

Driving Characteristics of the Young and Aging Population, 2000-2004

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Introduction

The Canadian Vehicle Survey (CVS) introduced in 1999 by Statistics Canada, and sponsored by Transport Canada and more recently by Natural Resources Canada, provides information on vehicle use and fuel consumption for on road motor vehicles registered in Canada.¹ The survey provides information on distances driven with breakdowns by quarter, days of the week, and time of day. Data are collected by three categories of vehicle weight (light vehicles with gross vehicle weights below 4.5 tonnes, medium vehicles with gross weights of 4.5 tonnes or more and less than 15.0 tonnes, and heavy vehicles with gross vehicle weights of 15.0 tonnes or more). Only light vehicles are used in this study.ⁱ

After a complete year of data was available from the CVS, Statistics Canada published a document using both CVS data and safety and collision statistics data obtained from Transport Canada. Entitled, "Driving Characteristics of the Young and Aging Population", the study compared the amount of driving done by different age groups and the number of collisions that they were involved in. This paper is an update of the original conducted with reference year 2000 data and utilizes the same

¹ This excludes snowmobiles and motorcycles

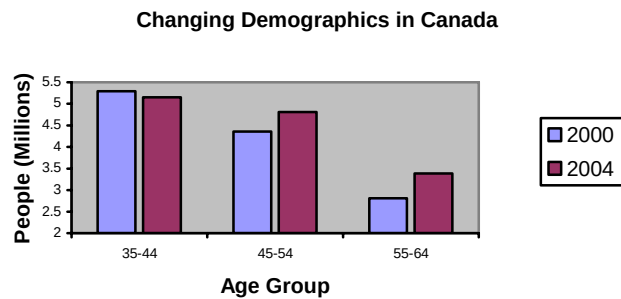
CVS data now available for reference years 2000 through to 2004. As with the original paper, data regarding the number of collisions are from Transport Canada's Canadian Motor Vehicle Traffic Collision Statistics as well as special tabulations produced by Transport Canada. Collision statistics used in this paper include only those where at least one person was injured or killed and where at least one of the vehicles involved was a light vehicle.

Demographic Background

The population aged 55 and over in Canada has grown faster than any other age grouping as the baby boom generation reaches retirement age. As of 2005, seniors account for approximately 13% of the Canadian population. Population projections recently produced by the Demography Division of Statistics Canada indicate that, given certain assumptions, the senior population will account for between 23 to 25% of the total population by 2031 after which that growth is expected to slow². Figure 1 illustrates how a significantly large cohort of the population has yet to reach age 55, but will do so within approximately ten years.

² Demography Division, Statistics Canada, The Daily, December 15, 2005

Figure:1



Estimates of Population, Statistics Canada, Cansim
Table 051-0001

As the demographics continue to shift in the coming years and their habits become more prevalent in the population, the overall environment in which Canadians drive could change. It is between the ages of 55 and 64 that some of the population begins the process of entering retirement, and hence, changes some of their driving habits. The majority of those above the age of 65 possess different characteristics even still that could lead to different driving habits. Special attention will be given to these age groups periodically to provide some insight into how the aging population could affect the driving environment in Canada.

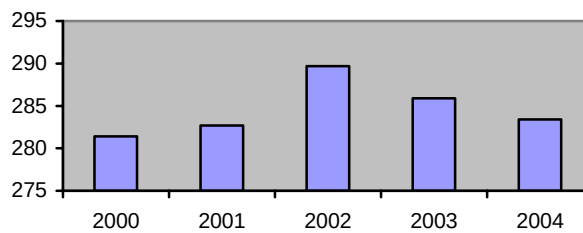
Overall Driving Activity

In 2004, light vehicles were driven a total of 283.4 billion kilometres. While this is up from the 281.4 billion kilometres reported in 2000, it is down from 289.7 billion kilometres reported in 2002. The average number of kilometres driven per vehicle in 2004 was just over 16,000. This average has steadily

decreased over the five years as the number of vehicles has increased.

