic conditions, social variations, range of income, market availability and built form types. A decreasing share of young adult households are living suburban ways of life. The share of young adults as well as for all households living in single-detached dwellings and commuting by car has plateaued or even slightly declined.

However, the research also serves to caution contemporary research on young adults and on the success of intensification and other planning policies aiming to

increase density and reduce automobile use for sustainability reasons—even though

young adults today are more likely to express demand for urban ways of living, this still

leaves a large share living suburban ways of life associated with higher environmental

impact lifestyles. Canada is continuing to be "a suburban nation" (Grant, 2008; Gordon

et al., 2018).

Changes that are observed point to increasing dwelling densities as detached

dwellings are becoming less common; although even if living in attached, higher density

dwellings, a large share of households continue to rely on the automobile for their

commuting. This is perhaps a reflection of the lack of investment into public transit

infrastructure outside of the core of major metropolitan areas, which could service a

large share of Canada's population. Increasing suburban densities hold promise that

more households can be served by transit; however, the large share of households in

low-density, single-detached neighbourhoods put into question how quickly Canada's

population could make changes in their transport behaviours (Christens, 2009; Moos,

2017).

The kinds of lifestyles associated with young adult suburbanites are, however,

also changing in that young adults are residing in suburbs that are characterized by

higher densities, renting, and less auto-oriented lifestyles. The research urges planning

practice and research not to conceptualize suburbs as purely, homogeneous, low-

density landscapes, which overlooks potentially increasing urban ways of living in

suburban places (Moos & Mendez, 2015).

From the data on the cohort changes, conclusions can be drawn on the variable

of tenure as being the key determinate in changes to lifestyles overtime. There is also a

general increase in the categories with an automobile based commute as the cohorts aged. The main cause for increases in various categories appears to be connected to tenure; any categories with ownership captured an increasing percentage of both populations of 30 to 39-year-olds in 2006 and 2011. The categories with ownership all had increasing shares over the 5-year period.

Over the 5-year period, the aging young cohort has a lower variability in their lifestyle distributions. The older the population, the more they cluster in suburban lifestyle categories. The urban lifestyle categories subsequently feature lower shares of the older young adult population. Where the older young adult populations are remaining in urban categories, the category features an attached dwelling, ownership of the dwelling and an automobile based commute.

There is no apparent decrease over time for the 30 to 39 year old households captured in any categories with an automobile based commute. The young adults appear to be more likely to own a dwelling either attached or detached, and have an automobile based commute as they age. A rethinking of suburban sustainability and complete community objectives to retain young adult populations as they age may be necessary.

It should be noted that the findings presented here can be interpreted in at least two different ways. The large share of young adults and all households that continue to reside in single-detached dwellings and commute by car, can be assumed to reveal a preference for suburban lifestyles. It is acknowledged that this data presents overarching patterns in different lifestyles, and is not a measure of preference. Some commentators have concluded that planning policy should not intervene in the

marketplace, since suburban ways of living seems to be what most people desire. The second interpretation is that planning policy has not gone far enough in facilitating more sustainable ways of living.

The position that large shares of people living in particular circumstances should be used to guide public policy is problematic for at least three reasons. First, observed patterns of suburban ways of living do not, on their own, reveal the existence of current and historic policies and subsidies that have facilitated and actively encouraged low-density development patterns and automobile use (Sorensen & Hess, 2015).

Second, the housing stock and transportation infrastructure change relatively slowly. Only a small percentage of households move into newly constructed housing, and infrastructure investments can take decades to implement. Thus, the urban form that facilitates particular ways of living may not currently reveal actual preferences as households are making decisions about where and how to live based on housing and infrastructure decisions made by previous generations.

In other words, observed patterns may not actually be revealing individual preferences due to the slow nature of urban change. The implication of this is that planning policy cannot necessarily rely on observed patterns to make forecasts about future or even current demand. Information about trends and current preferences can be found at the margin, where changes are occurring. These point toward stagnating preferences for low-density, suburban ways of living, and increasing demand for urban living instead. The implication is that policy ought to continue facilitating this growing preference.

And third, even if we take the position that observed patterns are illustrative of individual preferences, there is not necessarily a guarantee that the aggregate outcome of these preferences will be beneficial for society as a whole. This is the case because of the existence of negative externalities. As is well-known, low-density suburban living based on automobile commuting relies on the consumption of vast amounts of fossil fuels, which are the leading cause of climate change (Davis, Caldeira & Matthews, 2010). Even locally, however, reliance on the automobile produces congestion, air pollution, and traffic accidents. The aggregate costs of these on well-being, lost productivity, and health need to be weighed against any benefits associated with personal mobility that the car facilities.

From a sustainability perspective, the results of our study may be discouraging in that it reveals the continuing dominance of single-detached dwelling occupancy and automobile-based commutes, which are associated with negative environmental outcomes (Dale & Newman, 2009). However, there are signs that these patterns are changing, even if only slowly. If despite continued emphasis on low-density, automobile-based planning in many communities, the overall pattern is toward more urban ways of living, even if only slightly, it holds out promise that change is indeed possible.

Although there is much discussion of planning for more sustainable ways of living, we might argue that in practice planning systems and policies at all scales still largely favour suburban ways of living. We can imagine, at least, the change that would be possible if more policies, and substantial resources, were put in place to actually implement transitions in urban form and transport networks that facilitate more sustainable ways of living.

Chapter 3

Manuscript 2: Are young people still suburbanizing? An analysis of Toronto, Montreal, and Vancouver

AUTHOR: Zoe Sotirakos

3.1 Introduction

3.1.1 Topic Overview

This study explores suburban and urban lifestyles, operationalized using variables of commute mode and dwelling type, in Canada's three largest Census Metropolitans Areas (CMAs) of Toronto, Montreal and Vancouver. The variables of commute mode and dwelling type are used to create suburban and urban lifestyles categories to see how shares of households change over time in each category and comparatively between each CMA of Toronto, Montreal and Vancouver. The categories range in gradations of urban to suburban lifestyles. The urban lifestyles are defined by residence in an attached dwelling with a non-automobile based commute and the suburban lifestyles are defined by residence in a detached dwelling with an automobile based commute. The paper aims to identify key regional differences to fill gaps in the knowledge on young adults' urban versus suburban ways of living and identify patterns.

Research on young adults' housing and commute modes, is becoming more prevalent (Walks 2005; Grant 2009) yet few authors have directly analyzed the variations to young adult ways of living in Toronto, Montreal and Vancouver. The lifestyle, or way of living is, operationalized based on prior research by Moos and Mendez, where suburbanisms as a way of living are measured by living in a single-detached house and using a car for commuting (Moos & Mendez, 2015). Toronto,

Montreal and Vancouver are each affected uniquely by the suburbanisms embraced by

the young adult populations. At the metropolitan level, residential planning, specifically

housing guidelines could be generated based on the continuation of trends of

suburbanisms to ensure an adequate supply and variety of the housing options for

young adult populations.

3.1.2 Relevance to Planning

This research is highly relevant to the planning practice in the public realm

specifically, because it details trends of housing and commute patterns for the total

population and young adult population, across three of the largest CMAs in Canada

(Toronto, Montreal and Vancouver). It is recognized that the young adults' lifestyles can

be highly dependent on social, economic and contextual variables of the location of

residency. The variations within the housing markets in each of the CMAs ought to be

understood as young adults infiltrate the market in large numbers. The degree to which

young adults suburbanize, or not, can impact the housing policy and transportation

infrastructure systems currently in place and future capacity demands in the future.

Various municipal planners can consider the overall findings of this manuscript to inform

future policies on housing.

Urban lifestyles in the context of this research are studied as those living in an

attached dwelling with a non-automobile based commute. The suburban lifestyles are

the inverse of urban lifestyles, and are studied as those living in a detached dwelling

with an automobile based commute. The paper engages with both concepts of the

urban and suburban as lifestyles. These concepts are commonly connected to physical

attributes such as the height and form of buildings or road configurations of specific

places (Brewer & Grant, 2015; Garikapati, 2016). An urban space traditionally is thought to feature tall buildings, grid patterns of roads, a lively-core area for social interactions. Whereas suburban places, commonly are associated with low-density dwellings, cul-da-sac style streets and open spaces for recreation.

Rather separating the concepts urban and suburban based on their traditional, physical traits, the paper focuses on the overlapping characteristics of the two concepts that are demonstrated through lifestyles. The urban and suburban lifestyles are not always only products of the physical environment. Through analysis of the thematic characteristics of urban and suburban lifestyles, similarities can exist.

3.2 Research Questions & Methods

Three research questions are posed to frame the analysis: the first is, *how suburban is the total population in each CMA (Toronto, Montreal, Vancouver) as measured by ways of living*. The second is *how suburban is the young adult population in each CMA?* And the third is, *to what degree are young adults transitioning from urban to suburban ways of living as they age?*

In general, cross-tabulation methods are used to identify key patterns in the data that can answer the research questions above. A trend analysis of Statistics Canada Census data from 1996, 2006 and 2011 is used to answer research question one and two. These research questions look at the fluctuations, comparatively across Toronto, Montreal and Vancouver in how suburban the lifestyle, or the suburbanization, of the total population and young adult population. For research question three, Statistics Canada Census data from 2001, 2006 and 2011 is used to uncover trends of how young adult ways of living have changed over time. The suburban and urban lifestyles

are built based on the variables of dwelling type and commute mode. Four categories are created for the purposes of this research, and range from the most urban (attached dwelling, non-automobile base commute) to the most suburban (single-detached dwelling, automobile-based commute) (Moos & Mendez, 2015; also see Moos & Walter-Joseph, 2017).

3.2.1 Findings

The research objective is to develop numerical data to empirically investigate the assumption that young adults are transitioning from traditional urban lifestyles with high density housing and no car, to the suburban lifestyles with low density areas with a car. The findings indicate that most young adults are clustered in the urban lifestyle categories in Toronto, Montreal and Vancouver. In each CMA, the pattern young adults follow over time differs depending on automobile use. Further, the dwelling type most young adults live in is highly differential between each of the CMAs.

3.2.2 Paper Outline

The paper begins with a literature review of the key concepts of suburbanisms, and the housing transitions specifically for young adults. The three case study cities of Toronto, Montreal and Vancouver are reviewed detailing their population and housing landscapes. The methods section follows with how each research question is addressed, and the decisions made on variables, census data and data analysis. Findings are presented for each research question with corresponding graphs to visually demonstrate the data. The broader implications of trends discovered in all three CMAs and the importance of these findings to the planning practice is presented in the conclusion.

The following literature review explores the concept of suburbanisms by providing a history of suburbia and the applicable definitions. The second section reviews housing transitions in Canada and specifically those related to young adults. The final section details the housing and demographic landscape of Toronto, Montreal and Vancouver with data from the Canada Mortgage and Housing Corporation (CMHC).

3.3.1 Suburbanisms
History

The North American metropolitan landscape was largely shaped by the growth of the suburbs in late 20th century (Forsyth, 2012). As the inner-city population decreased in size, the outer, suburban rings grew (ibid.). These settlement areas thrived under their current economic conditions with liberal finances, as more people could afford homeownership (ibid.). Additional pull factors to suburbia were the low-density form, and neighbourhood amenities such as parks and nearby schools (Harris & Lewis, 1998). Most of the population was attracted to the disconnected space that suburbs offer; a work environment and home environment that exist as two separate entities.

Historically, the suburban demographic has been defined by people with common traits; married, with kids and sustaining a middle-class income. The traditional inhabitants of the suburbs are the nuclear families (van Diepen and Musterd, 2009). Suburbs traditionally consisted of detached, low-density dwellings with open space surrounding (Fava, 1956; Forsyth, 2012). This facilitated an auto-centric and individual-consumption based lifestyle (ibid.). Today, some of the planning and design of North American suburbs has been modified to include mixed-use developments with elements

of active transit systems integrated into the community (Falk, 2006). These more diverse and efficient suburban designs emphasize principles of sustainability in the built form (Moos & Kramer, 2012).

Planning frameworks across North America have increasingly emphasized sustainable developments with compact and higher density form (Moos, 2016). This is not reflective of the standard residential development concept of the suburbs. Objectives for many regions have focused on sustainability, complete communities and efficient land uses (Sorensen & Hess, 2015). This is counter to the suburban sprawl that has plagued many cities. The suburbs traditionally did not offer high density housing, a central core with a range of retail and commercial amenities, or a diverse spaces for social and other activities (Forsyth, 2012).

Definition

Suburban space has been thoughtfully analyzed by many authors, one of them being Harvey (2006) – where suburban space can be seen as "an amalgamation of physical form and material infrastructures, relative interconnections and flows between other nodes and places, and subjectively experienced and understood relationally" (Fiedler & Addie, 2009, p.25). To create a baseline for understanding suburbanisms, it is important to first expand our knowledge of the definition of the suburbs and suburban.

The emergence of the urban-suburban dichotomy came at a time of industrialization (Moos & Mendez, 2015). There was an urban core with high density, employment land uses and a separate, seemingly opposite suburban space with low density, residential land uses (ibid.). The 21st century land uses demonstrate a blending the various land uses including employment and residential. (ibid.). Further, since the

1970's, the suburbs have become increasingly more diverse in built-form and in social composition with the inclusion of semi-detached dwellings and townhouses, and a range in average household age (ibid.).

The definition of 'suburban' can be expanded to include 'a way of living' determined by behaviors of automobile use, residential built form, tenure and overall lifestyle choices (Moos & Mendez, 2015). According to Moos and Mendez, "surburanization can be understood as the process of spreading suburban ways of living to new geographic areas" (Moos & Mendez, 2015, p. 2). Suburbanism as a concept seeks to demonstrate suburban ways of living that are mobile over time and space (ibid.). Treating suburban ways of living as transferable principles and products of an individual's choices, rather than the environment, demonstrates a new flexibility in the definition.

Further, Airgood-Obrycki and Rieger establish a three-level categorization of suburban in a North Amercian context. Their work focuses on the census-conveient, suburbanism or typology type of definition (Airgood-Obrycki & Rieger, 2019). The evaluation of suburbanism definition highlights its use in Canadian suburban literature and "flows on an urban-suburban continuum rather than as static, place-based characteristics" (p.5).

