Title: Understanding the supply of and demand for volunteer driving in Canada: Knowledge sources, gaps, and proposed framework for future research to support transportation planning for older adults

Original submission date: July 28, 2017
Revised submission date:

Word count: 5307, 3 tables, 5 figures
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ABSTRACT

Volunteer Driving Programs (VDP) have considerable potential to be low-cost extensions of transit systems in underserved or unserved rural markets to facilitate travel for older adults unable to meet their own transportation needs. It can be expected that as Canada's population ages, in rural areas in particular where few alternatives exist to driving oneself, there will be growing interest and demand for programs that replicate the on-demand driving experience. The challenge is there is limited understanding of supply of and demand for volunteer transportation services, including geographic and operational success factors, complicating the ability to consider them with transit or paratransit as a mobility solution in the transportation planning process.

This paper profiles existing transportation and volunteer data sources in Canada, with a commentary on sources from the United States, and identifies the challenges with using these sources to understand how older adults participate in or use volunteer driver programs. Detailed results were assembled from four Canadian surveys on giving, volunteering and participating between 2004 and 2013 with a focus on "volunteer driving" for a formalized group to highlight gaps in knowledge for transportation planning and opportunities for further research. Finally, a framework is proposed to focus future research into volunteer driver supply, demand for volunteer transportation, and the feasibility of the formalized volunteer programs themselves in order to incorporate into transportation planning.

INTRODUCTION

Transportation agencies that typically offer fixed route and on-demand paratransit service may be able to extend their service areas into rural and low-density locations within minimal investment through partnerships with volunteer organizations. Similarly, volunteer driver programs may offer a community-based mobility solution in areas outside of the authority of transportation planning and service agencies. The challenge is that little is understood about the trip-making behavior associated with volunteer-supplied transportation given the data that are available, making it difficult to estimate ridership and volunteer supply, and to identify new locations where a volunteer program could succeed. Volunteering is typically viewed through a social science and humanities lens, yet formalized volunteer driving programs may be dealing with issues such as matching supply with demand, scheduling and route optimization, which would benefit from being also viewed through a transportation engineering lens.

The 65 years and older population is often a targeted clientele (and volunteers) for dedicated volunteer driver programs, and this population is growing in Canada, in particular in provinces like New Brunswick. It can be expected that the demand for low-cost, volunteer-supplied transportation services will only grow in the future, especially in rural areas where the population is aging and car dependent and where transit costs may be prohibitive. The limited understanding of supply of and demand for volunteer transportation services, in addition to their geographic and operational success factors, complicates the ability to consider them with transit or paratransit as a mobility solution in the transportation planning process.

This paper profiles existing transportation and volunteer data sources in Canada, with a commentary on sources from the United States, and identifies the challenges with using these sources to understand how older adults participate in or use volunteer driver programs. Detailed results were assembled from four Canadian surveys on giving, volunteering and participating between 2004 and 2013 with a focus on "volunteer driving" for a formalized group to highlight gaps in knowledge for transportation planning and opportunities for further research. Finally, a framework is proposed to focus future research into volunteer driver supply, demand for volunteer transportation, and the feasibility of the formalized volunteer programs themselves in order to incorporate into transportation planning.

BACKGROUND

Formalized Volunteer Driver Programs (or VDP) rely on volunteers to provide transportation services to members or clients of non-profit or charitable programs, and in some cases, feed into transit services in locations where it is too costly to serve with transit, such as rural areas. Unlike traditional transit, volunteer driver programs rely on drivers to volunteer their time, and in many cases, their vehicles, with little or no compensation to provide transportation to others. The success of a program, in part, can be attributed to the ability to attract, retain and task volunteers for driving and related tasks. This raises several complicating factors for the provision of service that one would not expect in traditional transit or taxi service: there may be insufficient volunteer supply for client demand depending on time of day or month of year; volunteers may be called upon to do more than drive, such as providing an escort function for the client. VDPs fall within the domain of "Supplemental Transportation Programs" (STP) as presented in the research conducted by the Beverly Foundation, in concert with the AAA Foundation for Traffic Safety *(1)*.

The ability and potential of VDP to support the transportation needs of older adults has been demonstrated through nationally scoped efforts such as ITN America, which has recently introduced a rural-focused model (ITN Country) (*2*). The Beverly Foundation's survey *(1)* found

33% of STP applications were in rural areas, and the applicability of these programs for addressing rural issues has been discussed in Hanson (*3*), Hanson and Hildebrand (*4*), Hanson (*5*). The ITN America concept remains a novel approach in terms of having seniors helping seniors, having organized way for older adults to pay for rides through donations of their unused vehicles or volunteer time, and an "affiliate" concept aimed at replicating the initiative elsewhere. According to its website, ITN America currently operates at least 14 affiliates across the United States, with 22 other "trusted transportation partners" *(2)*, and a 2014 presentation envisions representation in all 50 states and internationally (Canada, Australia) (*6*).

