



Examining factors affecting the severity of traffic collisions involving older drivers in Hamilton

Hany Hassan, Ph.D.
McMaster Institute for Transportation and Logistics,
McMaster University, Canada

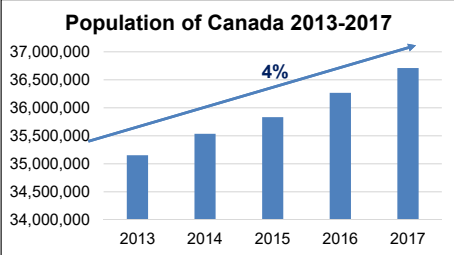
1

1

Research motivation

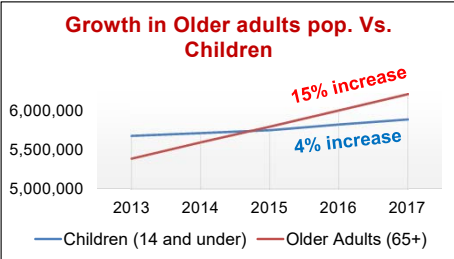
- In Canada, similar to other developed countries, individuals aged 65 years and older represent a significant proportion of the overall population (approximately 17%).
- **15% increase in the number of older adults aged 65+ from 2013 to 2017 compared to only 4% increase in the population as a whole**

Population of Canada 2013-2017





Year	Population (approx.)
2013	35,200,000
2014	35,500,000
2015	35,800,000
2016	36,100,000
2017	36,400,000

Growth in Older adults pop. Vs. Children



Year	Children (14 and under)	Older Adults (65+)
2013	5,600,000	5,400,000
2014	5,650,000	5,500,000
2015	5,700,000	5,600,000
2016	5,750,000	5,700,000
2017	5,800,000	5,850,000

2

2

Research Objectives

Objectives

- This study aims to provide better understanding regarding the contributing factors that affect the severity of traffic collisions involving older drivers in Canada (aged 65+).

Data

- A database of traffic collisions that were occurred in Hamilton, Ontario between 2010 and 2017 was used in the analysis.

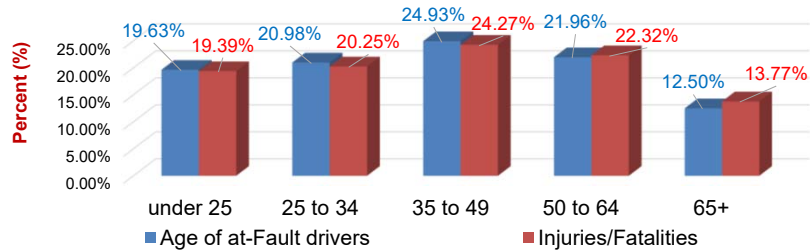
Methods

- Binary logistic regression model was estimated.

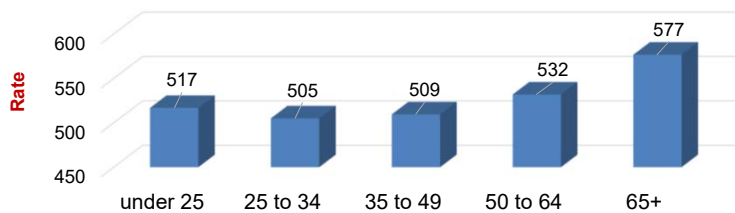
3

Results

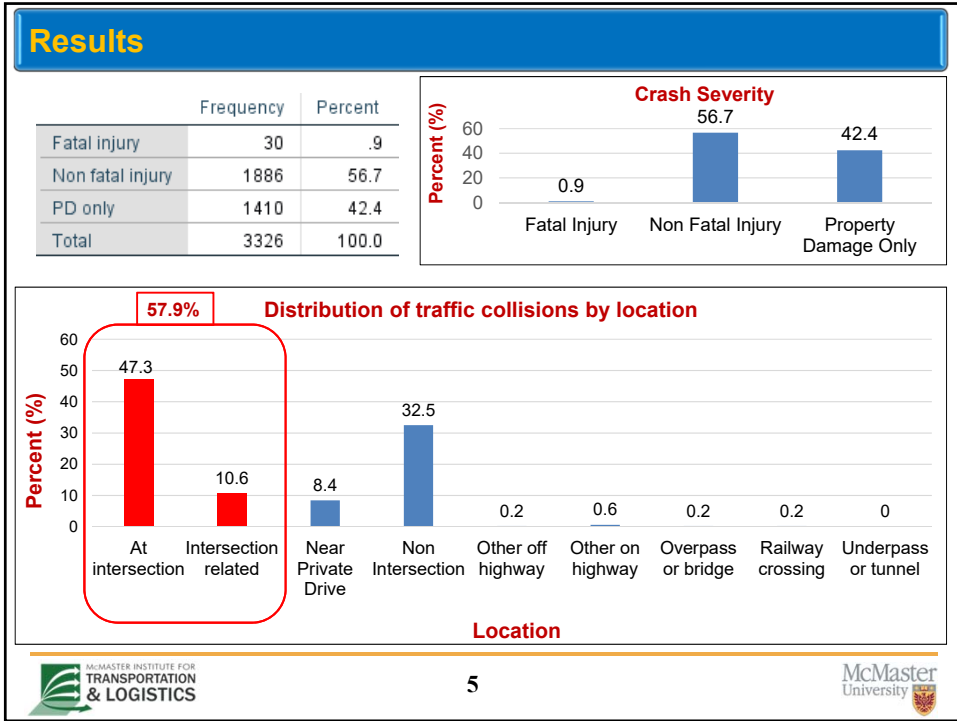
Percentages of at-fault drivers age and Injuries/fatalities per age group