3.3.2 Traditional Housing Transitions

Movement on the Housing Ladder

Suburbanisms are present across the Canadian housing landscape. The housing landscape includes low-density housing in urban-core areas and suburban areas with high-rise buildings (Walks, 2013). The traditional lifestyle of driving to work from a house in the suburbs does not hold true across all geographic boundaries or for all generations (ibid.). Rather, populations are living in high-density buildings, continuing to have an auto-centric life, while others are living in suburban areas and not using a car. The observed lifestyle choices of urban, auto-orientated lifestyles and suburban non-auto orientated lifestyles, demonstrate young adults have made different lifestyle choices than previous generations (Druta & Ronald, 2017; Moos, 2016).

The idea of moving up a 'housing ladder' in a lateral fashion may be interrupted by the many lifestyle options available for current and future generations entering the housing market (Rowlands & Gurney, 2010). The 'housing ladder' is defined as the path traditionally taken from renting an apartment, or other attached unit, to owning a larger, detached house (Marrow et al., 2005). Cortright describes the climb up the 'housing ladder' as a shared, and common objective of most populations moving through the housing market in North America (2014).

Given the changing housing preferences, career attitudes and social desires of young adult populations, moving into a single-detached home in a suburban area may not meet their lifestyle desires or needs (Beer et al., 2011). The observed lifestyle choices and journey up a 'housing ladder' is different than observed for previous generations (Druta & Ronald, 2017). For example, current research shows large

numbers of young adults living in higher density areas near public transportation

corridors (Moos, 2016). Additionally, municipal planners may strive to facilitate and

encourage the development and redevelopment of suburban neighbourhoods that

feature urban preferences and amenities, to be the future housing environments for

young adults, given many traditional suburbs no longer meet their needs (Myers &

Gearin, 2010).

Preferences on residential location for young adult populations are different than

previous generations (Dempsey, 2016; Moos, 2016). There are several factors that

guide and influence residential location decisions; these include individuals desire to

maintain social connections, family connections and predicted or present size, career

location and income, affordability of housing options, and availability of amenities such

as schools, parks or shops (Moos & Mendez, 2015; Blauboer, 2011; Bondi, 1998;

Morrow-Jones & Wenning, 2005). All of these factors influence timing and movement on

the 'housing ladder' for the young adult populations.

Young adult populations have taken on longer academic careers, delay having

children until their 30's and have been changing locations of residency more frequently

(Butler, 2001; McDonald, 2015). Further, the type of dwelling is closely related to the

demographic composition of the household (Moos & Skaburskis, 2008).

3.3.3 Young Adult Residential Ecology

The residential ecology of young adults is becoming increasingly orientated to

urban spaces. Residential ecology is the spatial arrangement of populations including

their relation to public services, the built form and housing types (Grant & Scott, 2011;

Moos, 2014). Young adult residential ecology preferences lean towards those that include features of walkability and public transit access (Badger, 2014). Further, current research finds that, young adult's residential ecology is often based on "access to transit, high-density housing, and walkability to urban amenities" (Moos, 2014, p. 15).

In the Canadian context of Montreal and Vancouver, research has shown that a high volume of young adult's live along transportation networks and in high-density housing (Moos, 2014). This trend is not new, but rather expanding, as young adults have been gravitating towards urban, central locations for residency since the 1980's (Moos, 2014). The young adult populations in Canada are converging in high-density neighbourhoods within close proximity to work and social conveniences (Karsten, 2007).

Although young adults may prefer the urban lifestyle, Ontario has seen an increase of 20 percent of young adults living at home since 2001 (Statistics Canada, 2017). Upon independent living, many young adults are highly mobile, rent precarious, and residing in shared, temporary housing for an extended period (Beer et al., 2011). Given the consistently evolving housing lifecycles that are more fluid and less predictable, the need for municipalities to plan and coordinate the provision of various housing sizes and types is greater than ever before.

3.3.4 The Three Cities

Montreal, Toronto and Vancouver are the three largest CMA's in Canada and will be reviewed for the purposes of understanding the changing suburbanisms of their respective young adult populations. These three CMA's were selected based on their

availability of data and significance, given their size and wide population age ranges. They have experienced significant population growth and changes in their housing built forms over the 20th and 21st century (Fortin & Leclerc, 2000).

Montreal

Montreal is the most eastern of the three cities. It is the largest metropolitan region in the province of Quebec. The population estimate of the CMA in 2017 was 4,138,254 people; achieving a ranking as the second largest city in Canada (Statistics Canada, 2017). The population growth has been slow and below the national average, with minor increases between census years (ibid.). Low immigration rates, low fertility rates and high death rates of the aging population result in a slower population growth for the CMA (ibid.).

Despite the slow population growth, Montreal's economy has rejuvenated with a high-technology sector (Gravenor & Gravenor, 2002). Historically, acting as an industrial port city, Montreal has experienced many demographic, economic and housing changes that have all 'modernized' the landscape (ibid.). Notably, gentrification has occurred in the areas of Old Montreal, the port area, the downtown core and the plateau (Walks & Maaranen, 2008).

The downtown core, although gentrified, hosts a variety of rental housing options (Germain & Rose, 2000). Most of these are apartment buildings with fewer than 5 stories, which dominate as the main housing type in the CMA at 41.2% (CHMC, 2019). The core is surrounded by traditional, low-density suburbs; single-detached home account for 32% of the housing stock (Germain & Rose, 2000; CHMC, 2019). In the

past, the core of the city has been denser than Vancouver or Toronto but currently, is no longer the densest of the three CMAs (Moos, 2016).

The CMA has experienced fewer gains in high density housing in comparison to Toronto and Vancouver (Filion et al., 2010). A general shift towards single-family living has been observed in Montreal (Moos, 2016). The demand for rental units from 1996 to 2011 has steadily been decreasing because of the move to homeownership (CMHC, 2019).

The increase in housing cost has been significantly less than in Toronto or Vancouver, meaning the option of homeownership is attainable for more people (CHMC, 2019). This is likely related to Montreal's stable government support for housing, coupled with the larger rental sector (Furlong & Cartmel, 2007). Further, lower rent prices in Montreal have been linked to the less favourable economic conditions (Germain & Rose, 2000). Rent is lowest in Montreal compared to Toronto and Vancouver at an average of $796 per month (CMHC, 2019).

Toronto

Historically, the City of Toronto was systematically planned by the *Metro Plan for Toronto*, which laid out everything from residential areas to employment zones (Filion, 2001a). Not without criticisms, the plan was blamed for traffic congestion due to a lack of alternative transportation options and the extreme segregation of land uses (Harris, 1996; Sorensen & Hess, 2015). These criticisms are also commonly applied to suburban developments (Filion, 2001a). An attempt to combat this was through "coordinated development", bringing the idea of "balanced suburbanization" through linking transit and highways to existing low density areas (ibid.).

In the CMA of Toronto, approximately 41% of the housing stock is single-detached (CMHC, 2011). A "yellow-belt" has been largely criticized as a ring where low-density, single family homes are readily built and maintained as character neighbourhoods (De Silva, 2017). The price to own a home in CMA of Toronto, specifically in this "yellow-belt", has been referenced as extremely unaffordable due the dominance of the single-detached housing type.

The rising cost of home ownership in Toronto has in turn, increased the rental demand. The average monthly rent in Toronto is $1,359 – despite the high price tag, there has been the strongest year-over-year growth in almost 20 years (CMHC, 2019). In Toronto, the apartments with five or more stories account for 27.5% of the housing stock and only 10.4% of the stock being apartments with fewer than five stories (ibid.). Despite demand for a greater diversity of attached dwellings, the Toronto housing stock is still dominated by detached dwellings.

With the Greenbelt surrounding the CMA, the growth is further restricted to the designated growth areas (Macdonald & Keil, 2012). The core is where the most intensification has occurred through condominium development (ibid.). With an attempt to meet demand for residence in the core, the high-density style allows more people to live geographically closer together (ibid.). The CMA of Toronto had an estimated population of 6,346,088 in 2017 (Statistics Canada, 2017). Toronto's consistent growth in population increases the need to support a wide range of housing needs.

Vancouver

Vancouver is the most polycentric out of the three CMA's (Affolderbach & Schulz, 2017). The population of the Vancouver CMA was estimated to be 2,571,262 in 2017

(Statistics Canada, 2017). The CMA features a range in population age and housing types (ibid.). The cost of living in the CMA of Vancouver is higher comparatively than in Toronto or Montreal (Harcourt & Cameron, 2007; Moos, 2016).

The densification of Vancouver is generated with the help of the Provincial Agricultural Land Reserve that acts as a growth boundary (Brewer & Grant, 2015; Cortright, 2014). A rise of development of condominium towers has dominated Vancouver's core and is visible in the skyline (Revington, 2015). Some of the high-density development has been fueled by foreign investment and wealthy migrants that invest in high-end, high-rise buildings (Moos, 2016).

The housing landscape is different than in Toronto and Montreal given the higher prices for rent at $1,385 and an overall high cost of living (CMHC, 2019). The market has experienced a decline in the number of long-term condominium rentals due to strong resale market prices (ibid.). Therefore, investors sell their units, causing a decline in the number of units on the rental market (ibid.). Approximately 25.6% of the housing market consists of apartments with fewer than five stories, and 14.5% of the market is apartments with five stories or more within the entire CMA of Vancouver (ibid.). Combined this value is greater than the number of single detached houses.

The share of single-family homes in Vancouver is also declining for two main reasons. The first is the urban densification strategies and the second is the rising housing prices (Chernoff & Craig, 2018). A declining share of single-detached houses in the area is related to the rising housing prices (Moos, 2016). Accordingly, 33.8% of the housing stock is single detached (ibid.). Many clusters of single family dwellings surrounding the core feature secondary centers that meet the general service and

amenity needs for those living in the suburbs (Moos, 2016). Contemporary urban

planning ideals are visible in how the city is arranged in nodes and corridors (Filion,

2015).

It is acknowledged that between Toronto, Montreal and Vancouver, various

social impacts, economic differences and context specific variables can be largely

influence in where people live and on their type of lifestyle. This research does not detail

these specific variables, rather it looks for overarching patterns in the data on ways of

living and aims to identify them. The thesis relates ways of living and lifestyles, but does

not assume the variables considered are exclusive for shaping lifestyles.

Further, we are aware of the geography of these patterns as they have been

analyzed in detail by Kramer and visually represented in the Atlas of Suburbanism using

2006 CMA level Census data. Maps of dwelling type and commute mode for the

Greater Toronto Area, Montreal and Vancouver are included as Appendix 1. These

maps offer supplementary visuals and add to the understanding of suburbanisms

across major CMA's in Canada.

3.4 Methods

The research is conducting by a quantitative empirical analysis of Statistics

Canada census data. From the data, the young adult population aged 24 to 35, is

extracted first. The young adults are then examined by lifestyles determined through the

variables of dwelling type and automobile use. The data is further focused on the young

adult populations lifestyles in three of Canada's largest CMA's: Toronto, Montreal and

Vancouver. Within each set of data, cross-tabulation is utilized to identify patterns in the

data and is efficient for analysis of all categories. The following section reviews the

variables, categories, methods of each research question, and the data decisions made on population age ranges and census years.

3.4.1 Variables

Two variables of dwelling type and commute mode are used to create four categories which range on a spectrum from most urban to most suburban. The first variable is dwelling type: detached or attached; and the second variable is based on journey to work: commute mode by automobile versus other modes. These variables are previously used by Moos and Mendez to frame neighbourhood types given their stereotypical significance and, as they are widely relatable to the suburban conceptual literature.

Dwelling type

The first variable of dwelling type has two categories: attached dwellings and detached dwellings. The 1996 and 2006 Census and 2011 National Household Survey have various options for attached dwellings; for the purposes of this research attached dwellings includes row-houses, semi-detached dwellings, duplex's and apartments with fewer than five stories and apartments with five or more stories. Detached dwellings are defined as single-detached houses.

Commute Mode

For this research, commute mode is divide into two types. The first type is an automobile based commute, meaning the households journey to work is by car, truck or van as a driver or passenger. The second type is non-automobile based commute. The households journey to work for this category includes the following commute modes: bicycle, motorcycle, taxicab, public transit or walking.

3.4.2 Four Categories

Based on the two variables of dwelling type and commute mode, four categories are created that range from most urban to most suburban. The most urban category features a non-automobile based commute and an attached dwelling. Following methodically is the category featuring the variables of an automobile based commute and an attached dwelling; second to the most urban category, seen as B) in *Table 3*. Further, another category features a non-automobile based commute and a detached dwelling; this is associated for the purposes of this research as a secondary suburban category, seen as C) in *Table 3*. The most suburban category features the inverse - an automobile based commute and a detached dwelling. The total of four categories exhaust all combinations with the variables of interest. The categories are in established in an organizational fashion for the purposes of this research, but are to be thought of on a spectrum of ways of living. The organization between most urban and most suburban can be fluid and re-arranged as necessary for support to the data.

Table 3: Variable Combinations

Variable Combinations		
Commute Mode	**Dwelling Type**	**Way of living**
A) Non-automobile based commute	Attached	Most urban
B) Automobile based commute	Attached	
C) Non-automobile based commute	Detached	
D) Automobile based commute	Detached	Most suburban

Categorizing Suburban & Urban

The suburban lifestyle category is based on previous research by Moos and Mendez (2015). From the literature on North American suburbs, the most common defining characteristics include single-detached houses and individual car usage (Beauregard, 2006; Harris, 2004; Harvey, 1989[1985]; Hayden, 2003; Jackson, 1985; Teaford, 2008). Operationalizing these two variables in the suburban-urban range allows for a comparison between two seemingly opposite ways of living. The urban category features living in an attached dwelling and having a non-automobile based commute. This is based on the traditional ideals of North Americans living in urban cores with high-density commercial, business and residential landscapes (Filion, Bunting, Pavlic, & Langlois, 2010). If this analysis was to be done internationally, the concepts of urban and suburban would require modifications.

3.4.3 Methods for Research Question One

The first research question is how suburban is the total population in Toronto, Montreal and Vancouver? To answer this research question, we use Statistics Canada Census data from 1996, 2006 and 2011. The census data was filtered by the three CMA's, Toronto, Montreal and Vancouver and extracted for each of the four categories. The data was compiled in a data-sheet to calculate the percentage of the population within each category. Graphs showing the data were used to visually display and analyze the changes between each census year.