One challenge of the case study/best practice approach to inform the development of new VDP is that there is little information regarding the factors that have resulted in unsuccessful programs or limit the feasibility of programs. Hanson (*5*) profiled an example of a program in rural New Brunswick, Canada that had only operated for a few months before closing its doors, though the program had been developed from a template from another successful New Brunswick program. While ITN America had envisioned an affiliate in Edmonton, Alberta, the affiliate has yet to develop. Hanson (*5*) hypothesized that the case-study approach used to develop new programs does not contribute to understanding supply of volunteers, demand for services, or the potential for "success" which may include other mitigating factors such as regional demographics, and presence of other transit services. The challenge is that there has been little if any research that explores VDP through a transportation engineering and planning lens where supply, demand, and user choice are understood and modeled to predict success. The Transportation Research Board (TRB) Committee on Accessibility and Mobility (ABE060) has recognized the limitations of the existing research on the topic and it remains a research need (*7*).

Understanding data sources on volunteer driver program usage in Canada

Volunteer driving is captured through a few questions in a national survey called the General Social Survey: Giving, Volunteering and Participating. Information on how people who require caregiving rely on transportation is collected as part of the General Social Survey: Caregiving and Care Receiving. Both are administered through a national agency Statistics Canada. These surveys, and their predecessors, when viewed in concert provide broader insight into national volunteering trends, including driving, but there are data gaps and other issues which limit the ability to draw concrete conclusions, as described in the following sections.

The volunteer driver's role within a volunteer organization in Canada

Sinha's report (*8*) on Volunteering in Canada, 2004 to 2013, offers several insights into where volunteer driving fits into the overall contributions that volunteers make. Approximately 17% of Canadian volunteers participated in "Driving" as a volunteer activity in 2013, a statistically significant reduction from 20% in 2004. Volunteer driving ranked 12th of all volunteer activities in terms of percentage of contributed volunteer hours, accounting for approximately 3% of all volunteer hours. Sinha notes that the number of hours contributed for all volunteer activities in Canada in 2013 would be equivalent to about 1 million full-time, year round jobs. Sinha also highlights that the highest income volunteers are the most likely to volunteer, but the lowest income volunteers contribute the most hours. The rate for informal volunteering "was almost double the rate for more formalized volunteering (82% versus 44%)".

Sinha employs data from four national surveys in Canada:

- General Social Survey: Giving, Volunteering and Participating (2013)
- Canadian survey of giving, volunteering and participating (2004, 2007, 2010)

These social surveys have been conducted nationally every three years with a sample of individuals from every province and territory, with weightings applied to growth the sample to represent national and regional values. Respondents self-report on volunteer activities undertaken in the previous 12 months. There have been only two questions relating to volunteer driving for a formal organization: did the respondent do any volunteer driving without pay on behalf of a group or organization; how many hours did they devote to the activity. The 2013 GSS specifically asks respondents about the activity they devoted the most hours to for an organization. Respondents were also asked about informal volunteering, including helping anyone by "doing shopping or by driving someone to the store or an appointment". This may be a double-barreled question from a transportation perspective in that it is not possible to distinguish between someone doing shopping and someone providing driving.

The importance of volunteer driving for personal trip-making in Canada

These four surveys provide some limited insight on the supply side of volunteer drivers; however, there is also limited information on the demand side for volunteer drives. Data from the General Social Survey, Cycle 26, 2012: Caregiving and Care Receiving show that in 2011 approximately 1.6 million Canadians received help with transportation to do shopping or errands, or to get to medical appointments, or social events. Nearly one quarter (23%) of those depending on a caretaker for transportation rely on them daily, and 40% reported not having anyone else available to provide the help for transportation. A total of 230,000 Canadians received help with transportation from professional sources, or approximately 0.7%, based upon a 2011 population of 33,476,688 (*9*).

Though "professional sources" for transportation was not explicitly defined in the survey, the user guide for the 2012 survey refers two categories of care providers: family/friends or professionals, where in a later section the scope for family and friends excludes a "professional or volunteer whose job it is to care for patients or clients".

Rationale for estimating supply and demand for volunteer driver programs

Little is understood about how volunteer driver programs work to satisfy transportation needs and how programs will respond to meet growth in ridership anticipated with an aging population (*10*). Individual programs may record trip information for their own planning purposes, but unlike personal vehicle use, transit, or taxis, there is not a broad understanding of the number of individuals, older adults (65 years and older) in particular, that rely on these programs, the degree of their reliance, the types of trips they take, and distances they travel. Without a clear understanding of how VDP work, there are risks that programs may not be able to meet demand, programs may have challenges with replication and sustainability, and there may be missed opportunities to employ these programs in underserved markets.

