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Insights into public transit use by Millennials: The Canadian experience

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ABSTRACT

Recent evidence suggests that millennials (individuals born following Generation X and between the early 1980s and early 2000s) are characterized by different automobility characteristics, including being less likely to have a valid driver's license, less likely to drive, and being more likely to take public transit than their older counterparts. But will their greater use of public transit persist as millennials age and their life status situations change? Using data from Statistics Canada's 1998, 2005 and 2010 General Social Survey (GSS) 'Time Use' cycles, this paper explores the use of public transit by millennials and contrasts their use with older cohorts over time in order to gauge whether differences are due to cohort or life cycle effects. Descriptive statistics are used to characterize public transit use, and multivariate analysis explores the factors associated with use of public transit. Findings suggest that millennials are more likely to use public transit than older cohorts. Moreover, the results suggest that cohort differences, which tend to persist over time, and not life cycle effects, are responsible for greater use of public transit by millennials.

1. Introduction

Numbering about 8.5 million or approximately one-quarter of Canada's population, the millennial generation (individuals born following 'generation X' and between the early 1980s and the early 2000s) is seemingly different than preceding generations: they have grown up in a digital world exemplified by rapid change giving them a set of priorities and expectations different from previous generations. Millennials are often portrayed as being more diverse in their spending and consumer habits and having different preferences and attitudes toward work and leisure as compared to older generations (Goldman Sachs, 2016). Millennials are often more reluctant to buy cars and other large ticket items, and instead participate more in the 'sharing economy' built around the sharing of human, physical and intellectual resources. Millennials are also faced with lower incomes, a more tentative hold on the labor market, higher debt, and are more likely to continue to live at home with their parents (Burn and Szoeke, 2016; Coletto and Morrison, 2012; Dutzik and Inglis, 2014; Myers, 2016).

However, do millennials display different automobility behaviors relative to other cohorts? What do these generational differences mean in terms of their transportation behavior and will differences be maintained into the future? In addition to the literature that explores the automobility of older generations (see, for example, Alsnih and Hensher, 2003; Collia et al., 2003; Dahan-Oliel et al., 2010; Newbold et al., 2005; Scott et al., 2009), there is a rapidly growing literature that looks at millennials, in large part because of their relatively recent entrance into the ranks of car drivers. Existing evidence within the automobility and transportation literatures, however, points to differential automobility behaviors across generations, along with broadly heterogenous behaviors even within generations (Clark et al., 2014; Dargay and Vythoulkas, 1999). Although the literature has suggested that millennials may be less likely to drive than older generations (Coletto and Morrison, 2012; Dutzik and Inglis, 2014) and that their lack of interest in car ownership and driving suggests a sea-change in attitudes toward automobility, Newbold and Scott (2017) demonstrated a clear increase in the proportion of millennials holding a driver's license and that millennials were just as likely to hold a driving license (controlling for age) as generation Xers. More broadly, their analysis suggested that the automobility behavior of millennials may simply be 'catching up' with older cohorts and that as they age, build their careers, start families, and have other demands placed upon them, they may continue to move toward the personal automobile as their preferred travel mode.

Obtaining a driver's license is just one piece of the broader puzzle. Holding a valid driver's license does not mean, for example, that a car is driven as frequently as observed in older cohorts. Likewise, the use of public transit may remain an important mode choice for millennials despite holding a valid driver's license. Indeed, evidence within the literature suggests that millennials are more likely to take public transit as compared to older generations (Davis et al., 2012; Dutzik and Baxandall, 2013; Dutzik and Inglis, 2014; Grimsrud and El-Geneidy, 2014), a decision shaped by the cost of car ownership (Blumenberg

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et al., 2012; Frank et al., 2008), environmental choices (Brown et al., 2016), income, and residential and work locations (Glaeser et al., 2008; Myers, 2016). Consequently, an important question is whether there is evidence that millennials' greater use of public transit is a pattern that will be sustained as they age.

Using a series of cohorts defined to represent different generations within Canadian society including millennials, generation X, and baby boomers, and drawing on data from Statistics Canada's General Social Surveys (GSS), the purpose of the following paper is twofold. First, it explores how the use of public transit differs across generations through the use of descriptive statistics. Second, using logistic regression, it explores the factors associated with use of public transit across generations. More specifically, it tests whether differences in the use of public transit across cohorts are due to cohort specific effects which tend to persist over time, as opposed to life-cycle factors that will change as individuals age. In other words, if millennials are greater users of public transit, is there evidence that this will persist into the future? The paper adds to the current literature by providing a pan-Canadian perspective and a longitudinal analysis of changes in transportation choices over the 1998–2010 period. The remainder of this paper is organized as follows. The next section briefly reviews the literature on generational differences in travel behavior, followed by a discussion of the methods and data. The fourth section presents the research results, with the final section concluding the paper.