Figure:2

**Total Kilometres Driven by Light Vehicles by
Year (Billions)**



Statistics Canada, Canadian Vehicle Survey, Transportation
Division, 2000 - 2004

Unique stories emerge when distances driven by age group are examined. This total has decreased steadily over the 2000 to 2004 period for those aged 25 to 54. Their percentage of the total kilometres driven fell from 70% in 2000 to 63% in 2004. Drivers aged 55 and over accounted for an increasing share of the total kilometres driven over the last 5 years. It is noteworthy that the 55 and over age group is the only cohort that increased the total number of vehicle-kilometres driven over the time period in question.

A further breakdown of overall driving activity of the 55 and over age group yields further interesting results. Both the 55 to 64 and the 65 and over age group show increases in the overall kilometres driven. Comparisons between the two age groups indicate less distance driven for the 65 and over age group compared to the 55 to 64 age group.

Figure:3

Total Kilometres driven by Age for the Age Group 55 and Over (Billions)



Statistics Canada, Canadian Vehicle Survey, Transportation Division, 2000

Both age groups shown in Figure 3 have been responsible for an increasing number of kilometres driven. If this remains a continuing trend, then the tendencies of the 55 and over age group will gain a greater weight in the overall driving tendencies of the rest of the country.

Number of Drivers

Between 2000 and 2004, there was an increase of 1.3% per year on average of those who possess a driver's licence in Canada. Those aged 55 and over who possess driver's licences grew at an annual average rate of 4.1% between 2000 and 2004. The number of licensed drivers aged 24 and under grew at an annual average rate of 0.5% between 2000 and 2004, while those aged 25 to 54 with a driver's licence grew at an annual average rate of 0.3%. As a result of these growth rates, the 55 and over category represented 27% of licensed drivers in 2004, up from 24% in 2000.

Collisions

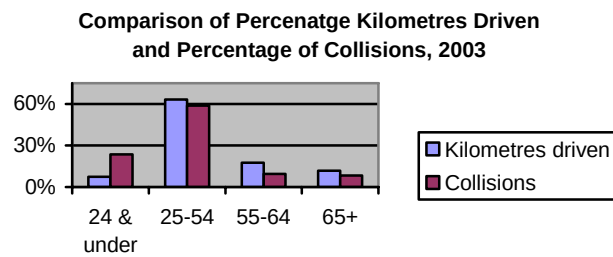
The number of collisions involving light vehicles recorded by Transport Canada has been consistent since 1996 ranging from a high of 149,823 in 2002 to a low of 141,558 in 1998. In 2003, there were 146,713 collisions involving light vehicles. Drivers aged 24 and younger had more collisions per distance driven than the other age groupings. That age group drove 7.4% of aggregate kilometres in 2003, but was involved in 23.5% of collisions for that year. The three previous years show a similar situation with the youngest age group accounting for not more than 10% of kilometres driven, but not less than 20% of drivers in collisions. Lack of experience could be one factor that could contribute towards the disproportionate number of collisions for the younger age group.

Although disproportionately high, the number of collisions as a percent of total collisions has decreased since 2001 for those aged 24 and under, perhaps as a result of various provincial policies aimed at younger drivers such as graduated licences. Those aged 25 to 54 also experienced a decrease in the percentage of total collisions, while the data show a steady increase for the 55 and over cohort over the same time period. The 55 and over age group accounted for 16% of collisions in 2000, and 17.7% of collisions in 2003. One must be careful to put this increase in context with the increased amount of kilometres driven being accounted for by the 55 and over age group. The aggregate number of collisions fluctuated up and down between 2000 and 2003 with the 2 younger age groups.

Figure 4 shows the percentage of collisions that the different age groups are involved in next to the percentage of kilometres driven. Clearly, only the 24 and under age group has a higher percentage of collisions than kilometres driven unlike the other

age groups. The 65 and over age group approaches parity as they account for slightly more than 11% of kilometres driven and slightly more than 8% of collisions.

Figure:4

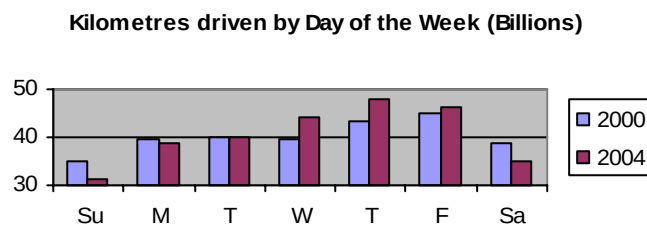


Statistics Canada, Canadian Vehicle Survey, Transportation Division,
2000 - 2004
Transport Canada, Traffic Accident Information Database, 2000 - 2003

Days of the Week

The concentration of kilometres driven remained somewhat consistent from 2000 to 2004 with less distance driven on the weekend, and more driven on Wednesdays and Thursdays.