Understanding data sources on volunteer driver program usage in the United States

Given the commonalities among transportation planning and design practices between Canada and the United States, VDP data sources in the United States were also examined to find areas of commonality and difference. Unlike Canada, national estimates for the use of VDP in the United States do not appear to be as readily available. Canada does not employ a national household travel survey like in the U.S.; however, formalized volunteer transportation do not appear to be distinguished from other related modes in the U.S. National Household Travel Survey (NHTS). It may not be clear to NHTS respondents who provide transportation with their own vehicle through a VDP, or are clients of one, how trips would be categorized among the mode options available to

respondents through the 2009 questionnaire (*11*). For example, a VDP may have the attributes of transportation service provided by "others" such as friends and family, or may be considered "Special Transit for People with Disabilities (Dial-a-Ride)" or a "reduced fare taxi". While NHTS trip purposes include picking up, dropping off, and transporting someone, and this could be associated with a "non-relative", it is not possible to distinguish whether this service is being provided through a formal volunteer program.

Similar to Canada's General Social Survey, the U.S. Bureau of Labor Statistics does maintain statistics on those who participate as volunteers (*12*), as well as through the American Time Use Survey (ATUS) which includes data on those who provide travel for others (*13*). This information available in either case does not appear to separate out formal volunteer driving from any other travel provided by individuals. In a 2015 Bureau of Labor Economic News Release, the volunteer activities of "general labor" and "supply transportation to people" are combined (*12*), while in the primary activity categories described in ATUS (*14*), "transportation for others" is not included within the formal volunteering category.

The most detailed information on VDPs in the United States appears to be a national, non-representative survey conducted through the now defunct Beverly Foundation (*15*). Kerschner and Rousseau (*16*) profiled this research of 714 volunteer drivers, which included collecting driver attributes (e.g. age, sex, income, education, driving experience, etc.) and tasks undertaken by the volunteer driver beyond driving, including providing escort assistance to clients. No such resource currently exists in Canada.

Aside from the detailed research effort of the Beverly Foundation and its partner researchers, there does not appear to be an explicit data source that permits a clear understanding of the supply and demand for formalized VDP services in the United States.

VOLUNTEER DRIVING IN CANADA: AN ANALYSIS OF NATIONAL DATA (2004 – 2013)

Weighted social survey data for four Canadian General Social Surveys (2004, 2007, 2010, 2013) were explored to identify what can be learned about volunteer driving in Canada given existing data sources, identify any data gaps and opportunities for research, and the suitability of the data for transportation planning. Data were analyzed through the Computing in the Humanities and Social Sciences (CHASS) at the University of Toronto through the Statistics Canada Data Liberation Initiative (DLI), available to subscribing institutions including the University of New Brunswick. Data were primarily analyzed through cross-tabulations of weighted population data and factors including geography and age. Censuses of Canada (2001, 2006, 2011, 2016) were also used to compare against observed broad demographic trends in the volunteer sector, though the census years and the social survey data do not align. Estimates for the aggregate number of hours driven volunteers were calculated by a sum product function between the hour bins and weighted number of volunteers in each bin. Readers should also note that data in the survey for volunteer hours is for the activity where volunteer driving is the primary activity, so the presented values may underestimate total contributions by volunteer drivers if it is a secondary activity.

Participation trends among volunteers who drive

The data in Figure 1 show the percentage of all volunteers who contributed volunteer driving in the previous 12 months of each survey. Volunteer driver participation rates have been relatively uniform among 15-24 year olds, 25-34 year olds, and 45-54 year olds since 2004, with notable decreases among 35-44 year olds and increases among 55-64 year olds and 65 years and older.

When compared to volunteer rates per age group as a whole (*8*), volunteer driving has greater participation from those aged 35-54 and less participation from those aged 15-24 years.

