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THE POTENTIAL CRASH AND INJURY REDUCTION BENEFITS OF SAFER VEHICLE CHOICES FOR OLDER DRIVERS IN AUSTRALIA AND NEW ZEALAND

by

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Abstract:
The OECD has identified vehicle choice amongst older drivers as in part contributing to their higher rates of death and serious injury in road crashes. This study aimed to quantify the effects of older driver vehicle choice in Australia and New Zealand on injury outcomes in the range of crashes in which older drivers are typically involved. It also aimed to quantify the potential reductions in older driver road trauma that could be achieved through safer vehicle choices. Data analysed was Police-reported crashes in Australia and New Zealand involving drivers aged 65 years or above.

Profiles of vehicle ownership by older drivers and their associated secondary safety performance were identified in the analysis. Analysis also identified the profile of crash types in which older drivers are typically involved and the average risk and severity of injury in these crashes. Profiles were examined by age, gender and jurisdiction of older driver to identify systematic differences related to these characteristics and hence where the greatest potential for reducing older driver road trauma by safer vehicle choices could be found. Finally, safer vehicle choice scenarios were developed and assessed based on their potential to reduce fatal and serious injuries in older drivers. Strategies for improving older driver vehicle choice are discussed.

Key Words:
Older drivers, vehicle choice optimisation, crashworthiness, aggressivity, injury outcome, statistics

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Preface

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Contributorship Statement

Laurie Budd	Data preparation and analysis, preparation of report manuscript
Linda Watson	Data preparation (UCSR)
Michelle Scully	Literature review, introduction and discussion, finalisation of report manuscript
Dr Stuart Newstead	Project management, study concept and design and manuscript review.

Ethics Statement:

Ethics approval was not required for this project.

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EXECUTIVE SUMMARY

Generally ageing populations in western society mean older driver road trauma is becoming a greater problem over time. Consequently, effective strategies to improve older driver safety are becoming more paramount. The OECD has identified vehicle choice amongst older drivers as in part contributing to their higher rates of death and serious injury in road crashes. Identifying the potential gains that can be made through safer vehicle choices for older drivers offers the potential to inform road safety strategies aimed at reducing older driver road trauma. This study aimed to quantify the effects of older driver vehicle choice in Australia and New Zealand on injury outcomes in the range of crashes in which older drivers are typically involved. It also aimed to quantify the potential reductions in older driver road trauma that could be achieved through safer vehicle choices.

Research completed previously under the Vehicle Safety Research Group (VSRG) program (Watson and Newstead 2009; Whelan, Scully & Newstead, 2009) examined the potential benefits of optimising vehicle choice for young drivers to improve their safety outcomes through a detailed examination of the types of vehicles young drivers are currently driving, the type and severity of crashes in which they are involved, and modelling the benefits of changing their vehicle choices under a number of scenarios. The study detailed in this report has applied this analytic strategy to crash-involved older drivers.

There were three stages to this study:

1. Stage 1: outlined and compared the profile of crash-involved drivers aged 65 years or above to those aged 35-54 years based on driver demographic data and the safety-related vehicle characteristics of vehicles crashed by drivers aged 65 years or above to those aged 35-54 years. This stage of the study also investigated the age of the crash-involved vehicle when purchased by older drivers using Victorian vehicle registration data.

2. Stage 2: utilised a range of data that are collected at the scene of a Police-reported crash to identify crash types in which older drivers are overrepresented in comparison to crash-involved drivers aged 35-54 years.

3. Stage 3: estimated road trauma reductions among older drivers by modelling scenarios for optimising vehicle choice.

Police-reported crash data from Australia and New Zealand were used to describe crashed vehicle profiles and driver demographics. Data from the period January 1, 2005 to December 31, 2009 and was analysed from five Australian states (New South Wales, Victoria, Queensland, South Australia, and Western Australia) and New Zealand.

Key findings of the analysis were:

- Compared to younger drivers (35-54 years old) older drivers were more likely to be injured in a crash and the injury was more likely to be serious, and older female drivers were more likely to be injured or seriously injured than older male drivers.

- The vehicles crashed by older drivers most commonly fell into the following Vehicle Market Groups: Small, Large, Medium, and then Light for Australia and Small, Light, Medium and Large for New Zealand.