3.4.4 Methods for Research Question Two

The second research question is how suburban is the young adult population in Toronto, Montreal and Vancouver? For this, data was extracted on all four categories, see *Table 3*, within each CMA for the young adult households ages 25 to 34 years old. The percentage of the young adult population within each category was calculated by dividing the total of the young adult population by the sum of the total population. Further, graphs were created to present each of the categories in *Table 3*, which includes all three census years. This set of graphs was created separately for each CMA. A final graph was created that compares the all three CMA's in each of the four categories.

3.4.5 Methods for Research Question Three

The third research question is how are the young adults' transitioning through lifestyle categories as they age in each CMA?

Temporal data analysis was conducted using the 2001 and 2006 Census data and 2006 and 2011 Census data. Data from the 2001 Census on the young adults, ages 25 to 34 years old was extracted for each category in all three CMA's. Data from the 2006 Census was extracted on the population ages 30 to 39 years old. It is assumed that relatively the same cohort could be captured 5 years later in the Census data. The population would have aged from 25 to 30 and 34 to 39 years old from 2001 to 2006. By attempting to 'track' a cohort through Census data as they age, we can analyze the approximate change in distribution of the population between the four lifestyle categories. This process was repeated using the 2006 and 2011 Census data. From the 2006 Census, data on the young adults ages 25 to 34 years old was extracted for each lifestyle category in each CMA. Assuming this cohort could 'tracked' as they

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aged 5 years between censuses, we used the 2011 Census data to pull information on 30 to 39 year olds in each lifestyle category in each CMA.

3.4.6 Data Decisions

Ages

The young adults of interest are ages 25 to 34 years old. The selection of the young adult cohort does not mean we assume they all share the same experience. Rather they may share "similar constraints, opportunities and or/preferences" (Moos, Pfeiffer & Vinodrai, 2018, p.6). The age range is suitable as a way to study young adults "who have in general completed post-secondary education and are likely entering the housing and labour market for the first time" (ibid. p. 6).

It is recognized that there is 5-year gap between the census years of 1996 to 2001. For the 2001 Census, the age groupings are by 10 years rather than 5 years as seen in 2006 and 2011. Therefore, next age range available is 35 to 44 year olds in the 2001 Census. Analysis is not possible on the population ages 30 to 39 in 2001. Using the 2001-2006 Censuses and 2006-2011 Censuses for tracking temporal changes generated sufficient findings for the purposes and scope of this research.

Census Years

There is consistent data available for the three CMAs over three census years of 1996, 2006 and 2011. Statistics Canada Census data was selected for these three census years to analyze how young adult lifestyles were grouped according to the selected variables. Further analyze focused on how the lifestyles changed overtime and comparatively between Toronto, Montreal and Vancouver.

The three census years were chosen as they each had the same variable categories for commute mode and dwelling type. The age divisions for young adults was consistent across all three census years as well. Ensuring the consistency and availability of data between censuses allows for direct comparisons. When the 2016 Census data is released in a synthesized format, it could be integrated into the analysis.

Census & Data Limitations

The three variables of interest did not have all information consistently collected prior to 1996. Hierarchical, household level data from 2011 and 2006 was selected for the purposes of comparison between the populations in Toronto, Montreal and Vancouver. The 1996 data is from the public use micro data household file on all three CMA's.

In 2011, there was a change in the status of the census from mandatory to voluntary in Canada. We acknowledge that the data at the individual and regional specific level can be unreliable given the circumstances. At the CMA and aggregate level at which this data is utilized, the data quality should not be impacted.

The intention is to measure the overarching patterns in the data and provide insight into those of interest and significance based on the analysis. This research does not identify the processes behind the overarching patterns that directly indicate preference and those factors connected to individuals' choice.

3.5 Findings
3.5.1 Research Question 1: All Households

The following analysis walks through each urban and suburban way of living to answer the first research question of how suburban the total population is comparatively between Toronto, Montreal and Vancouver. Initial analysis shows the majority of the total population leads suburban lives in all three CMAs. Minor variations exist between the three cities regarding if the population has been stable, increased, or decreased in the most suburban category.

In Montreal, there was a 3 percent increase from 32 to 35 percent of households in the most suburban category from 1996 to 2011. The assumed or excepted increase in suburbanization is demonstrated by the 3 percent increase in households living in single detached dwellings with an automobile based commute. In Vancouver, the total share of households living a suburban lifestyle decreased from 41 percent in 1996 to 31 percent by 2011; this 10 percent decrease establishes that households are not necessarily suburbanizing, but rather shifting their lifestyles away from living in detached dwellings and using automobiles. At 39 percent, Toronto was the only CMA that saw a stable percentage of households over all three census years in the category capturing the most suburban way of living. Other lifestyle categories have seen greater fluctuations over the census years.

The trend of living in a detached dwelling with a non-automobile based commute appears to be on the rise in all three CMA's. Although the category only includes a maximum of 10-percent of the share of households.

To further analyze the trend of declining car usage, we can look to the category of living in an attached dwelling with an automobile based commute. In Toronto and Montreal, there was a decrease from 35 to 30 percent from 1996 to 2006. This remained stable into 2011. In Montreal, there was also a decrease from 41 to 35 percent, and then a consistent share of households remained in 2011. Toronto and Montreal shared similar trends over the census years whereas Vancouver did not. Vancouver saw an increase of 3 percent from 36 to 39 percent in the number of households in this category. Recognizing the fluctuations over time, it is important to note that overall, the second highest shares of households in all three CMA's fall into this category of living in an attached dwelling with a non-automobile based commute.

In the most urban category, the total population trends varied between the three CMAs. The share of the population remained constant at 24 percent in Montreal and 21 percent in Toronto over the 15-year census period. In Vancouver, the percentage of the population increased steadily from 17 percent in 1996 up to 23 percent by 2011. The increasing percentage over time in Vancouver may be connected to the growth of condominium and apartments developments as well as the decreasing affordability of detached housing (Moos, 2016).

The total population data shows a diversity of lifestyles between the three CMA's. This diversity in lifestyles is further emphasized and seen in pronounced distributions of the young adult households.
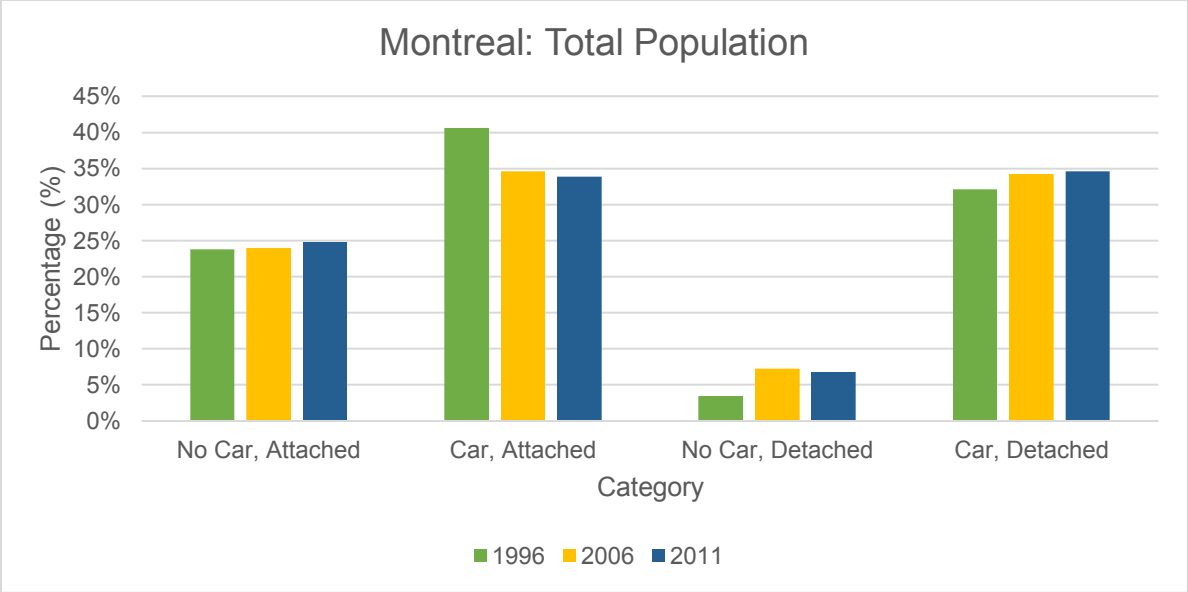
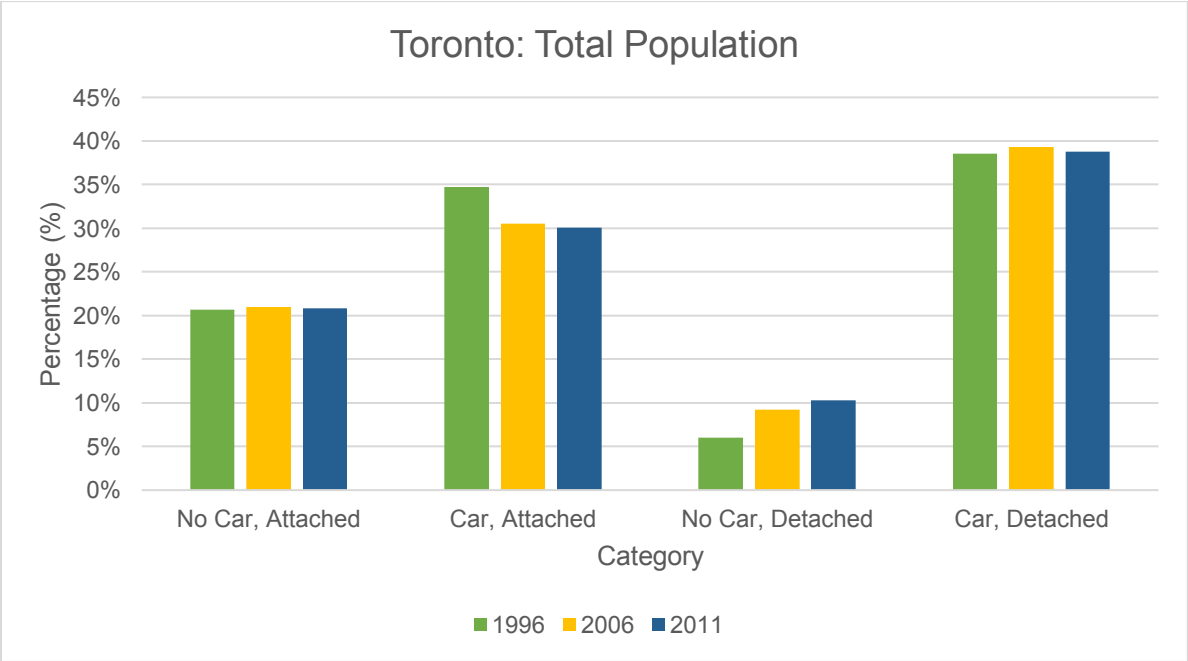*Figure 3-1: Share of all households in Montreal from 1996, 2006, 2011 censuses*

Figure 3-2: Share of all households in Toronto from 1996, 2006 and 2011 censuses
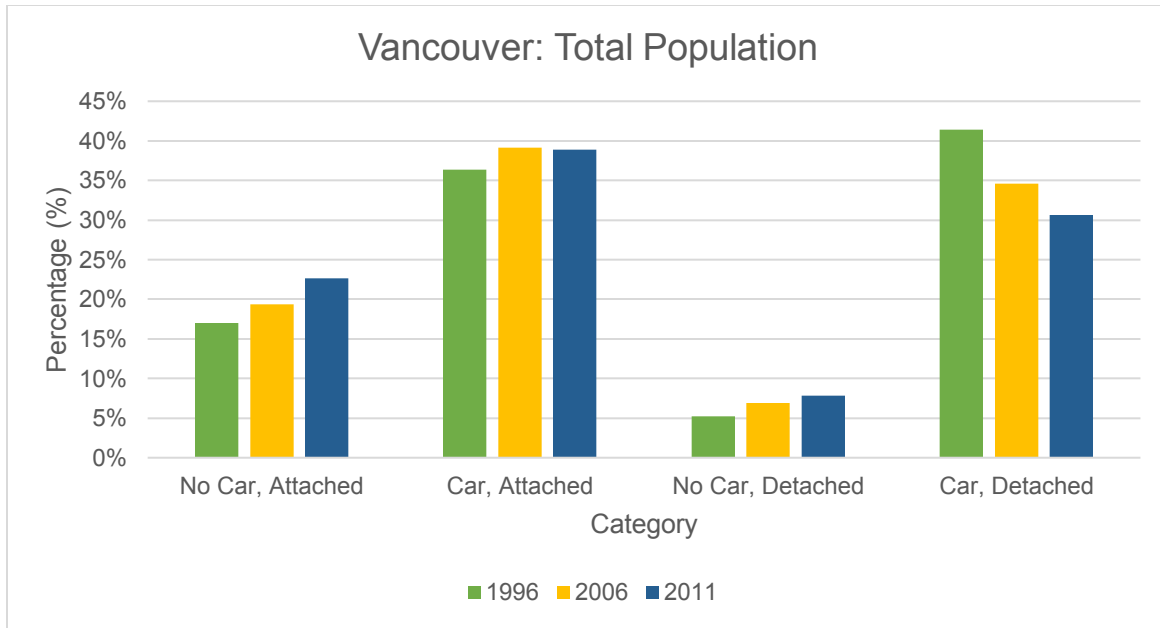
Figure 3-2: Share of all households in Vancouver from 1996, 2006 and 2011 censuses

3.5.2 Research Question 2: Young Adult Households

CMA Comparison

Notable similarities in young adult household's ways of living exist between the three CMAs. Where the variable of attached dwelling is considered, we see the highest share of young adult households in Toronto, Montreal and Vancouver. More young adults, across all three CMAs, appear to live in attached dwellings. These dwellings are commonly found higher density environments. This similarity in the way of living is notable, as it is regardless of the commute mode. Toronto, Montreal and Vancouver each have different housing landscapes in terms of cost, availability and built form options.

The commute mode data from all three CMA's does not provide strong support for the notion that fewer young adults are using personal vehicles for their commute. Rather the commute mode data shows the young adults in all three CMA's are not

suburbanizing in the traditional way by living in single detached houses. Instead, they are living in higher density environments with or without a car.