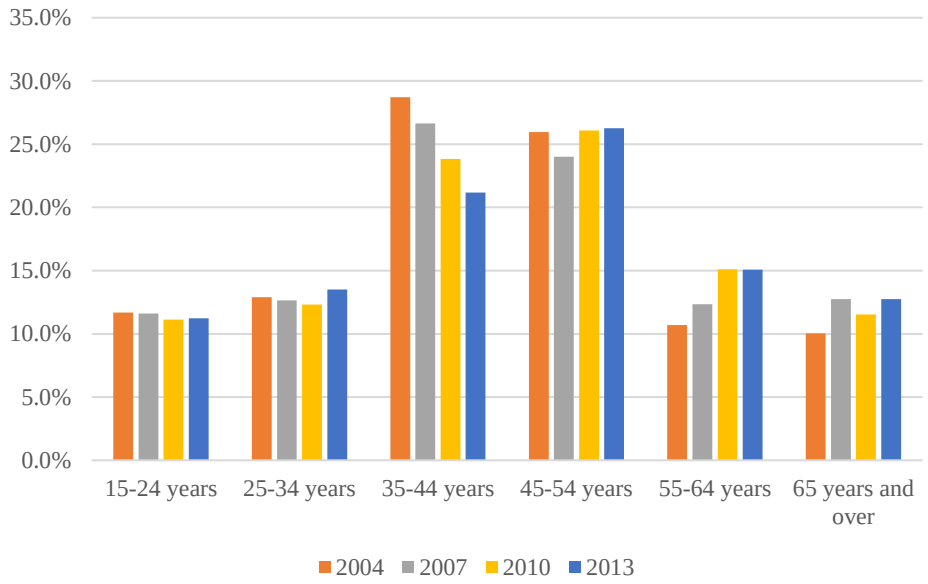

FIGURE 1 Percentage of volunteers by age group and survey year who provided volunteer driving services in the past 12 months.

Comparing the data from Figure 1 with data from Canadian census (Figure 2) suggests that for the most part, these trends are aligned with broader demographic trends for the driving age population; the proportion of Canadians aged 15-24 years and those aged 25-34 years has been relatively stable since 2001, while the proportion of Canadians aged 35-44 years has decreased, and those aged 55-64 years and 65 years and older has increased. The only notable difference is that the proportion of volunteer drivers aged 45-54 years stayed relatively constant between 2004 and 2013, while their proportion of the population consistently decreased between 2001 and 2016.

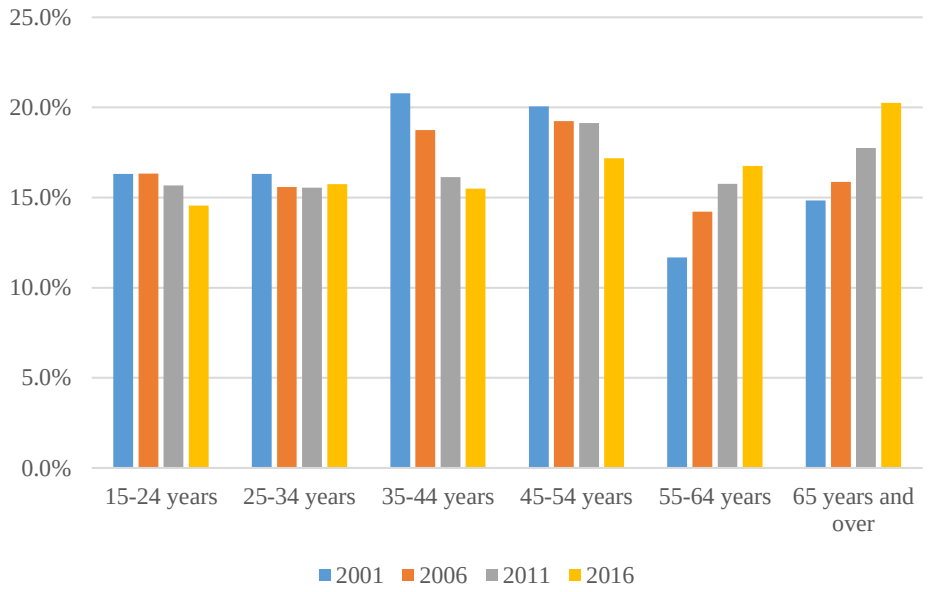

FIGURE 2 Percentage of driving-aged Canadians in age group (assembled from 2001-2016 Census of Canada).

The data in Table 1 show that there has been a slight decline in the total number of Canadians that reported being a volunteer driver, to just under 2.2 million in 2013. The data also show that between 27% and 30% of those who offered as a volunteer driver reported volunteering zero hours in the previous 12 months. The total hours contributed has averaged 50 million per year, and hours per volunteer ranging from 26 to 34 hours. Sinha (*8*) found that over half of total volunteer hours in 2013 were performed by the top 10%, and this trend is evident in volunteer driving as well. In 2013, 4% of volunteers contributed nearly 58% of all volunteer hours.