- Crash-involved vehicles driven by older drivers tended to have poorer average crashworthiness but superior average aggressivity compared to vehicles driven by younger drivers. The poorer average crashworthiness is particularly evident among the 75+ age group of crash-involved drivers.
- Crash-involved older drivers tend crash in vehicles which were purchased new or only a few years old and they retain these vehicles for long periods, possibly until they no longer wish to drive anymore.
- Older drivers were over represented in crashes in rural areas, in lower speed zones, on sealed dry roads, on straight roads, at uncontrolled intersections, in collisions with hit objects and parked vehicles.
- Optimising safe vehicle choice by older drivers has the potential to result in serious injury and fatal crash reductions of up to 90% if vehicle cost was not a factor. When optimum safe vehicle choices were restricted to popular (affordable) models of at least a year 2000 manufacture, fatal and serious injury crash reductions of up to 37% could be achieved. When choices were further restricted to match the market group of choice, serious injury and fatal crash reductions up to 19% could be achieved.

Based on the findings of the analysis, the following action recommendations for focusing on improving older driver vehicle choice were made.

- Prioritise areas of investigation within the area of safe vehicles for older drivers. This is consistent with priorities assigned to the area of ageing and transport in the OECD (2001) report. For example, it is recommended that an initial focus on initiatives for older females and drivers aged 75 years or above.
- Develop a strategy to encourage safer vehicle choices including developing initiatives similar to 'The First Car List' for young novice drivers to encourage purchase of safer vehicles among older drivers. Key differences between The First Car List and a list for older drivers would be the available budget and a greater focus on newer vehicles. Within this initiative older drivers would ideally be discouraged from driving light cars and encouraged to take up specific vehicle technologies.
- Investigate the feasibility of developing financial incentives for older drivers to purchase safer vehicles e.g. reduced insurance premium if not a light vehicle or if has specified technologies.
- Conduct further research that aims to understand broad profiles of older drivers based on their lifestyle, socio-economic status (SES), and the presence of health-related conditions, and how these factors might influence their choice of vehicle.
- Increase public awareness that older driver's vehicle choice could be improved and that these improvements are likely to lead to a contribution to reduced road trauma.
- Encourage vehicle manufacturers through public awareness campaigns to design vehicles that take into account age-related declines in performance and ability so that inappropriate designs are not a barrier to safer vehicle choices among a fast-growing cohort of the population.

- Consider other avenues for encouraging older drivers to purchase safe vehicles, including the potential effectiveness of involving their adult children in the vehicle purchase process.

- Consider vehicle-to-vehicle communication technology, and other safety technologies that would benefit older drivers, so that older drivers can access these technologies rapidly.

- Investigate improved intersection design that enables older drivers to safely negotiate intersections including consideration of how new vehicle designs and safety technology might interact with these improved infrastructure designs.

1.0 INTRODUCTION

In 2001 the Organisation for Economic Co-operation and Development (OECD) published a report on Ageing and Transport (OECD, 2001) which identified current and emerging mobility and safety issues arising from the ageing of the baby boom generation and developed recommendations for research and policy that would meet older people's transport needs while maintaining acceptable safety standards. Four key issues and eight major policy priority areas were identified. The four key issues were: older driver's frailty and the high rate of older pedestrian fatalities; that many older people who suffer from health-related limitations often cease walking or using public transport before they cease driving; that in the majority of OECD member countries older people age in the place they have settled so improved land use planning is critical to enabling lifelong mobility; the ratio of working to retired persons is decreasing which results in less funding to support retirement pensions and health care. Frailty was considered the most significant safety issue. The eight policy priorities were:

- Enable lifelong mobility through appropriate support and funding
- Support for older adults to continue driving safely
- Provide alternate transport to the private car
- Safe vehicles for older adults
- Develop safer roads and safer transport infrastructure
- Develop appropriate land-use practices
- Involve older adults in policy development
- Develop educational campaigns for older adults that promote mobility and safety.

The safe vehicles priority area involves the design of vehicles that accommodate the effects of ageing and functional decline, and improved vehicle choice among older drivers so that their vehicle provides the best performance in terms of primary safety (the ability to prevent a crash occurring) and secondary safety (the ability to prevent injury in the event of a crash). This is a particularly important priority area, because as highlighted by the four key issues the motor vehicle represents the transport mode of choice for older drivers, the estimated rapid increase in the number of older adults in the coming decades, and older adult's vulnerability to injury or death in a motor vehicle crash due to their frailty.