Figure:5



Statistics Canada, Canadian Vehicle Survey, Transportation Division,
2000 - 2004

The 25 to 54 age group also showed a decreased driving time during the weekends, with other smaller reductions throughout the week. Not surprisingly, those aged 55 and over had an overall increase in the amount of distance driven on every day of the week, with the smallest increase on Monday.

The data in 2004 show a higher concentration in kilometres driven on Thursday and Friday for the 65 and over age group as compared to the 55 to 64 age group. Higher concentrations were also observed on the weekends. This does not come as a surprise since the 55 to 64 age group would be more likely to plan its weekly routine around traveling to and from work than the population within the 65 and over age group.

Comparisons between these two age groups within the years 2000 to 2003 do not yield the differences noted above. The differences observed in 2004 could indicate the beginning of a change in this behaviour, but further observations in future years would have to be examined to be sure.

Collisions by Day of the Week

The distribution of the number of drivers involved in a collision remained fairly consistent across the days of the week with the majority occurring on Friday. Slightly more than 17% were involved in an accident on that day. Drivers in the 25 to 54 and 55 and over age groups experienced a similar distribution of collisions in 2003, with the majority occurring on Friday, and more on weekdays than on weekends. The 24 and under age group had a higher percentage on weekends than the other two age groups. This situation is consistent with previous years, although the percent of collisions for the 24 and under age group on the weekends has steadily decreased since 2000.

The amount of driving done on weekends does not seem high enough compared to the other age groups to explain the increased collisions during the weekend for the younger age group. One potential explanation could lie in the tendency of the younger age group to drive during the night time hours. Aggregate data do indicate that a higher percentage of collisions occur during night time driving compared to the percentage of kilometres driven. If one assumes that the majority of night time driving done by those aged 24 and under is on the weekend, which does not seem unreasonable, then this, combined with inexperience, could translate into this higher percentage of collisions.

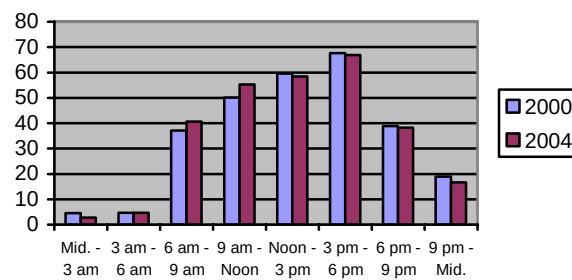
There was little difference in the distribution of collisions by days of the week between the 55 to 64 age group and the 65 and over age group.

Time of Day

The distribution of kilometres driven throughout the day changed little from 2000 to 2004. An increase is observable between 6:00am and noon, with reductions observable between the hours of 9:00pm and midnight and midnight to 3:00am. On an age basis, those aged 24 and under drove less distance in all time periods. Those aged 25 to 54 reduced the amount of kilometres driven throughout the day, with the exception of early morning, between 3:00am and 9:00am. During this period, aggregate kilometres increased by a relatively small amount in 2004 as compared to 2000. Since 2000, those aged 55 and over increased their kilometres driven by almost 60% between 9:00am and noon. All other time periods for this age group showed an increase for kilometres driven except for the midnight to 3:00am and 3:00 am to 6:00am time slots.

Figure:5

Kilometres driven by Time of Day (Billions)