TABLE 1 Percentage of Volunteers and Their Contributions by Hourly Bins and by Survey Year

	2004		2007		2010		2013	
Hours	% of Total Volunteers	% of Total hours	% of Total Volunteers	% of Total hours	% of Total Volunteers	% of Total hours	% of Total Volunteers	% of Total hours
<1	26.7%	0.0%	26.7%	0.0%	26.3%	0.0%	31.0%	0.0%
1-100	69.4%	52.5%	69.0%	48.6%	70.6%	56.4%	65.0%	42.3%
101-200	2.1%	14.5%	2.7%	17.5%	1.8%	11.5%	2.8%	16.2%
201-600	1.7%	28.5%	1.4%	19.5%	1.1%	22.4%	0.8%	11.7%
>600	0.1%	4.5%	0.3%	14.3%	0.2%	9.8%	0.4%	29.8%
Total ($x10^6$)	2.3	49	2.5	56	2.3	44	2.2	51
Hrs/vol.	29		31		26		34	

While the number of hours per volunteer has had some minor fluctuation between 2004 and 2013, these hours are not equally distributed among age groups. Data from 2013 GSS have shown

Canadians aged 65-74 years dedicate the greatest number of hours overall (*8*), Canadians aged 55-64 years had the highest hours per volunteer for driving, followed by those 75 years and older (Table 2). There is a marked jump in the number of hours per volunteer for driving starting with the 55-64 year old age group, consistent with Sinha's assertion (*8*) that older volunteers may have greater time availability and flexibility having transitioned out of the paid workforce.

TABLE 2 Volunteer Driving Contributions by Age Group (Calculated from 2013 GSS)

	15-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65-74 yrs	75 + yrs	Total
Drivers volunteering >1 hour in past year ($x10^3$)	165	211	323	402	210	121	61	1,493
Total hours contributed ($x10^6$)	2.0	2.1	5.4	10.1	18.5	8.3	4.3	50.8
Age group as % of all volunteer drivers	11%	14%	22%	27%	14%	8%	4%	100%
Age group as % of all hours contributed	4%	4%	11%	20%	36%	16%	9%	100%
Hours per volunteer	12	10	17	25	88	68	71	34

The data in the previous two tables highlights the aggregate contribution to volunteer driving by Canadians, but it is not possible to identify the trip purposes for these contributions. The closest indication of purpose is to explore the number of hours devoted to one of 12 different volunteer organization categories as per the GSS. The top categories by percentage of hours in the last four surveys were "Culture and Recreation", "Social Services" and "Religion" (Table 3).

TABLE 3 Percentage of Hours Contributed to Volunteer Organization Category

Category	2004	2007	2010	2013
Culture & Recreation	27%	26%	19%	33%
Social Services	18%	21%	21%	19%
Religion	19%	20%	27%	14%
Education & Research	8%	11%	10%	11%
Health	11%	7%	11%	8%
All others	16%	14%	12%	11%
Not elsewhere classified	<1%	<1%	<1%	6%

RESEARCH OPPORTUNITIES

While the GSS and related surveys provide valuable information about volunteer contributions in support of formalized transportation in Canada, as well as information on the number of people who rely on professional transportation help, it is not possible to compare supply and demand with existing data sources. On the transportation supply side, this is represented by the number of volunteers, number of hours they contribute, and the category of organization to which the hours are contributed. On the demand side, this is represented by the number of people that report receiving help with transportation from professional sources, and this may be expressed using a

Likert-scale for time (e.g. Daily, once a week, etc.). The following represent "opportunities to address data gaps" that were evident upon review of the GSS and related data:

Opportunity #1: What is the relationship between volunteer hours and driving time and distance travelled?

While Canadian volunteers provided over an estimated 50 million hours of volunteer driving services in 2013, it is unclear whether these hours were all spent driving, or were spent in support of providing drives for someone. For example, a volunteer driver may spend two hours driving and another two hours waiting for the client if providing an escort function to the hospital. Differentiating among the different tasks of a volunteer driver could help identify demand for the transportation service from among all the potential tasks a volunteer may undertake. It may also help identify whether client uptake of the transportation service is contingent on all the auxiliary services being provided.

Opportunity #2: What does the steady participation rates for older adult (65 years +) volunteer driving, overall population growth for this group, and smaller family sizes mean for the sustainability of volunteer driver programs?

In 2013, Canadian volunteers over the age of 75 years contributed the second highest number of hours per person as a volunteer driver (71 hours), and while also being among the fastest growing demographic in Canada. The health effects of aging can make driving difficult or impossible over time, and the typical number one choice for non-driving older adults is to drive with friends and family. Given that overall family sizes are at historic lows in Canada, this suggests that "friends" will play a larger role in transportation provision in the future, and this may be further formalized through local volunteer driver programs specifically developed for transportation purposes, rather than as offshoots of national charities, for example. Steady participation rates by volunteer drivers over the age of 65 years suggests that with population growth that the number of older drivers available will continue to grow, as will the overall number of older adults depending on these programs, while overall driver numbers appear to be on the decline.