The issue of an ageing population and its likely effects on road trauma levels is particularly pertinent in both Australia and New Zealand. In the next 50 years the proportion of the population aged above 65 years is projected to increase in both countries from the current 12% to around 25%. Reflecting the increase in both the proportion in this age group and total population growth, the absolute number of people aged over 65 is projected to roughly treble by 2056 from the current 2.6M in Australia to between 7 and 10M and from the current 0.5M in New Zealand to between 1.2 and 1.5M. A majority of these people are expected to hold a drivers license. All these figures confirm the importance of older driver safety as a growing concern in both Australia and New Zealand.

This study focuses on the potential benefits of improving vehicle safety among older adults through vehicle choice optimisation by focusing on Police-reported crashes involving drivers aged 65 years or above. The aim is to quantify the role of vehicle secondary safety in crashes involving older drivers and to identify how and under what conditions, improved vehicle choices in terms of safety performance could result in improved safety outcomes.

1.1 STUDY BACKGROUND

Research completed previously under the Vehicle Safety Research Group[1] program (Watson and Newstead 2009; Whelan, Scully, & Newstead, 2009) examined the potential benefits of optimising vehicle choice for young drivers to improve their safety outcomes through a detailed examination of the types of vehicles young drivers are currently driving, the type and severity of crashes in which they are involved, and modelling the benefits of changing their vehicle choices under a number of scenarios. The current study has applied this analytic strategy to older drivers.

1.2 DEFINITION OF KEY TERMS, AIMS AND SCOPE OF THE STUDY

In this paper an older driver is defined as any driver aged 65 years or above, and older drivers were classified as those aged 65-74 years and those aged 75 years or above. All aims are addressed through use of the Used Car Safety Ratings database, which comprises Police-reported crash data from five Australian states and New Zealand and is described in the following chapter. There are three aims and stages to this study, which are described below.

1. The aim of Stage 1 is to outline and compare the profile of crash-involved drivers aged 65 years or above to those aged 35-54 years based on driver demographic data, and outline and compare the safety-related vehicle characteristics of vehicles crashed by drivers aged 65 years or above to those aged 35-54 years. This stage of the report also investigates the age of the crash-involved vehicle when purchased by older drivers using Victorian vehicle registration data.

2. Stage 2 utilises a range of data that are collected at the scene of a Police-reported crash to identify crash types in which older drivers are overrepresented in comparison to crash-involved drivers aged 35-54 years.

3. Stage 3 aims to estimate road trauma reductions among older drivers by modelling scenarios for optimising vehicle choice.

[1] Formerly known as the Used Car Safety Ratings Program

2.0 METHOD

2.1 CRASH DATA

Police-reported crash data from Australia and New Zealand were used to describe crash vehicle profiles and driver demographics. The data period was from January 1, 2005 to December 31, 2009 and was supplied from five Australian states (New South Wales, Victoria, Queensland[2], South Australia, and Western Australia) and New Zealand. The data were compiled for the Used Car safety Ratings (Newstead, Watson, & Cameron, 2011) with separate analyses for New Zealand and Australia. The numbers of crashes in the data sample by jurisdiction and crash year are presented in Table 1.

Table 1: Frequency of passenger vehicles involved in crashes in New South Wales, Victoria, Queensland, South Australia and Western Australia during the years 2005-2009 for the sample analysed

Year	NSW	VIC	QLD	WA	SA	5 States	New Zealand
2005	71,324	22,914	11,205	49,046	33,494	187,983	13,284
2006	71,319	17,470	28,620	55,400	32,982	205,791	12,954
2007	71,365	17,361	30,197	56,465	35,071	210,459	13,900
2008	67,244	17,349	31,113	54,483	35,560	205,749	13,215
2009	67,329	18,136	7,314	49,013	35,870	177,662	12,725
Total	348,581	932,30	1084,49	264,407	172,977	987,644	66,078

*Queensland 2009 year ends March 31.