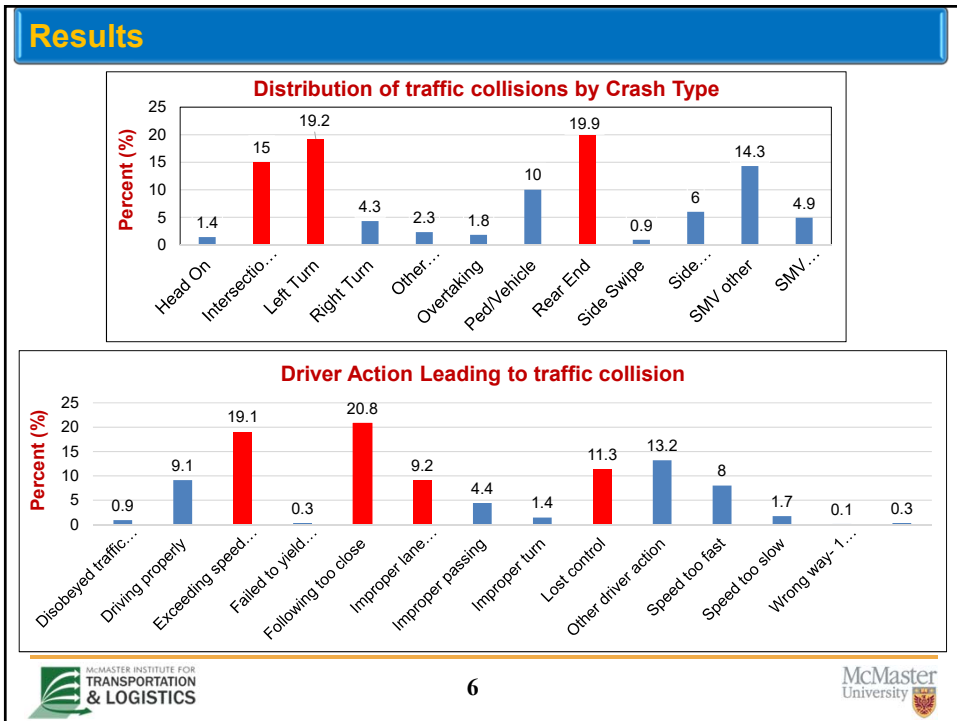
Rate of injuries/fatalities per age groups



4



5





6

Contributing factors affecting the severity of traffic collisions involving older drivers (aged 65+)			
Parameter		Variable Significance	Odds Ratio
Road and environment factors	Lighting condition (0:Daylight, 1:Dark or Dusk)	<.0001	0.758
	Road surface condition (0:dry, 1:wet, snow)	0.0030	0.912
	Road Type (0:others, 1:undivided two-way)	0.0162	1.465
	Traffic Control (0:yes, 1:no control)	0.0722	1.014
Initial impact	Rear End (0:no, 1:yes)	<.0001	2.716
	Pedestrian/vehicle (0:no, 1:yes)	<.0001	16.557
Driver's act	Speeding (0:no, 1:yes)	0.0033	3.872
	Following too close (0:no, 1:yes)	0.0078	2.226
	Disobeyed traffic control (0:no, 1:yes)	<.0001	2.619
	Failed to yield Right of way (0:no, 1:yes)	<.0001	2.252
	Lost control (0:no, 1:yes)	<.0001	2.572
Driver's condition	Inattentive (0:no, 1:yes)	0.0224	1.573

7

Thank you

Dr. Hany Hassan
h.hassan@mcmaster.ca


8


8