Toronto, Montreal and Vancouver all offer high-density housing environments, and amenities in close proximity. High-density environments often offer attached dwellings, and according to the 2011 Census data this is seemingly where a majority of young adults are living. Vancouver specifically shows young adults embracing the urban lifestyle with the highest shares of young adult households in the categories with attached dwellings.

The variable of dwelling type appears to be a key determinant in the lifestyle inhabited by young adults. Although Canada continues to be known as "suburban nation" (Gordon et al., 2018) the findings from the three largest CMAs show young adults are breaking away from the "suburban nation" norms more than ever before. In the most suburban category, none of the CMAs saw an increase in the share of the young adult households. No CMA has more than 30 percent of young adult households in the most suburban category.

The comparison above compares how suburban the ways of living young adult houses are between each CMA. To follow, the next analysis walks through each CMA individually and with greater detail on population distributions discovered. How the young adult households embrace the suburban ways of living is different in each CMA.
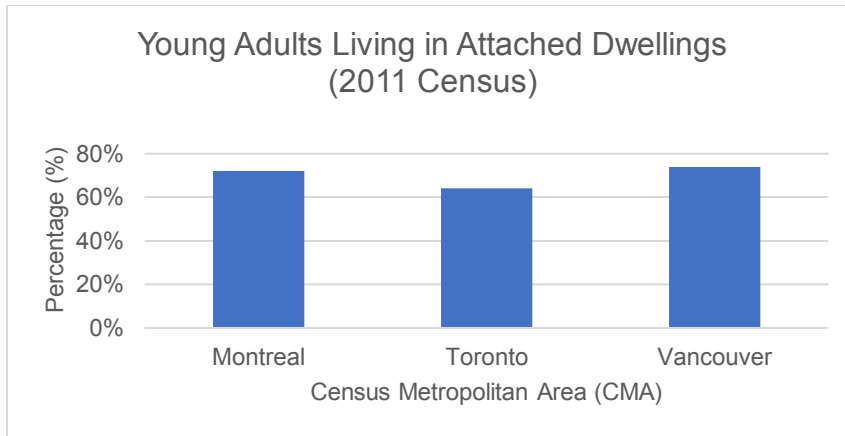
Figure 3-3: Young adult households living in attached dwellings according to 2011 Census

Montreal

In Montreal, the share of young adult households aged 25 to 34, appeared to live suburbanism ways of living overall. Young adult households are seen in higher percentages in the urban lifestyle categories. The share of young adults in the most urban category increased from 28 percent in 1996 to 33 percent in 2011. This category held the second highest shares. The category with the highest share of young adults in 2011 was living in an attached dwelling with an automobile based commute. The trend over time was a steady decrease from 46 to 38 percent. This may indicate the shift away from an automobile based commute.

Explanation for the decrease in the attached, automobile commute category may be related to one of many theories. These include the declining rate of young adults holding licenses, the increasing cost of fuel and the growing environmental conscious of young adults. This could also be connected to the improvement of Montreal's Metro public transit system, meaning more households are shifting to alternative commute modes (Cournoyer-Gendron, 2017). Additionally, there has been an increasing availability of townhouses, condominiums and apartments in the city core (Moser et al., 2018).

Building on the idea of young adult households shifting away from the automobile, we can see that this may be an isolated pattern to those in attached dwellings. The category of living in a detached dwelling with a non-automobile based commute held, at most in 2006, had only 5 percent of all young adult households. The overall low percentage is likely reflective of the location of detached housing. Most detached houses are located in areas that are transit-starved and require a car to access basic amenities, services and workplaces.

Reflecting on the lifestyle categories thus far in Montreal, it appears that most young adults are not leading very suburban lives. In the most suburban category classified as living in a detached dwelling with an automobile based commute, the share of young adult households stayed consistent at approximately 24 percent. Montreal is the only one of the three CMA's with such stability in this category. The lack of growth supports the idea that young adults are favoring more urban lifestyles in the city.

In Montreal, it is apparent that there is slower transition by young adults to a suburban way of living. Many young adults in Montreal are living urban lifestyles, for extended periods of time. How young adults are living in both urban and suburban ways of life will impact the housing environment.
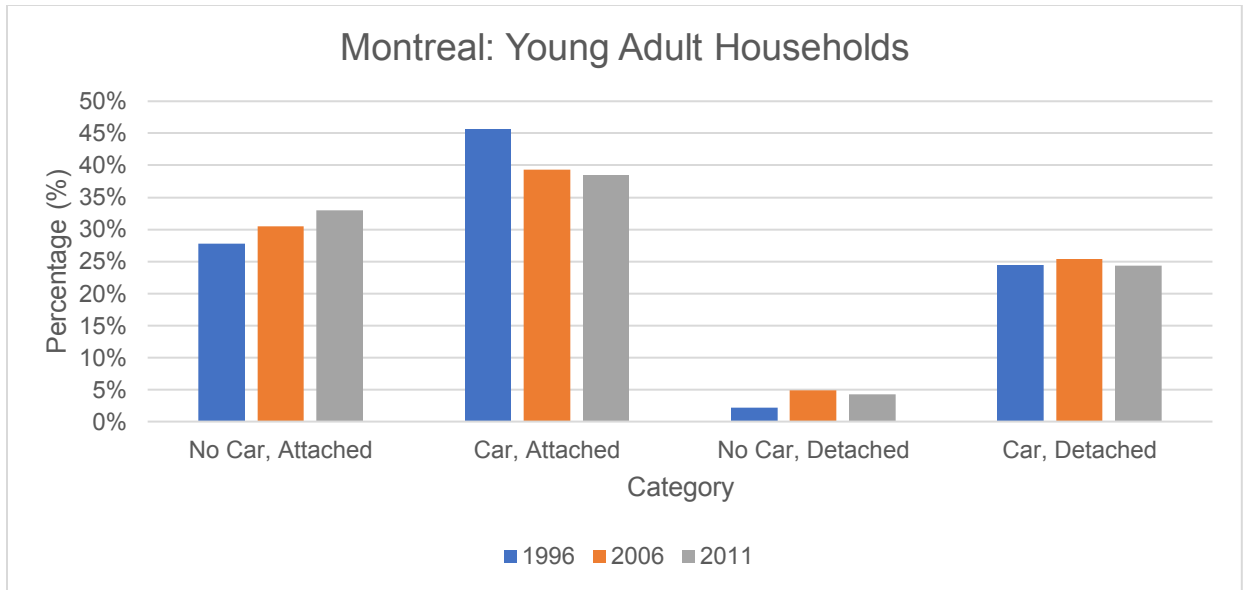
Figure 3-4: Share of young adult households in Montreal from 1996, 2006 and 2011 censuses

Toronto

In Toronto, the share of the young adult households in the most urban category fluctuated around 26 to 29 percent over the census years. Toronto is the only CMA without a consistent increase over time in this category. The most urban and most suburban category both captured approximately the same share of young adult households. Toronto is a unique case in terms of the how suburban the young adult population is.

The data on young adult's suburban ways of living is shown in the most suburban category. From 1996 to 2006, the percentage of young adult households increased from 24 percent to 31 percent and from 2006 to 2011, the percentage decreased to 28 percent. This fluctuation may be related to the rising price of single detached houses Toronto. Generally, it appears that young adults in Toronto are shifting to suburban lifestyles or, suburbanizing at a slower rate.

The majority of young adults are in an urban lifestyle category of living in an attached dwelling with an automobile based commute. Although, the households share decreased from 44 percent in 1996 to 35 percent in 2006. The percentage of young adult households remained the same in 2011; the stability in this category could be further analyzed with 2016 census data when available.

A rise from 4 to 8 percent of young adult households is in the category of living in a detached dwelling with a non-automobile based commute. The share leveled off at 8 percent according to the 2011 census. Where a majority of single detached houses are located, the surrounding land uses are often orientated towards cars. An example of this landscape is when large box stores cluster outside of residential subdivisions, but at a distance that is considered out of a walkability range.

Compared to Montreal and Vancouver, Toronto has the lowest share of young adult households in the most urban category in 2011. Toronto's young adults slowly suburbanizing is demonstrated by the fluctuations in the most urban category and minor increases and relative stability in the categories with attached dwellings. The comparison between the three CMA's shows the regional differences in ways of living that may be impacted by the housing stock and affordability.
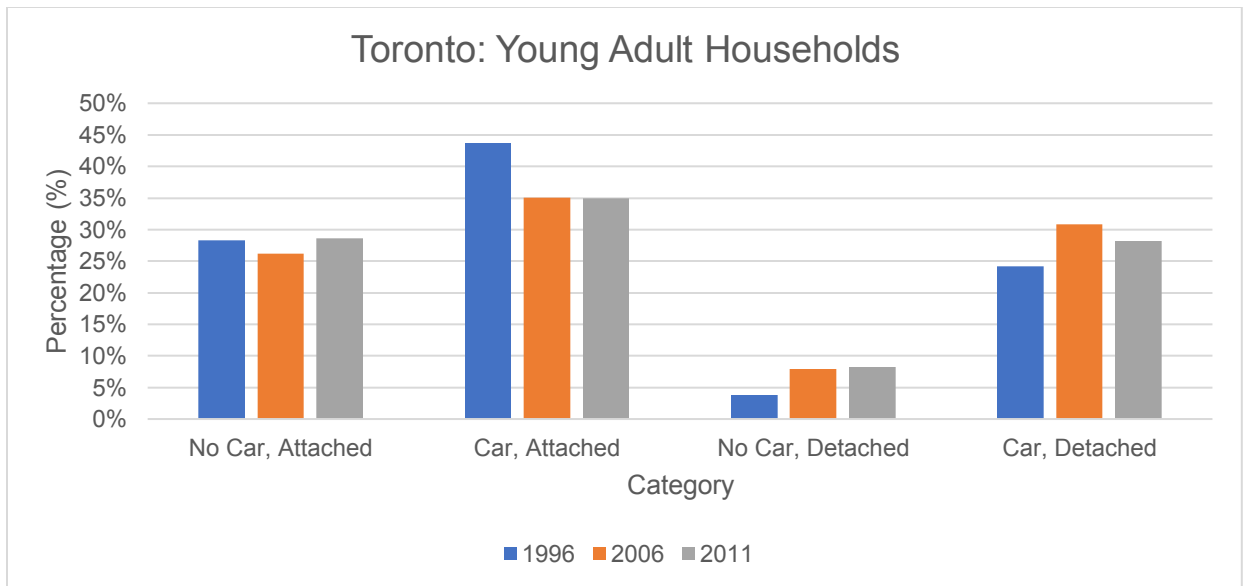
Figure 3-5: Share of all young adult households in Toronto from 1996, 2006 and 2011 censuses

Vancouver

Fewer young adult households are living suburban ways of life in Vancouver than in Toronto or Montreal. This is supported by the increasing shares in the most urban category and the decreasing shares in the most suburban lifestyle category. These two distinct patterns are most clearly presented in Vancouver compared to Toronto or Vancouver.

In Vancouver, the most urban category increased over all three census years – in 2011 it held 38 percent of young adult households. This category is the only one that experienced an increase between each census year. The category of living in an attached dwelling with a non-automobile based commute also held 38 percent of young adult households in 2011. Regardless of their commute mode, young adult households appear to live in attached dwellings.

Interestingly, the category of living in an attached dwelling with an automobile based commute steadily decreased from 49 to 38 percent by 2011. Although, this is still

a relatively high share of young adult households, the decrease over time may point to a slow shift away from an automobile-based commute for future generations of young adults.

Young adults that lived in a detached dwelling with a non-automobile based commute in Vancouver, accounted for only 5 percent of the population. This is comparable household share as in Montreal. Given the growth in the most urban category, it is not surprising to see such a shift away from this suburban lifestyle.

In the most suburban category, a slow decrease of young adult households is evident over the census years. In 1996, 24 percent of young adult households embraced this lifestyle and only 18 percent of households did by 2011. The slow shift away could be related the rapidly increasing cost of single detached houses in the city.

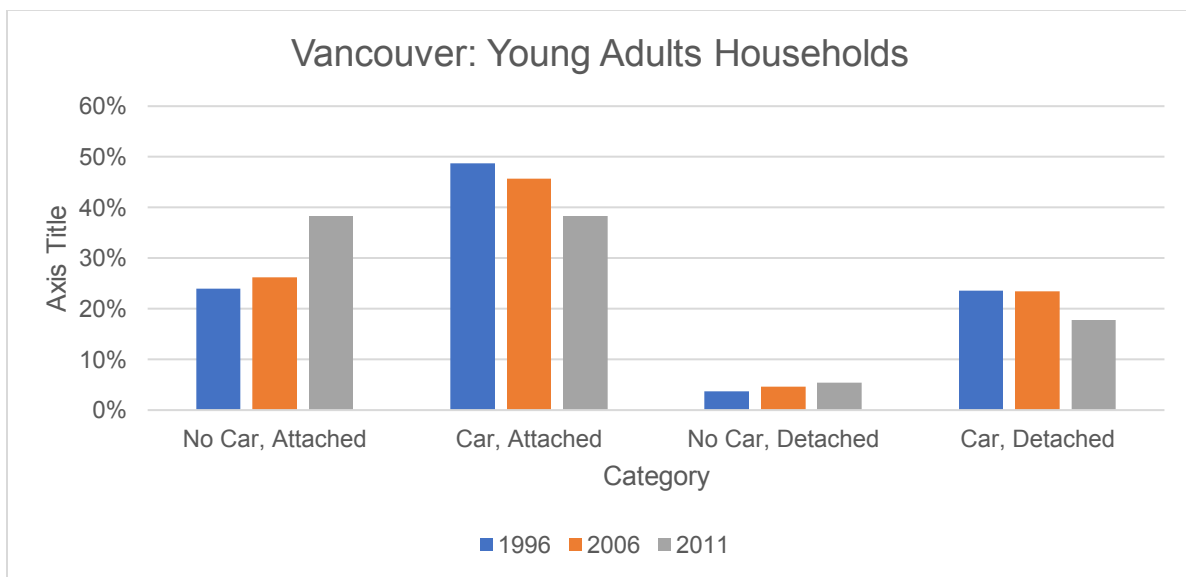*Figure 3-6: Share of all young adult households in Vancouver from 1996, 2006 and 2011 censuses*