Opportunity #3: To what degree and for what trip purposes are older Canadians (65 years and older) relying on volunteer transportation provided through the 12 different categories of volunteer organizations reported in the GSS?

Approximately 1/3 of all volunteer driver hours in 2013 were associated with "Culture & recreation" volunteer organizations, while approximately 1/12 of all volunteer driver hours were associated with "Health". It is not possible to differentiate the level of user dependence on these services, as well as the criticality of the service provided, especially if the volunteer driver program serves multiple purposes, including recreation and health.

Approximately 5% of Canadians (1.2 million) received help with transportation shopping or errands, or to get to medical appointments, or social events, with 0.7% of Canadians (230,000) receiving this help from professional sources, rather than informal sources. It is not possible with existing data sources to determine the category of organization that delivers these services (e.g. Culture & recreation), or how many are volunteer organizations. While it is possible to determine how many Canadians 65 years and older rely on these formal programs, it is not known how many would rely on these programs if they were available to them.

Opportunity #4: Is there a substantially underutilized volunteer driver population?
In each of the Canadian General Social Surveys since 2004, at least 26% of those who indicated that they contribute volunteer driver services did not report a single hour of volunteering for this purpose during the previous year. The reason for this is unclear, though the most likely reason may be that the volunteers were asked to volunteer and never called upon for their service.

Opportunity #5: Is it possible to determine how many formalized VDP exist in North America, develop a database of their attributes, and explore their potential to be incorporated into transportation planning?
The Beverly Foundation had assembled a detailed database on volunteer driving in the United States with numerous resources available to groups looking to leverage best practices in support of their own operations. Their approach represents a strong foundation for understanding the qualitative aspects of successful VDPs, and assembled descriptive statistics that suggests considerable data are maintained by VDPs themselves, though the value of these data for transportation planning is unclear. Hanson and Cassie (*17*) and Hanson and Goudreau (*10*) found that in working with rural VDP in New Brunswick, Canada that groups collected similar information, but there were inconsistencies between groups in terms of terminology and trip attributes that limited comparisons. A better understanding of VDP metrics, akin to those maintained for transit, would provide a valuable tool to permit incorporation into transportation planning including assessing feasibility.

A PROPOSED FRAMEWORK FOR FOCUSING RESEARCH IN VOLUNTEER TRANSPORTATION FOR OLDER ADULTS

Given there are several opportunities to advance research in the supply of and demand for volunteer transportation, it would be beneficial if this research was aligned through a framework that would contextualize empirical data collection, stated preference surveys, and travel demand modelling. There are three main areas for research:

1. Estimating the regional supply of volunteer drivers
2. Estimating regional demand for formalized volunteer driving
3. Feasibility of a volunteer program to coordinate volunteers and clients and meet demand

Approach to estimating the regional supply of volunteer drivers

One major challenge in quantifying the supply of and demand for volunteer transportation is the current lack of an analytical approach that highlights where volunteer supply and demand could fit within an individual's travel behavior. Figure 3 presents a prototype approach to quantify supply of volunteer transportation for older adults broken down by volunteer population, trip-making behavior of the volunteer, transportation provided for older adults, the purpose of that transportation (according to purposes defined by Carp (*18*)), the number of hours, trips, and kilometers associated with each volunteer task. Associating each of these attributes with the demographic characteristics of the transportation provider could produce a regional inventory of volunteer transportation, including related tasks. This could be accomplished with a travel diary survey to obtain the source data to permit a larger modelling effort.