The Used Car Safety Ratings (USCR) data was supplied in separate files for each year and state. Crashed vehicles were restricted to passenger vehicles with a year of manufacture from 1982 onwards and vehicle market groups, supplied where possible, were defined by the UCSR project (Newstead et al., 2011). The data was supplied in a form where each line represented a light passenger vehicle involved in a crash. It was possible for a vehicle to be involved in more than one crash and thus be listed more than once. Likewise, it was possible for a driver to be listed more than once.

2.2 DATA ANALYSIS VARIABLES

Each file had the following variables: vehicle identification number (VIN), year of manufacture, make and model, driver age and sex, number of vehicles involved in the crash, state identifier, metropolitan/rural crash location identifier, accident time and date, speed zone for crash, injury risk and injury severity for driver. For each variable the following categories were defined.

[2] The Queensland data did not extend to 31st December, 2009; the last crash date for a Queensland crash was only 31-Mar-2009.

Table 2: Outline of variables and definitions of the associated categories used in the analyses

Variable	Categories
Driver Age[3]	Unknown, 0-34, 35-54, 55-64, 65-74 and 74+
Sex	Male, female
Vehicle age	a) Age of vehicle from date of manufacture to current: Unknown, less than 3 years, 3 to 5 years, 6 to 10 years, 11 to 15 years and 16 years and over b) Age of vehicle when purchased[4]
Vehicle market group	Unknown, *Sports Utility Vehicle* (SUV) in compact, medium and large sizes, *Commercial Utility*, *Commercial Van*, *Large*, *Medium*, *Small and Light* vehicles and *People Movers*
UCSR[5]	Total safety (TSR), Crashworthiness (CWR), and Aggressivity (AGG)
Time of day / week[6]	Weekend night, weekend day, weekday night, weekday day
Speed zone at crash	Up to 75 km/h, 75 km/h or over
Road curvature	Straight, curved
Road surface	Sealed, unsealed, wet including ice and snow, dry
Intersection crashes	a) X, T, Y, multi, and roundabouts b) Lights at intersection, no lights at intersection
Crash involvement	Multiple vehicle crash, single-vehicle, unprotected road user crash, other (i.e. a vehicle was not driven to impact, e.g. person falling from vehicle)
Injury severity	Injury, serious injury[7]
Crash location	Metropolitan, rural

[3] The 35-54 year old age group was used as the comparison base against which to evaluate the differences found in older drivers. Older drivers were defined as any driver aged 65 years or above and were classified under two categories: those aged 65-74 years and those aged 75 years or above. The 55-64 age group acts as a buffer between the older driver and comparison group.
[4] Victorian Fleet registration data snapshots for the years 2005 through to 2009 were provided by VicRoads and these data were merged onto the state police reported crash data and these data were used to determine the age of the crashed vehicle when acquired.
[5] The UCSR ratings measure secondary safety performance of vehicles involved in Australian crashes, in terms of a vehicle's ability to protect its own occupants in the event of a crash (crashworthiness) the risk of injury a vehicle poses to other road users (aggressivity) and both the aggressivity and the crashworthiness are considered in the total safety rating. For further information see Newstead, Watson, and Cameron (2011).
[6] Daytime was determined as 6 am to 8 pm and weekend was from Friday 8 pm to Sunday 6 am.
[7] If the driver was involved in a crash resulting in an injury of any severity the vehicle was defined as being involved in an injury crash, if the driver was killed or admitted to hospital the vehicle was defined as being involved in a serious casualty crash.

Vehicle market group definitions are displayed in Table 3.

Table 3: Market group definitions

	Use, body and engine
Passenger Cars	
Light	Passenger Car, hatch, sedan, coupe or convertible, 3 or 4 cylinder engine up to 1,500cc
Small	Passenger Car, hatch, sedan, wagon, coupe or convertible, 4 cylinder engine 1,501-1,900cc
Medium	Passenger Car, hatch, sedan, wagon, coupe or convertible, 4 cylinder engine 1,901cc upward
Large	Passenger Car, hatch, sedan, wagon, coupe or convertible, 6-8 cylinder engine 1,901cc upward
People Movers	Passenger usage , seating capacity >5 people
Sport Utility Vehicles (4WD)	
Compact	Index rating <550 (typically less than 1700 kg tare mass)
Medium	Index rating 550-700 (typically between 1700 and 2000 kg tare mass)
Large	Index rating >700 (typically greater than 2000kg tare mass)
Light Commercial Vehicles	
Van	Blind and window vans
Utility	Two and four wheel drive, normal control (bonnet), utility, cab chassis and crew cabs.