3.5.3 Research Question 3

Tracking Young Adult Households from 2001 to 2006
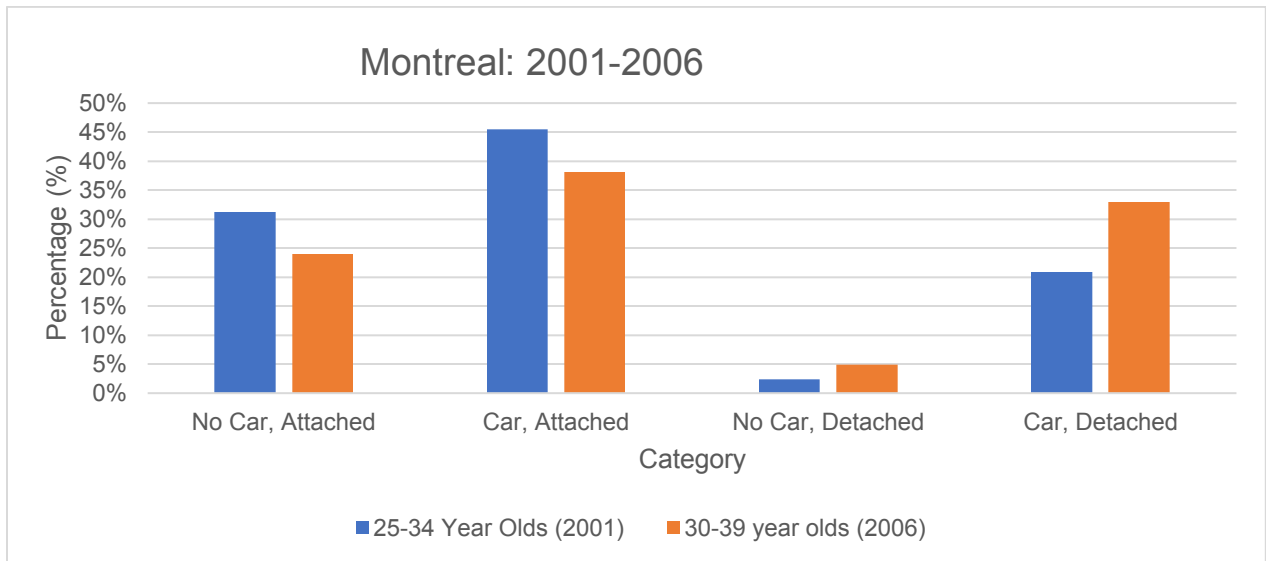

Figure 3-7: Temporal changes of young adult households in Montreal as they aged over the 2001 to 2006 Census
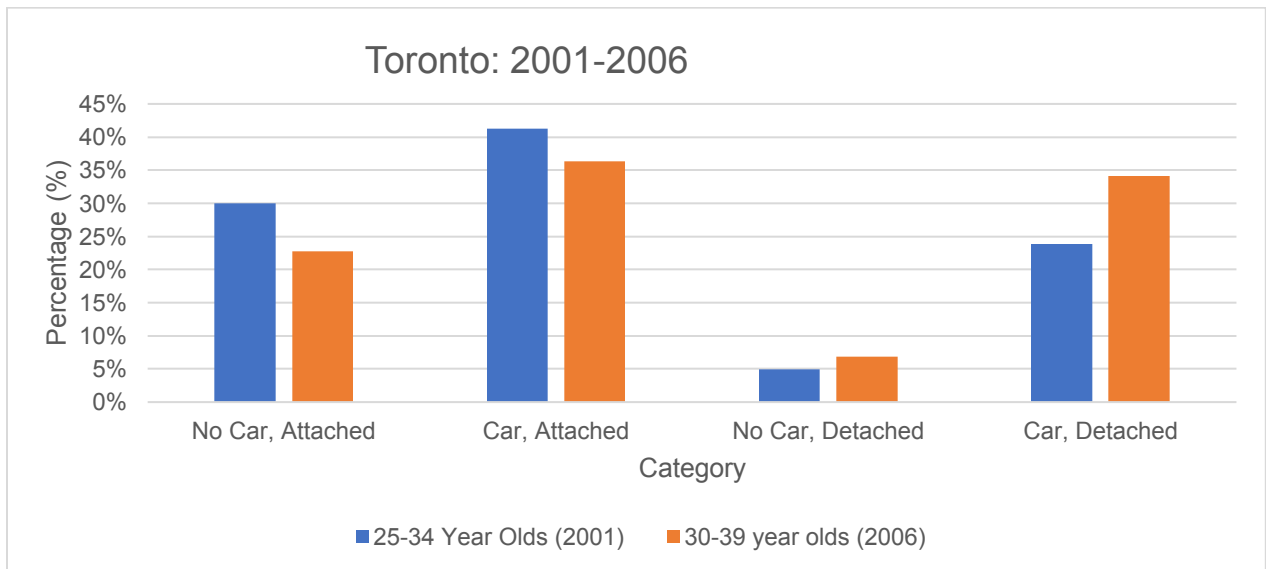

Figure 3-8: Temporal changes of young adult households in Toronto as they aged over 2001 to 2006 Census
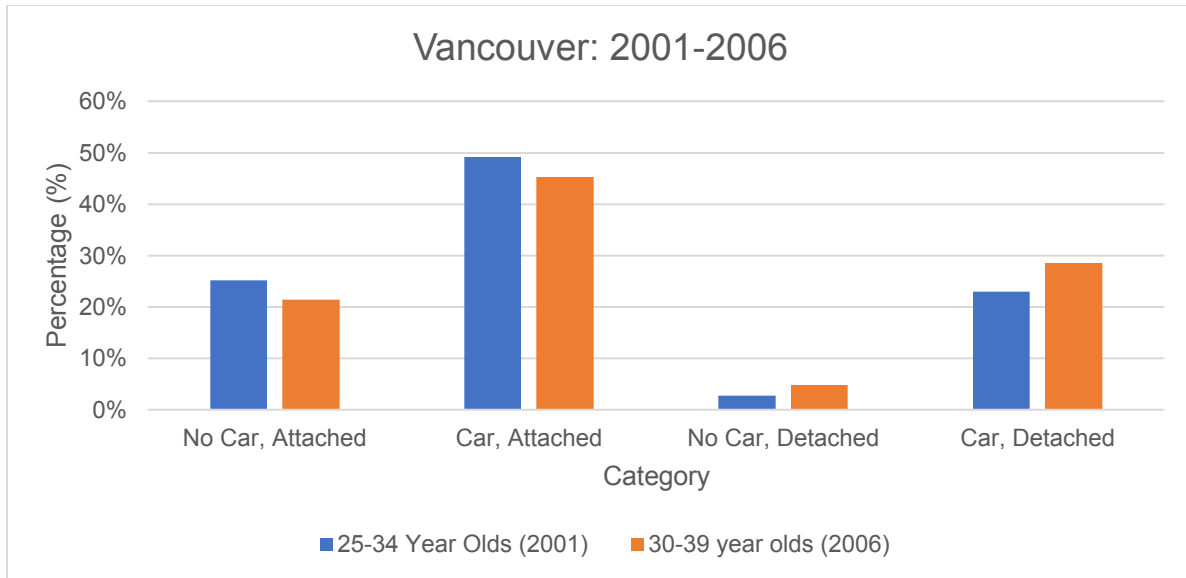
Figure 3-9: Temporal changes of young adult households in Vancouver as they aged over 2001 to 2006 Census

Analysis was completed on the temporal changes of the young adult cohort as they aged between the 2001 to 2006 Census years. The data on young adults was taken first from 2001 when they were ages 25 to 34 (as referred to as the young adults) and from 2006 when they were 30 to 39 years old. This analysis assumes that generally the same population is captured in both census years.

In Montreal as the young adults aged from 2001 to 2006, there was a decrease in the two categories with attached dwellings and an increase in the two categories with detached dwellings. By 2006, in the urban lifestyle category of living in attached dwelling with a non-automobile based commute, there were only 24 percent of young adult households, compared to 31 percent in 2001. The percentage of young adults dropped from 46 to 38 percent in the category of living in an attached dwelling with an automobile based commute as well. The two most urban lifestyle categories still held the majority of the young adult households in Montreal despite their declines.

In the most suburban category in Montreal, there was an increase of 12 percent from 2001 to 2006. As the population aged, the majority of households shifted to suburban lifestyles in detached dwellings with automobile based commutes. More 30 to 39 years could be found in the most suburban category compared to the most urban. This finding demonstrates our hypothesis that young adults are still suburbanizing.

Amongst Toronto, Montreal and Vancouver three similar patterns occurred as the young adults aged. The first was the general decrease in the shares of the population in the two urban categories, defined by the attached dwelling. The second was the increase in the suburban category with an automobile based commute and living in a detached dwelling. The third was that the category of living in an attached dwelling with an automobile based commute held the highest share of households in all three CMA's.

As young adults across the country age in three of the densest CMA's, similar trends appear related to their housing and commute patterns. Although the young adults appear to be suburbanizing as they age, the category of living in an attached dwelling with automobile based commute still held the highest share of populations in both census years for the cohorts of 25-34 years and 30-39 year olds. The relatively high share of households in the attached dwelling categories proves the hypothesis of young adults transitioning to suburban ways of living as they age, wrong. Further, this may indicate young adults attempting to age in the city.
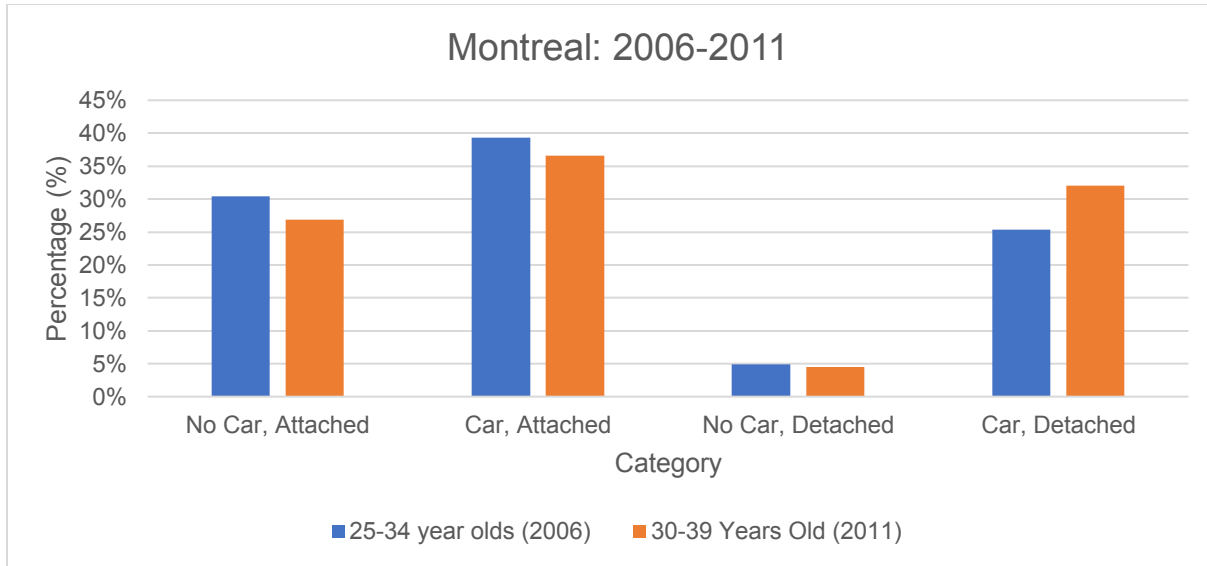
Figure 3-10: Temporal Changes of young adult households in Montreal as they aged over the 2006 to 2011 Census
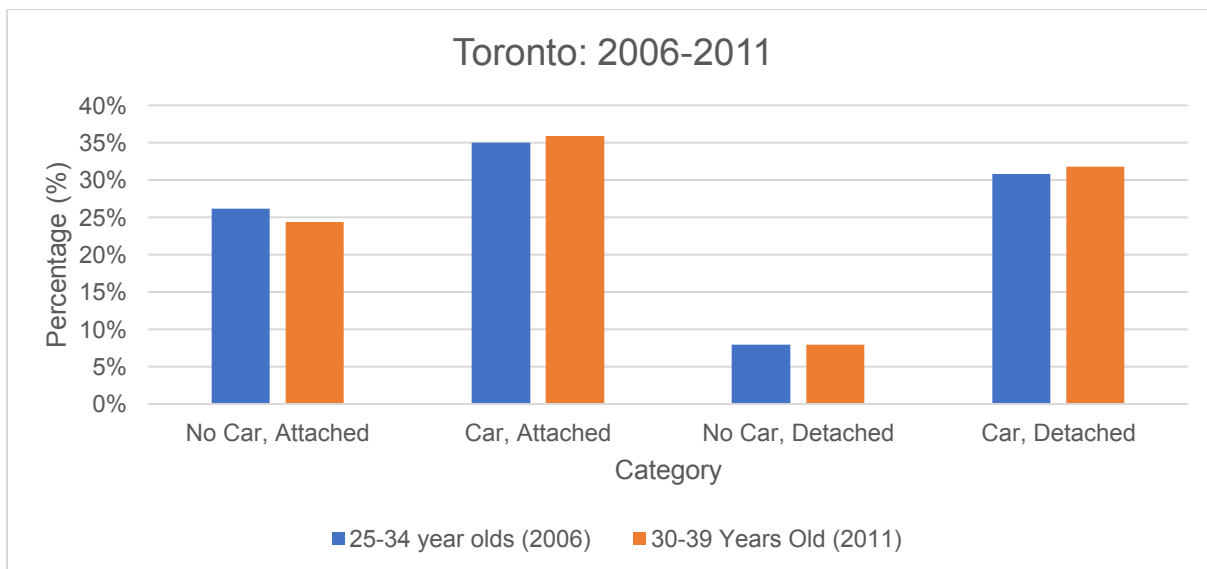
Figure 3-11: Temporal changes of young adult households in Toronto as they aged over the 2006 to 2011 Census
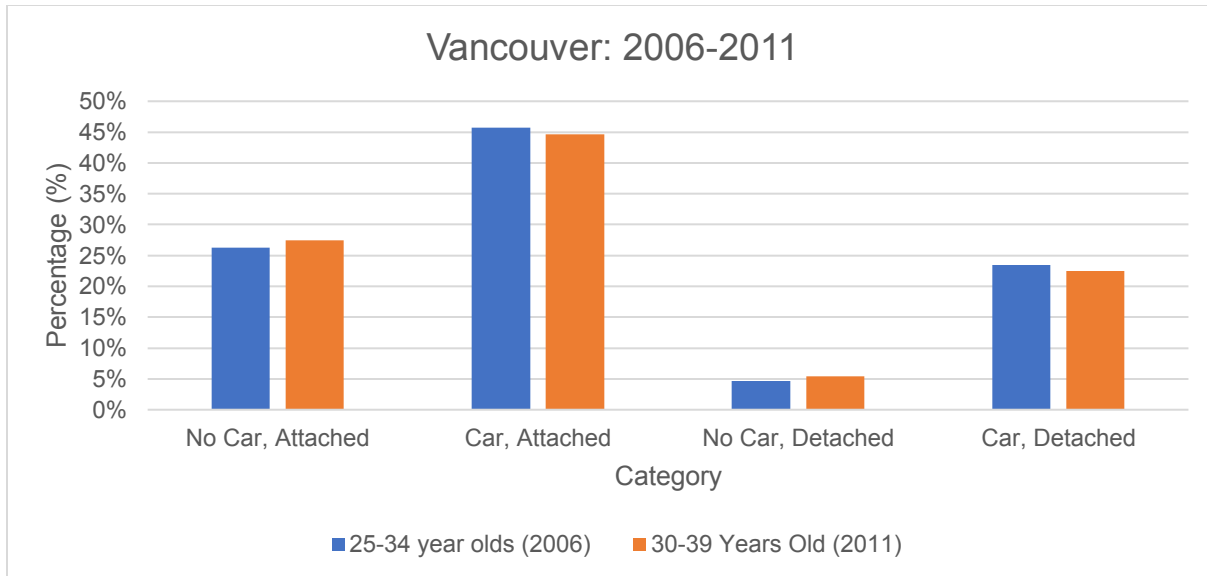
Figure 3-12: Temporal changes of young adult households in Vancouver as they aged over the 2006 to 2011 Census