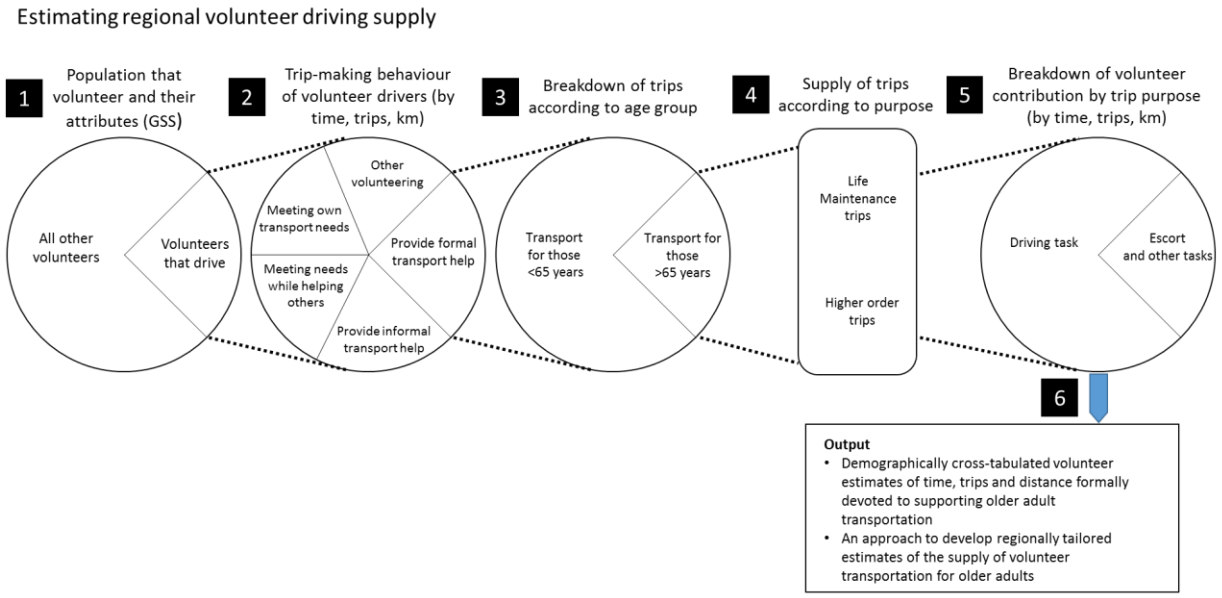

FIGURE 3 Approach to estimate regional volunteer driver supply.

Approach to estimating regional demand for formalized volunteer driving

The information in Figure 4 provide an approach for estimating an individual's demand for volunteer driving services. It begins with the identification of the target population (age 65 years and older), but then splits into the need for two values: proportion of transportation the individual receives through formal help (including volunteer sources); and the latent demand that exists for volunteer services. Techniques to collect this information could include travel diaries by clients of volunteer driver programs as well as stated preference studies to gain better insight into mode choice and decision-making factors.

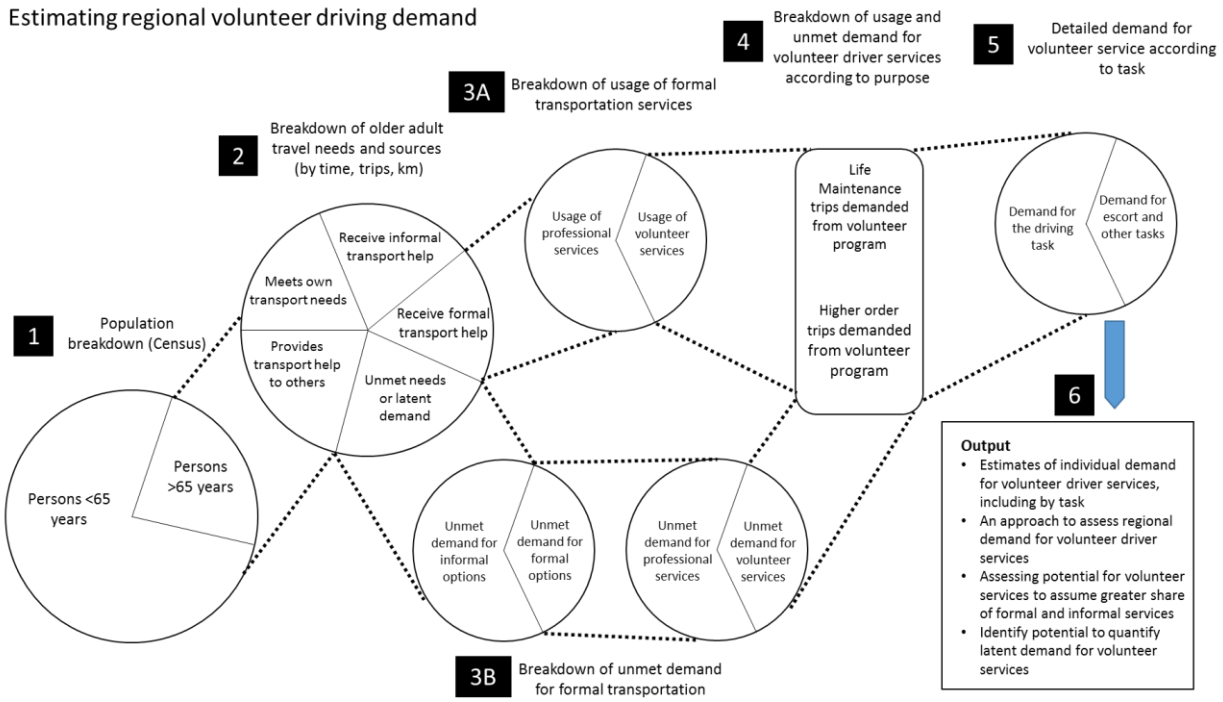

FIGURE 4 Approach to estimate regional demand for volunteer driving.