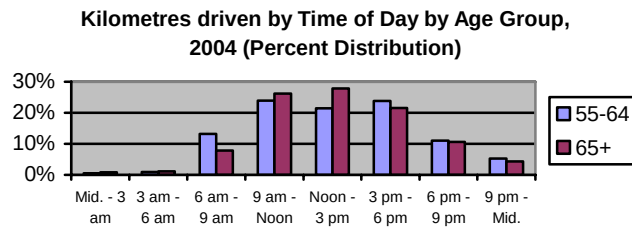


Statistics Canada, Canadian Vehicle Survey, Transportation Division, 2000 - 2004

The two younger age groups follow a similar distribution of kilometres by time of day in 2004, with the youngest driving more distance in the 9:00pm to midnight range than those aged 25 to 54. Those aged 55 and over show an increased percentage of driving between 9:00am and 3:00pm. The distribution of kilometres driven by hour of the day changed little for the two senior age groups from 2000 to 2004. Figure 7 compares the distribution of kilometres driven for the 55 to 64 and the 65 and over age groups in 2004. Since this similar pattern was observed over the past 5 years, it is reasonable to expect that newer entrants into the 65 and over age group will shift a higher proportion of their driving to the time slots between 9:00am and 3:00pm. Older drivers appear to have a preference for driving during daylight hours but outside traditional rush hour periods. If this pattern continues, and the increasing number of people entering into the 65 and over age group drive during these hours, then there is the potential for aggregate kilometres driven to shift to the 9:00 am to 3:00 pm time frame. The distribution of

collisions by time of day follows very closely with the distribution of kilometres driven meaning that the aggregate shift in kilometres driven towards this time frame will most likely be accompanied by an aggregate increase in collisions as well.

Figure:6



Statistics Canada, Canadian Vehicle Survey, Transportation Division,
2000 - 2004

Collisions by Time

While the annual aggregate number of drivers involved in collisions has varied between 2000 and 2003, trends are observable within time periods for the different age groups. The number of collisions in every time period for those aged 55 and over in 2003 were all higher than those observed in 2000, although some fluctuation is observed in between. The largest increases in drivers involved in collisions occurred during the noon to 3:00pm and 3:00pm to 6:00pm time slots for this age group. While the 55 and over age group experienced an increase in the number of collisions from 2000 to 2003 in all the time categories, those aged 25 to 54 experienced lower levels with some fluctuations year to year. The largest reductions came within the time slots in between noon and 9:00pm. The 24 and under age group experienced lower levels of collisions since 2000, with reductions coming mostly between 9:00pm and 3:00am, as well as noon to 6:00pm. The reductions of the two

younger age groups more than offsets the increases in the 55 and over age group resulting in a decreased number of drivers involved in collisions for all time periods with the exception of the 6:00am to 9:00am time slot. The increased number of people aged 55 and over involved in collisions more than offset the decreases observed in the other age groups for this time period.

Conclusions

- The aggregate number of kilometres driven has increased between 2000 and 2002, but then decreased in both 2003 and 2004. Average distance driven per vehicle has steadily decreased as the number of vehicles has increased.
- The 25 to 54 age categories drove less in 2004 compared to 2000. People in the 55 and over age category drove an increased number of kilometres, which is not surprising as that segment of the population has been growing much faster than the other two.
- The total number of kilometres driven for the 65 and over age group is significantly less compared to the 55 to 64 age group.
- Growth in the number of drivers mirrored that of the population trends, not surprisingly, with those aged 55 and over with licences growing faster than the other age groups.
- The number of collisions involving light vehicles in Canada has remained between 140,000 and 150,000 since 1996.
- The percent of collisions involving drivers aged 24 and under has fallen since 2001, although that age group

still has a disproportionately high percent of collisions compared to the percentage of kilometres driven.

- Less driving was done on the weekends in 2004 compared to 2000, with correspondingly more driving done on the later weekdays.
- The 25-54 and 55+ age groups had a similar distribution of collisions throughout the week, whereas the youngest age group had a larger share of collisions on the weekend.
- Less driving was done between 9:00pm and 3:00am, while the largest increases were observed between 6:00 am and noon.
- The percent of kilometres driven by an individual appear to shift between 9:00am and 3:00pm when people approach retirement age.

Data Sources:

1. Estimates of Population, by age group and sex, Canada, provinces and territories, annual, 2000-2004, CAMSIM Table: 051-0001.
2. Number of Licensed Drivers by Gender and by Age, Canadian Motor Vehicle Traffic Collision Statistics, 2000 – 2004.
3. Traffic Accident Information Database (TRAID), Transport Canada, 2000 - 2003
4. Canadian Vehicle Survey, Transportation Division, Statistics Canada, 2000-2004

Note:

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ⁱ The CVS data are for the provincial jurisdictions only. More information on the CVS is available at: <http://www.statcan.ca/cgi-bin/downpub/freepub.cgi> under 'transport and warehousing'.