The second part of tracking changes to young adult lifestyles was completed by analysis of census data from 2006 and 2011. In 2006, data on the young adults ages 24 to 25 years old was compared to the cohort as they aged to ages 30 to 39 by 2011. The main finding of this analysis using the more recent census data is that a large share of young adult households as they age are remaining in urban lifestyles and not suburbanizing.

Finding from the CMAs show that young adults across Canada are not trading their attached dwellings and urban lifestyles just yet. The decrease in the most urban category with attached dwelling and non-automobile based commute, in Montreal was the most significant at 3 percent; dropping from 30 percent to 27 percent as the cohort aged. In Toronto, the decrease in the share of households was only 2 percent and 1 percent in Vancouver. Within all three CMA's the share of households still living an urban lifestyle was approximately 25 to 30 percent.

As seen in Research Questions 3, the analysis of young adults' households as they aged, the category of living in an attached dwelling with automobile based commute held a stable and high share of households in all three CMAs. The young adults may be adding a car into their life, later on but continuing to live in attach dwellings. In Montreal, Toronto and Vancouver, 36 percent of the 30 to 39 year olds are living in an attached dwelling with an automobile based commute, therefore adding a car into their life later on.

Montreal is the only CMA where an increase in the most suburban category of living in a detached dwelling with an automobile based commute occurred. The share of households increased from 25 to 32 percent as the cohort aged. Montreal is in line with the assumed hypothesis that young adults are suburbanizing as they age and moving to this lifestyle category. Toronto experienced only a 1 percent increase to 32 percent of households in 2011 and Vancouver saw a 1 percent decrease to 22 percent of households.

The assumed flee to the suburbs as households age appears to be a less likely event for young adults in Toronto and Vancouver particularly. The young adult households are making the biggest changes related to their commute modes rather than dwelling type as they age.

3.6 Conclusions

3.6.1 What's Next?

The census data analysis shows the differences between how suburban ways of living can be pursued by young adults and the total population in three of the largest CMAs across Canada. The results indicate a greater magnitude of young adults in

Montreal, Toronto and Vancouver are living urban lifestyles and not rapidly

suburbanizing in high volumes. Fewer young adults appear to be shifting to suburban

lifestyles as they age, although in Montreal, some young adults were suburbanizing to

some degree. Each CMA features anomalies unique to their populations lifestyle

patterns. Additional factors such as the physical sprawl of the city, cost of living and cost

of real-estate could likely be closely related to the various anomalies as indicated by

other academic literature.

3.6.2 Toronto, Montreal and Vancouver Summary

The young adults appear to be taking advantage of the housing opportunities that

the CMA's offer. Toronto seems to be a housing landscape that young adults are

fluctuating between attached and detached – as indicated by the minor variations in the

most urban and suburban category of the census years. In Montreal, young adult

households are more highly represented in the urban categories compared to the total

population. Their shifts toward suburban lifestyles is evident as young adults age into

their 30's; this could be related to the sprawl of single detached houses available.

Young adults in Vancouver are found in higher proportions in urban lifestyles than in

any other CMA. A declining number of households are aging into suburban lifestyles.

The temporal data suggests young adults are living urban ways of life, for longer

periods of time. It is evident that high shares of young adults, as they age, are

continuing to live in attached dwellings with or without an automobile based commute.

All three CMA's appear to facilitate the longevity of this urban lifestyle for young adults

by continuing to grow their condominium and apartment stocks. The commute mode

preference is to still use an automobile. This is in contrast to the literature which

investigates the declining trend of young adults driving. Often this literature is based on specific data on licensing rates by young adults or data on the car buyers age-ranges. The literature on the decrease in young adults driving also focuses on change over time, whereas this research looks at the overall magnitude of change in three large CMAs.

3.6.3 Relevance to Planning

When considering housing needs in the future, many municipalities in Canada should consider the populations present and growing. In municipalities where younger populations are booming, it is critical to consider the potential greater need for attached dwellings. Given the urban and suburban ways of living by the total population, it will be important to maintain the variety of dwelling types for transitions between lifestyles to occur.

Within large CMAs such as Toronto, Montreal and Vancouver, it is critical to plan for future housing needs. The understanding of how young adults change their ways of living based on dwelling type and commute mode, will require large cities to analyze their housing stock surpluses and shortfalls as well as their transportation networks. It is the municipalities in Canada responsibility to best serve the local populations' changing needs.

Chapter 4: Conclusion

The following chapter contextualizes the findings of both manuscripts presented in this thesis within the broader scope of young adult housing life cycles. The discussion situates the findings within the Canadian housing and young adult literature and considers how the patterns confirm and challenge the understandings of how suburban young adult populations are. The discussion formulates the basis for the subsequently presented future research and policy recommendations.

4.1 Discussion

The first manuscript asks about young adult's ways of living in Canada. We conduct an analysis at the national scale of the shares of the populations living various lifestyles defined by the variables of commute mode and dwelling type. We found that young adults are less likely to live suburban ways of life from 1996 onwards, but it is still the most common lifestyle at a national scale. This is a pattern identified from the data and related to lifestyles. This research does not provide conclusive information on the lifestyle rational of young adults, as it considered select variables to shape a lifestyle.

These results are especially significant when considering a sustainability perspective. Given that large shares of young adults are not driving and are living in attached dwellings, commonly denser environment, means sustainable lifestyles may be becoming more common. The aggregate impact of this lifestyle change is not sufficient in size as sustainability gains in Canada, as most households are still suburban in their ways of life. We cannot conclude if this pattern of the share of young adults living suburban ways of life will continue to decrease, therefore further research

into the trends of the shares of young adults living various lifestyle is necessary when more census data is available.

From this thesis research, we understand at a national scale the suburban ways of living by young adults and the total population lifestyles. Further, the common urban ways of living may suggest potential for sustainability gains through urban and non-automobile orientated lifestyles over suburban, auto-orientated lifestyles. This is an important consideration for the social consequences of perceived gains of "sustainability-as-density", as explored in this research and based on the work of Quastel et al. (2012).

Based on the findings of the first manuscript, the second manuscript strived to build upon the fundamentals observed at the national scale. The second manuscript uses Toronto, Montreal and Vancouver to look closely at the young adults' suburban ways of living and the apparent changes in lifestyles overtime. A key difference between the two manuscripts is the scale of the data. Further, the manuscripts differ in the number of variables and categories created to frame urban and suburban lifestyles. Again, these categories become refined and precise for the second manuscript, given the conclusions of the first manuscript.

The second manuscript asks about the share of young adults living suburban ways of life in Toronto, Montreal and Vancouver. The research finds that the young adults take on urban ways of living in all three CMAs. Through an analysis of each metropolitan area, the expected pattern of an increase in suburban ways of living as the population ages occurs, but notably higher shares of young adults are still living in attached dwellings. On the broader scale, this finding has implications for planning

policy and how planners should consider the future demand for specific dwellings types, particularly, attached buildings.

The analysis at the metropolitan level agrees with a key finding found at the national level; a majority of all households (total population) are living suburban ways of life. In contrast to the finding at the national level that young adult lifestyles are still by majority suburban, the metropolitan analysis found the opposite. Within the three CMAs, patterns of urban ways of living embrace higher shares of young adult's households. The contrast in findings fits into the broader narrative in the literature, that explains larger CMAs being more progressive in their variety of housing options and often lead the trend away from a traditional life course (Champion, 2001).

Overall, the second manuscript aimed to build upon the findings of the first manuscript, and narrow the information to show more pronounced trends at the census metropolitan level. The three census metropolitan areas facilitate further investigation into the ways of living of young adults, in areas that have experienced intensification and densification. Both manuscripts highlight the importance of differences in suburbanisms embraced by young adult cohorts.

The thesis research completed brings forward the finding that young adults are slowly, if at all, transitioning to suburban ways of living as young are aging. The next step on this topic could be to understand what the factors either economic, social, environmental or political are behind this trend, and why and how young adult suburbanisms occur and differ across Canada. Tracking, understanding and following the share of young adults living suburban and urban ways of life can influence how

planners think about and formulate key housing strategies for future generational demands.

4.2 Limitations of Thesis

There were several research limitations to the quantitative data gathered. The limitations are twofold; first the limitations of the quantitative methods chosen and second, the reliability of the Statistics Canada data.

The methods used were a quantitative cohort study. A quantitative research approach typically features a close-ended question framed as a hypothesis aiming to prove or disprove a theory or idea (Creswell, 2014). In the case of this research, the umbrella hypothesis was that young adults are living suburban ways of life, and the following examination of Statistics Canada Census and NHS data aimed to uncover what share of young adults are living suburban ways of life, therefore showing if the hypothesis is still true or not. Quantitative research weaknesses are associated with the narrow scope, due to financial and time limitations and a researchers' influence on the project (Johnson et al., 2004). In quantitative research, a researchers' close proximity and human interaction, could influence the outcome of the work without proper checks and precautions taken.

No qualitative study of interviews or focus groups were utilized to answer the research questions. This means some observations and insights into the "why" of the where young adult live and their ways of life is left for future research. Further, the data is representative of young adult ways of life at a macro-scale; therefore, the findings reflect national and regional level patterns. Further analysis at the Census Tract (CT) level could show comparative or contrasting patterns.

The second part of the limitations is the quality of data from Statistics Canada. The data comes from surveys with a cross-sectional design. The long Census form is collected on a sample basis (Statistics Canada, 2015). In 1996 and 2001 and 2006 a sample was done for one in five households – to ensure that subgroups are properly represented, a two-step generalized least squares estimation procedure is completed (ibid.). In 2011, the same was one in three households to ensure accuracy of the data with a lower response rate due to the change in status from mandatory to optional (ibid.).

4.3 Future Research Recommendations

This study has filled gaps in understanding of how the shares of young adults living suburban ways of life has fluctuated as cohorts age. Future research could begin with qualitative methods, such as interviews with young adults, to understand the reasons for preferences in suburban and urban ways of living. For instance, longitudinal qualitative research with young adults as they age may produce a better depiction of, how and why and when, changes in ways of living occur over time. Similarly, integrating detailed statistical modeling of the census data collected may be able to predict the movement of future young adult cohorts such as the Millennials and Generation Z.

Similar to Moos and Mendez's (2015) findings that a majority of the population are living suburban ways of life, this study showed a higher share of the total population falling into this 'most suburban' category. Additional research to include more CMAs with smaller and medium sized populations could explore if a similar distribution of the share of the population exists between the most suburban and most urban categories.

Through GIS mapping, the data on the share of the populations living suburban ways of life across Canada could be spatially displayed and analyzed.

Exploring the patterns of the shares of young adult's suburban ways of living at the Census Tract (CT) level and using CMAs with continuous and predicted population growth, could identify if smaller shares of young adults are living suburban ways of life in those locations as well. The book *Still Detached and Subdivided?* demonstrated that aspects of suburbanisms can occur simultaneously in urban and suburban places (Moos & Walter-Joseph, 2017). A detailed understanding of where patterns of mostly urban or suburban ways of living occur could be constructed using more locations. Further, the book *Still Detached and Subdivided?* displayed some trends of ways of living through mapping, which can be used as a baseline for future versions of the research or for updating the research.

In the current research, indicators of suburban ways of living included tenure, dwelling type and mode of journey to work – these indicators are simple for defining suburbanisms. Echoing Moos and Mendez's (2015) recommendation, future research could be completed on suburban ways of living with additional indicators. These additional indicators could include economic, social and environmental features commonly associated with suburbanisms. With additional indicators, relationships between suburban ways of living, the physical environment and the age of the population may reveal new and more nuanced insights.

4.4 Policy & Planning Recommendations

Using suburbanisms to understand the distribution of the share of populations lifestyles may be a meaningful approach to future housing planning and policy. It may

indicate that our current housing landscape may not accommodate the future demand for the different lifestyles lived by young adult populations. Continuing planning and development of auto-orientated, single-detached neighbourhoods could be an ineffective and inefficient logic to house the future generations. This is because current patterns demonstrated in this thesis and beyond the scope of research show a shift away from the traditional housing ladder progressions due to preference of close proximity to amenities, common precarious work, extended educational careers and delays in starting a family, to list a few. It is critical to recognize the lack of homogeneity in ways of living of the future generations to plan stable communities.