2. Background: Public transit use by generation

Amongst older generations, including baby boomers and the greatest generation, the personal automobile meant freedom, choice and personal mobility (Dahan-Oliel et al., 2010; van den Berg et al., 2011). Not surprisingly, the automobile remains the preferred travel mode choice for older adults, while public transit and active transit options are typically less preferred (Kim and Ulfarsson, 2004; Newbold et al., 2005; Páez et al., 2007). Research has shown, for example, that as the populations of Canada, the United States, Australia, and some European nations have aged, they have become increasingly dependent on the automobile with more limited use of public transit (Collia et al., 2003; Hjorthol et al., 2010; Newbold et al., 2005; Rosenbloom, 2001; Páez et al., 2007; Scott et al., 2009; Turcotte, 2012). Furthermore, the old tend to take more trips, a greater variety of trips, and longer trips as compared to younger cohorts (Newbold et al., 2005; Páez et al., 2007; Okola, 2003; Scott et al., 2009).

But millennials may be different than older generations in terms of their automobility behaviors and life style choices. Millennials have, for example, expressed a greater preference than older generations to live in central cities close to work and entertainment options (i.e., Myers, 2016), with such locations providing greater access to public transportation and greater walkability. These generational differences may also be apparent in terms of travel behavior (Coletto and Morrison, 2012; Dutzik and Inglis, 2014; Goldman Sachs, 2016; McDonald, 2015), although the literature is divided as to whether millennials have different travel behavior than earlier generations. For instance, studies supporting the idea that millennials are different include Grimsrud and El-Geneidy (2014), Oakil et al. (2016), Hjorthol (2016), Delbosc and Currie (2013) and Kuhnimhof et al. (2012), while Brown et al. (2016) and Ralph (2016) find that millennials *are not* different from earlier generations. Instead, Brown et al. (2016) argue that millennial's observed preferences for public transit are more closely tied to life cycle factors such as residential location and income, as opposed to cohort differences that will persist over time.

Evidence that millennials differ in their travel behavior choices focuses on licensure rates, number of trips, distance travelled, and differences in relative mode shares. For example, millennials are less likely to hold a driver's license (Hjorthol, 2016), have demonstrated the largest average decline in per-capita driving (McDonald, 2015), and are more likely to use active transportation modes or to take public transit as compared to older generations (Davis et al., 2012; Dutzik and Baxandall, 2013; Dutzik and Inglis, 2014; Grimsrud and El-Geneidy, 2014). In the United States, McDonald (2015) attributed a reduction in trip distance amongst millennials to overall declines in distance travelled and changes in lifestyle choices (i.e., delayed family formation). While travel distance may be declining, millennials are more likely to use public transit (Grimsrud and El-Geneidy, 2014; Ralph, 2016). In part, millennial's preference for public transit is linked to cost, location, and access to services (i.e., Brown et al., 2016; Grimsrud and El-Geneidy, 2014). Similar findings have been noted elsewhere, with Hjorthol (2016) noting that millennials were less likely to hold a driver's license (Hjorthol, 2016).

Such differences in transportation behavior may be due to different residential choices and/or preferences, including a preference for living in urban areas (i.e., Myers, 2016) where access to public transportation is typically greater (Glaeser et al., 2008), as well as the greater likelihood of living with parents (i.e., 'boomerang' children (Burn and Szoeke, 2016)). Additionally, the relative cost of public transportation versus owning a car is an important factor driving transit use (Blumenberg et al., 2012; Frank et al., 2008), particularly in light of broader difficulties in finding full-time, long-term employment amongst millennials (Myers, 2016). Use of public transit may be favored for other reasons, including environmental preferences, and the ability to work, socialize, or use mobile technology while using transit (Brown et al., 2016).

However, other studies suggest that millennials are not so different from older generations – at least with respect to their transportation behavior. Work by Brown et al. (2016) for instance, suggests that the young are more likely to use public transit than the old in the US, but that this greater use can be explained by life cycle factors, racial differences (with whites using public transit less than non-whites), and locational factors. Moreover, their work suggests that this greater transit use may not persist as they age. Evaluating the use of public transit amongst the young in Montreal, Canada, Grimsrud and El-Geneidy (2014) found that while the young were more likely to use public transit, their use declined with age until the early 30 s, after which their share of public transit use stabilized but remained slightly greater than older generations. Changes in residential location, including moves to more suburban locations necessitating longer commute distances, increasing incomes allowing the purchase of a private automobile, and shifting household composition, such as the presence of children, could result in decreased public transit use by millennials over time (Axisa et al., 2012; Grimsrud and El-Geneidy, 2014).

Beyond public transit use, Newbold and Scott (2017) observed that millennials share a broad similarity in driving behavior with older cohorts. More specifically, and in contrast to Hjorthol (2016), millennials demonstrated increasing rates of holding a valid driver's license, and ultimately shared similar rates of licensure as compared to older generations in the Canadian context. Moreover, millennials participated in an increasing number of trips by car-as-driver, suggesting that their evolving use of the personal automobile was not all that different from other cohorts, although whether mode choice, and specifically choices associated with public transit or use of the personal automobile stabilized at levels equivalent to (greater than, less than) older generations was not fully explored. Differences between millennials and older cohorts could reflect differential employment patterns, including their delayed entry into the labor market which could impact their automobility (Dutzik et al., 2014).

Consequently, the current literature provides contradictory findings detailing the relationship between public transit use and generational cohort. Given such conflicting findings, there is an ongoing need to more fully understand millennial travel behavior. In part, we may be able to answer this question by looking at how travel options amongst older generations have changed as they have aged at the national scale. Moreover, better understanding of their use of public transit and how use changes over time and across cohorts is needed given the