Another challenge will be quantifying the unmet needs or latent demand for volunteer services; however, obtaining this value represents a major contribution for understanding travel behavior in this domain: where can volunteer programs be successful; to what degree can they meet currently unmet demand; to what degree can they assume share of other modes.

Approach to assessing feasibility of a volunteer program to coordinate volunteers and clients and meet demand

While it may be possible to determine volunteer supply and client demand, what is less clear is how a VDP itself could be organized to best muster the supply of volunteers and meet the demand, especially if it may be the only option for alternative transportation to the private automobile. It could be expected that there is a "feasible region" for VDP defined by a function of varying levels of geographic and operational factors, such as service area, demand, and surplus/deficit of volunteer-supplied transportation. Figure 5 presents a conceptual approach to understanding feasibility; a successful VDP will likely have some combination of factors that ensure a sufficient volunteer supply to meet a certain level of demand over a certain geographic area. At some point, the combination of factors may make VDP operation infeasible, with too large a service area and too few volunteers, or too much demand to be met by volunteers. This suggests either a more formalized solution such as transit, or a less formal approach such as relying on friends and family. The actual success factors, shape of the feasible region, the degree and relationship between them are not known and warrants further research.

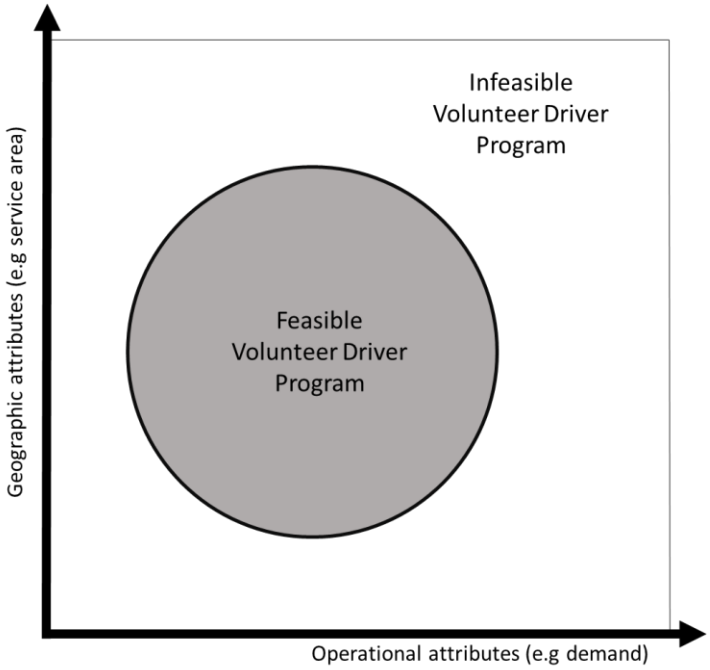

FIGURE 5 Conceptual approach to understanding VDP feasibility.

CONCLUSIONS

Volunteer Driving Programs (VDP) have considerable potential to be low-cost extensions of transit systems in underserved or unserved rural markets to facilitate travel for older adults unable to meet their own transportation needs. The challenge is that there are limited data available to permit decision-makers and community groups to make fully informed decisions about feasibility and suitability about the operational model for meeting transportation needs in comparison to transit, for example. Data from Canada suggests there is a considerable volunteer supply available (2 million Canadians (7.4% of the population) provided volunteer drives to a formalized group or organization in 2013 (*19*)) and demand (1.6 million Canadians received help with transportation in 2011 to do shopping or errands, or to get to medical appointments, or social events (*20*), with 230,000 receiving this help from professional sources (including volunteer programs)). It can be expected that as Canada's population ages, in rural areas in particular where few alternatives exist to driving oneself, there will be growing interest and demand for programs that replicate the on-demand driving experience. Further research is needed that explores supply of and demand for VDPs, as well as in the operational model itself to better understand where new programs can be developed and the sustainability of existing programs.

ACKNOWLEDGEMENTS

The author wishes to acknowledge the Computing in the Humanities and Social Sciences (CHASS) at the University of Toronto through the Statistics Canada Data Liberation Initiative (DLI) for access to the General Social Survey data and Censuses of Canada. The author's research in this area is supported through the Natural Sciences and Engineering Research Council of Canada (NSERC). The author also would like to acknowledge UNB Civil Engineering Research Assistant David Copp, BScE, for assistance with document formatting.

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