1. The housing strategies may require a dynamic nature, with more frequent updates by planners based on both on-going qualitative and quantitative studies of young adult populations. The findings of the movement of shares of young adults through various lifestyles and understanding their preferences for dwelling type and commute mode may result in the future of highly efficient housing and transport networks.

2. Considering the dynamic, changing nature of housing preferences, more funding could be allocated by federal, provincial and municipal governments to developers and current landowners to create of a greater diversity of housing types such as low, mid- and high-rise buildings across a range of locations. This funding may allow for a greater mix of housing to be built, which may create a landscape that is stable and could meet the long term needs of dynamic, future generations.

As the share of young adults living suburban ways of life changes, future research will be necessary to understand current trends in ways of living and current preferences. A continuous renewal of our understanding of suburban and urban ways of living will be needed to unpack the unique challenges and needs of young adults housing.

1. We know that young adults are not living suburban and urbans of life in the same manner as previously identified. Young adults' ways of living varies greatly. The predictable ways of living of buying a home and a car, as young adults age, is slowly changing. A large share of young adults renting and driving, while a small share is owning and not driving (Vitale, 2011; Hoolachan, McKee, Moore, & Soaita, 2017). The recommendation to invest in monitoring and further research on how the lifestyles of young adults are changing could lead to informative education and training of future development and policy planners.

2. Young adults' ways of living are variable by definition of dwelling type and automotive use. Further, broader circumstances of economic and social conditions, including but not limited to, income, education, presence of children, family composition can also impact ways of living. Literature has found that young adults are delayed in their housing lifecycles and have lower marriage rates (Karsten, 2007). The recommendation is to have municipal level planning guidelines and Official Plan policy objectives consider a wide range of criteria that can impact ways of living and housing lifecycles as well as a mandatory long-term research during their creation to attempt to improve accuracy and tactfulness of the policies or guidelines.

The share of Canadian young adults living suburban ways of life is decreasing. Therefore, planning policy and decision makers need to consider the reasons behind the changing decisions of young adults to better plan and accommodate the future housing needs. Given the understanding that the share of young adults living suburban ways is changing, future research can dive into and uncover individual's rationales for the change, and further the understanding of how the physical geography, social norms, economic climate and political decisions factor in to the change (Filion in Harris & Lehrer, 2018).

Although the thesis research does not focus on the Millennial generation specifically, rather it captures on a small portion, the significance of the findings on young adults housing and commute patterns contributes to the overall narrative that is zoomed-in on the Millennial generation only. Much of the academic literature and media explains the urbanist lifestyles of the Millennial generation. They are renting at high prices in downtown cores, taking public or active transit when they are beginning employment (Moos, 2015; Rose & Villeneuve, 2006). This is contrary to previous generations (e.g. Baby Boomers) that swiftly moved to the suburban locations at this time in their lifecycles and bought a single-detached house and had a personal car (ibid.). Further, academic research has found that from 50 of the USA's largest cities suggests that "as Millennials purchase homes, they do not move to the suburbs at the same rate as Generation X" (Raymond, Dill & Lee, 2018, p.1). Although, the thesis research does not focus on the Millennial generation per se but rather the findings of

both manuscripts support the over-arching idea that young adults are not living suburban ways of life at the same rate as prior generations.

"Because so much of that urbanization has happened recently and is proceeding so rapidly, a large proportion of the urban world is, in fact, suburban in the ways that we have discussed. Attention should be paid." (Harris & Lehrer, 2018, p.309). The attention paid in this thesis, to a small portion of this field, was the share of young adults living suburban ways of life. The young adults' cohort is of importance to the study because of their potential to shape residential landscapes and influence the efficiency our communities based on where and how they choose to live.

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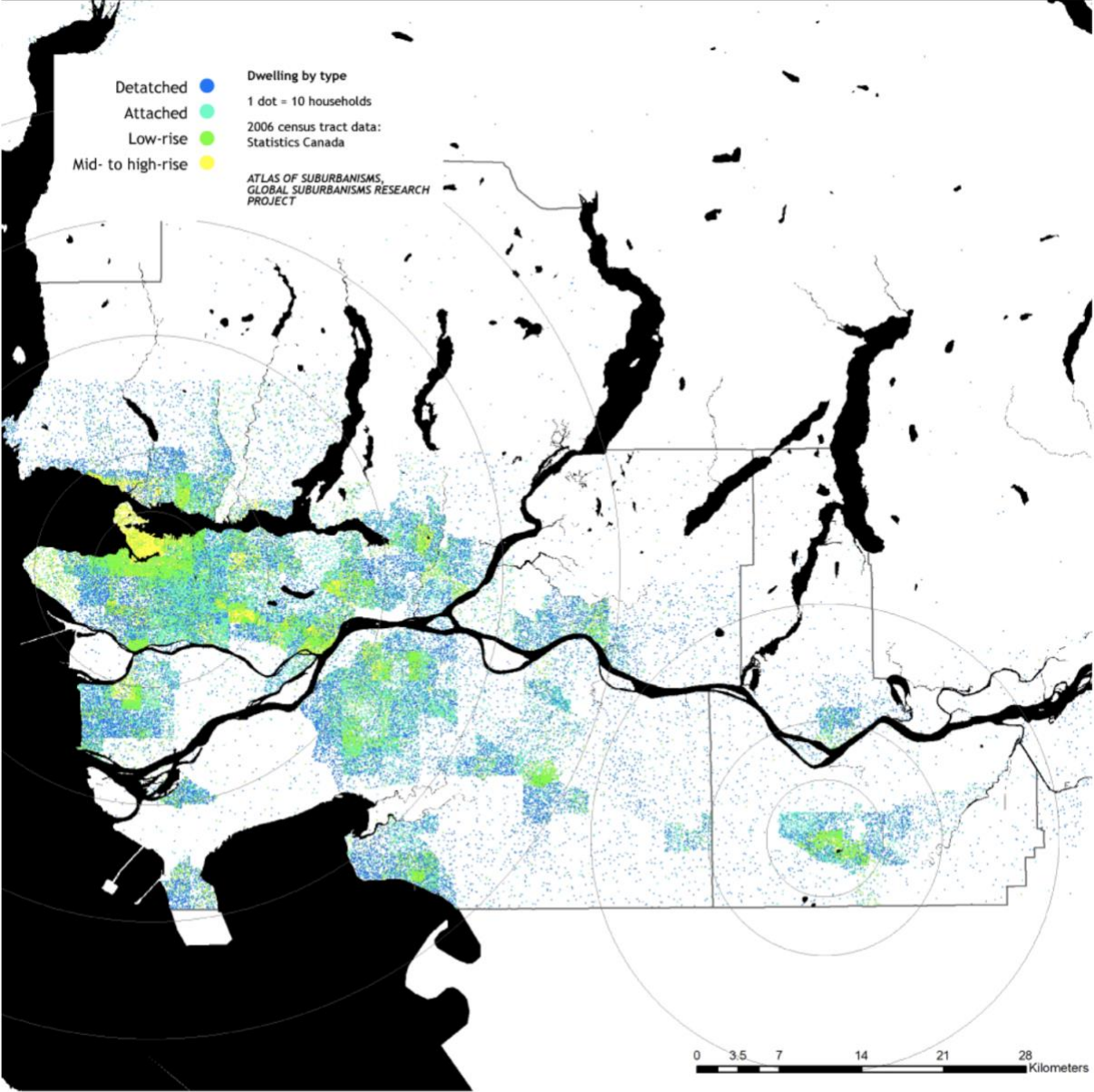
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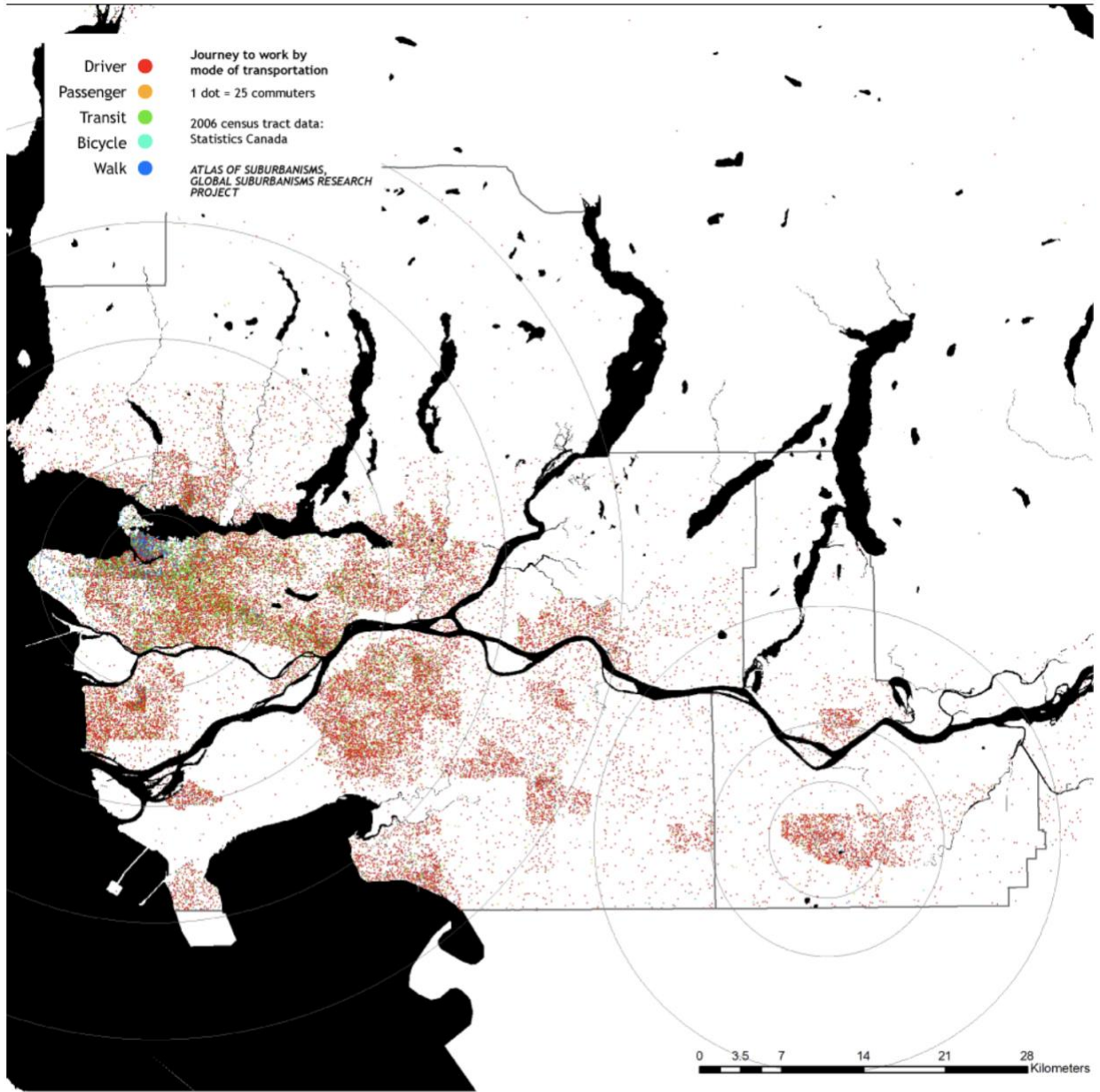Peck, J., Siemiatycki, E., & Wyly, E. (2014). Vancouver's suburban

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Appendix

Dwelling by type

Detatched (blue)
Attached (teal)
Low-rise (green)
Mid- to high-rise (yellow)

1 dot = 10 households

2006 census tract data:
Statistics Canada

*ATLAS OF SUBURBANISMS,
GLOBAL SUBURBANISMS RESEARCH
PROJECT*

0   3.5   7   14   21   28
Kilometers

Vancouver: Dwelling by type

Driver 🔴
Passenger 🟠
Transit 🟢
Bicycle 🔵
Walk 🔵

Journey to work by
mode of transportation

1 dot = 25 commuters

2006 census tract data:
Statistics Canada

*ATLAS OF SUBURBANISMS,
GLOBAL SUBURBANISMS RESEARCH
PROJECT*

Vancouver: Journey to work by mode of transportation

Legend:
- Detatched (blue)
- Attached (teal)
- Low-rise (green)
- Mid- to high-rise (yellow)

Dwelling by type
1 dot = 10 households

2006 census tract data:
Statistics Canada

ATLAS OF SUBURBANISMS,
GLOBAL SUBURBANISMS RESEARCH
PROJECT

0 5 10   20   30   40
Kilometers
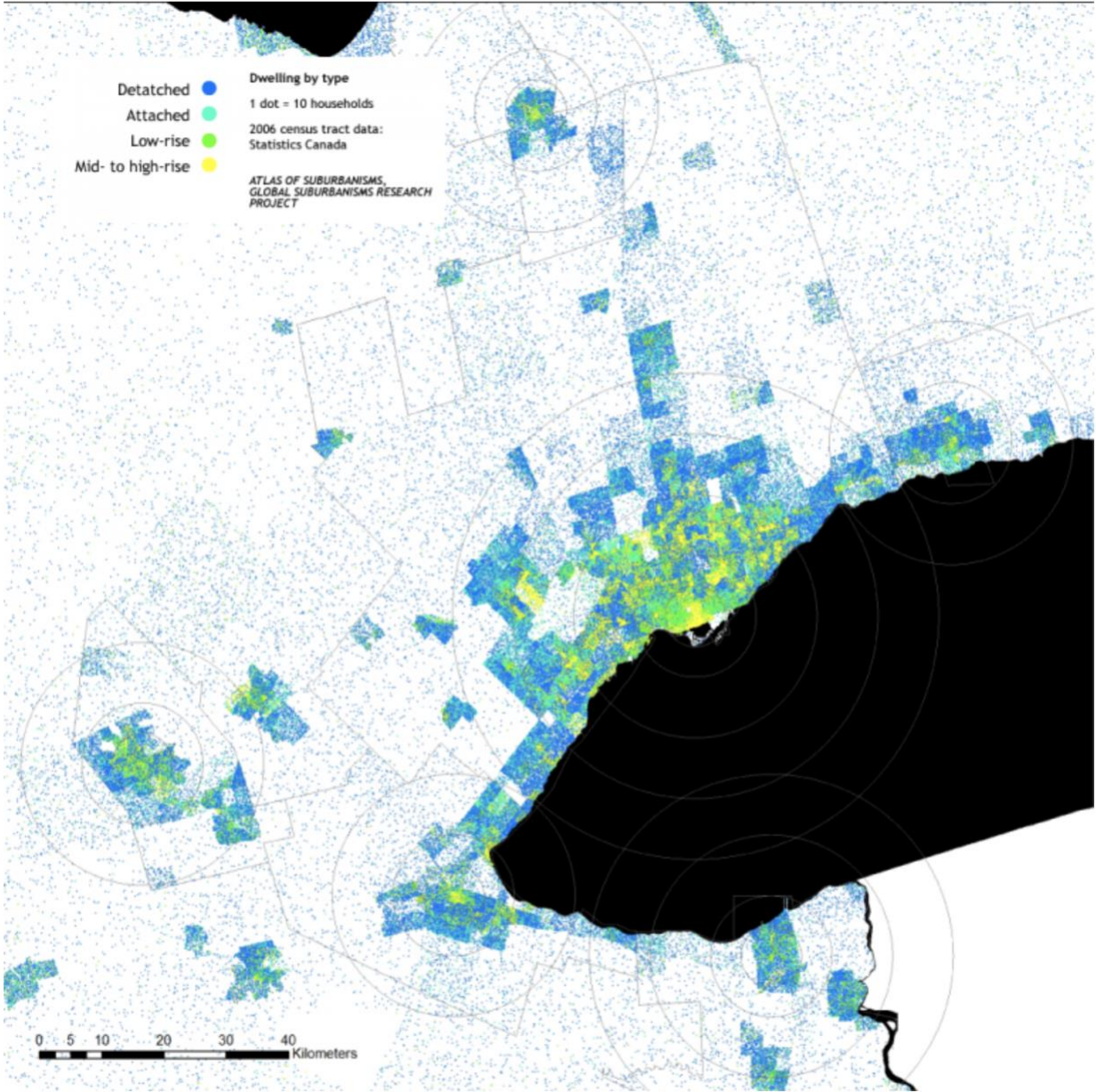
Greater Toronto Area: Dwelling by type

Legend:
- Driver ●
- Passenger ●
- Transit ●
- Bicycle ●
- Walk ●

Journey to work by mode of transportation

1 dot = 25 commuters

2006 census tract data: Statistics Canada

ATLAS OF SUBURBANISMS, GLOBAL SUBURBANISMS RESEARCH PROJECT
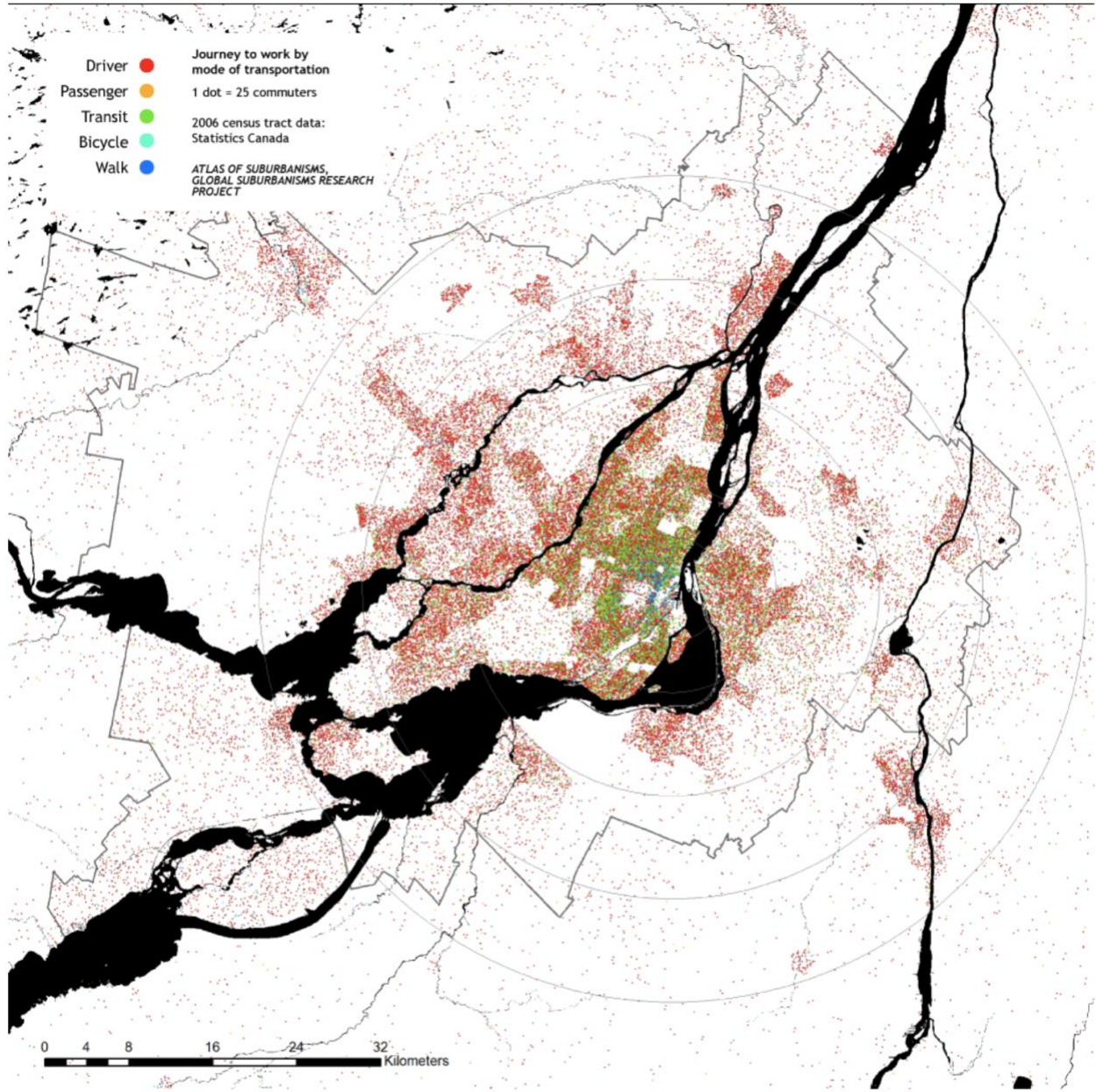
0   5   10   20   30   40 Kilometers
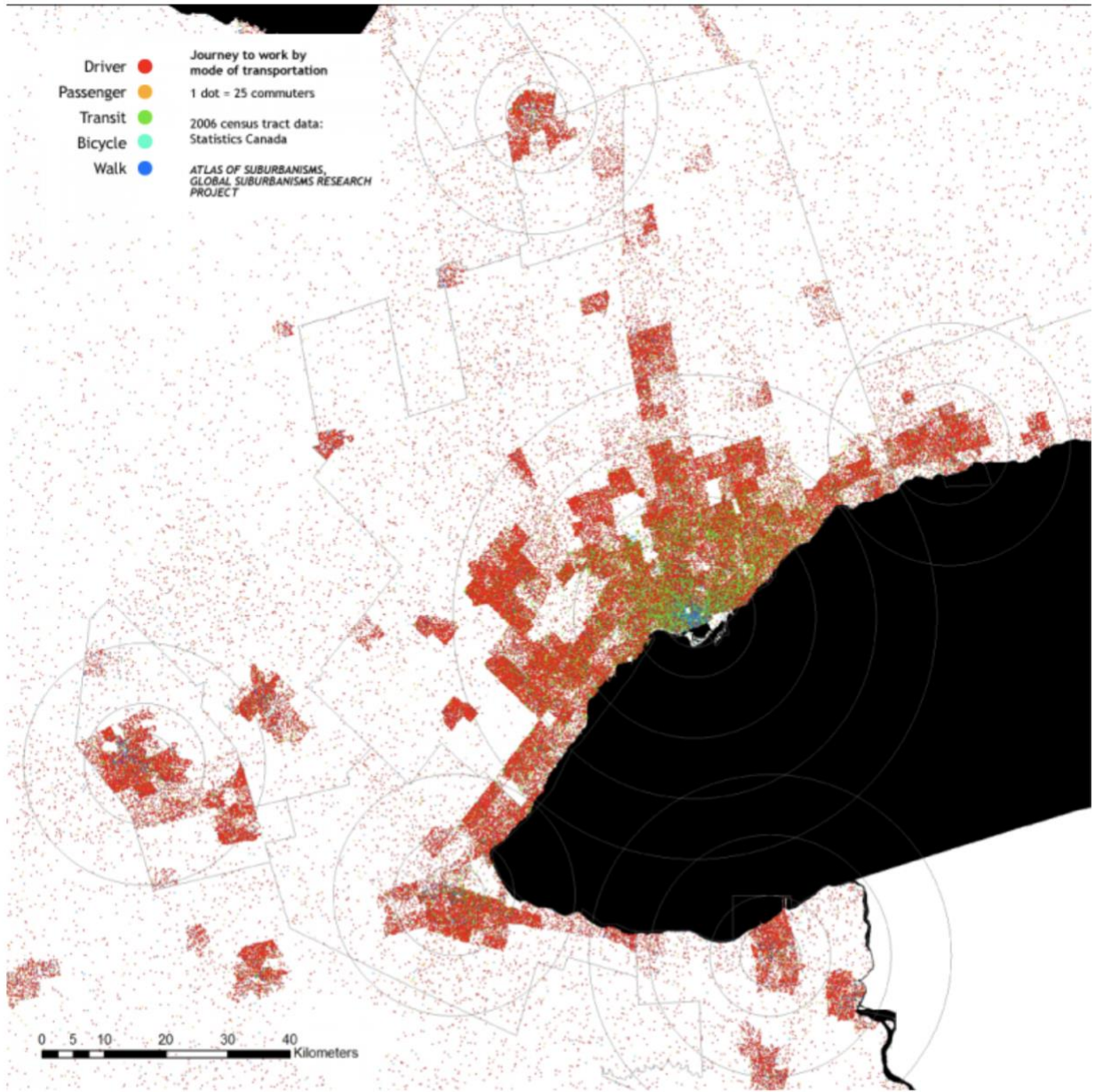
Greater Toronto Area: Journey to work by mode of transportation
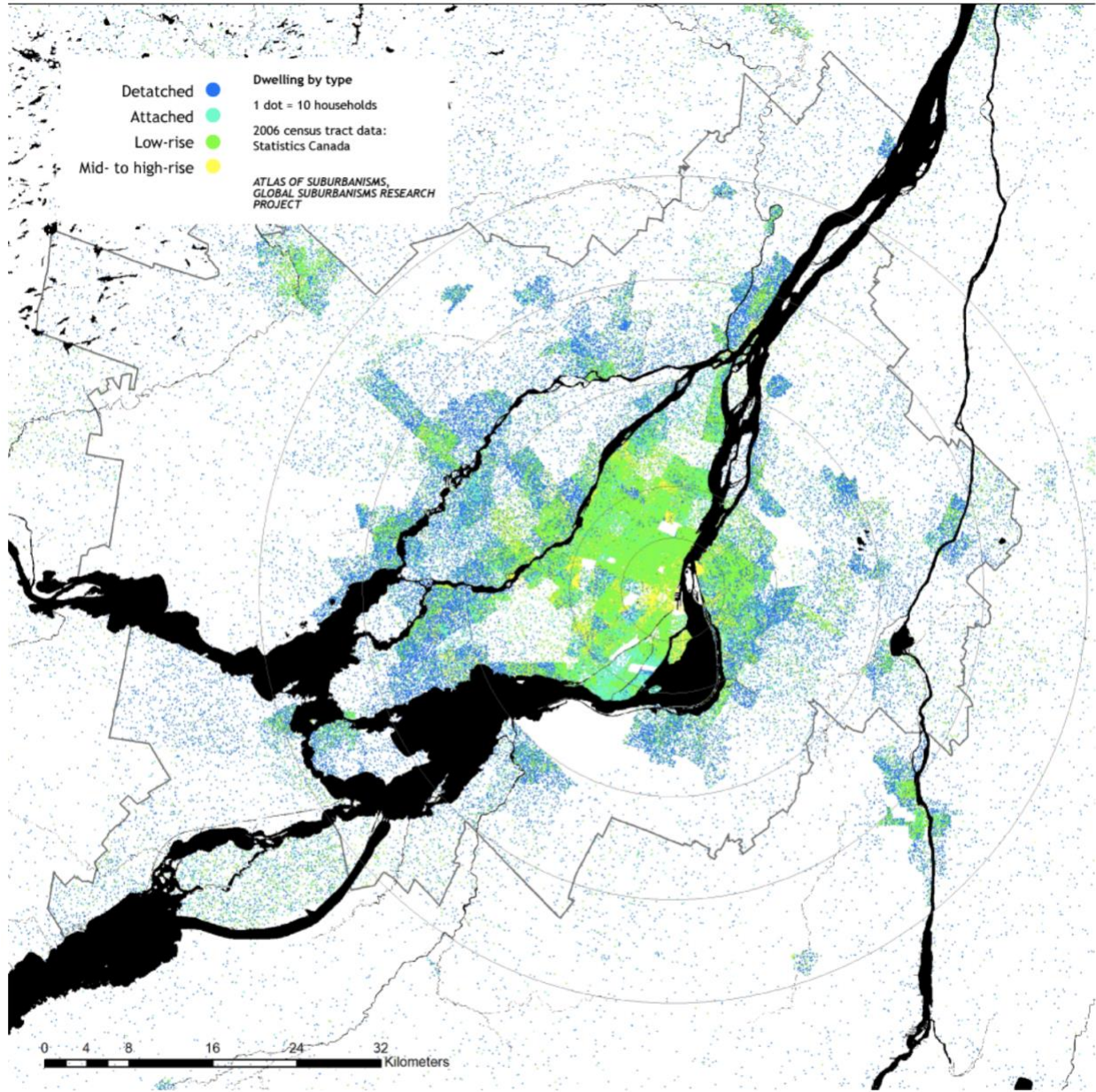
Montréal: Dwelling by type

Montréal: Journey to work by mode of transportation