Based on the data in Table 4, 79% of drivers across all states and 45% across New Zealand were not injured in this sample of crashes. These vehicles were included in the police reported data sample because other occupants of the vehicle or other road users involved in the crash were injured. The percentage of crashes where the driver was not injured is lowest for Victoria because it does not include property damage only crashes. The other states include property damage only crashes with the minimum damage being a towed vehicle in Queensland and NSW.

Table 4: Driver injury severity by jurisdiction for the sample of crashes analysed

Injury Severity	NSW	VIC	QLD	WA	SA	All States	New Zealand
Seriously Injured	‡	16,286	10,429	5,678	3,112	35,505	5,468
Injured- Not seriously †	‡	29,150	25,212	34,603	18,937	107,902	30,813
Injured	66,911	45,436	35,641	40,281	22,049	210,318	36,281
Not Injured	281,670	47,794	72,808	224,126	150,928	777,326	29,797
Total Drivers	348,581	93,230	108,449*	264,407	172,977	987,644	66,078

† Not admitted to hospital *Queensland 2009 year ends March 31. ‡Injury Severity not possible with NSW data.

3.0 STAGE 1: PROFILE OF THE CRASH-INVOLVED OLDER DRIVER AND THEIR CRASH-INVOLVED VEHICLE

3.1 CRASHED DRIVER DEMOGRAPHICS

3.1.1 Age and Sex distribution of Crash Driver: Combined Australian states and New Zealand

The distribution of driver sex across age groups for Police-reported crashes of all types for the combined states (NSW, VIC, QLD, SA and WA) and New Zealand during 2005-2009 is displayed in Figure 1, and in the Appendix in Table 22 and Table 24.

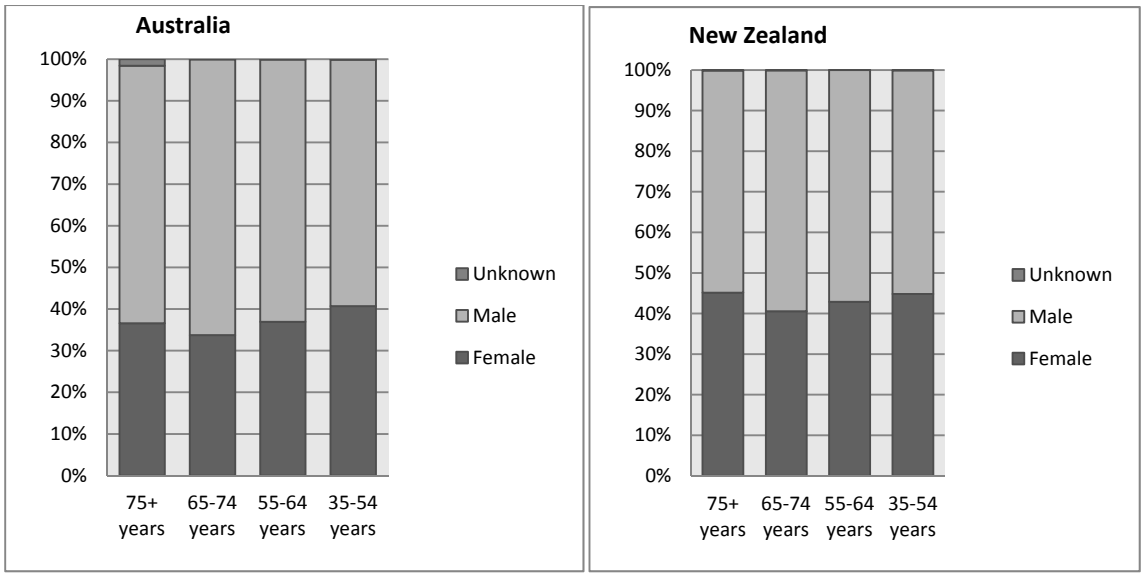

Figure 1: Distribution of driver sex across age groupings of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

3.2 INJURY RISK AND SEVERITY OF CRASH INVOLVED DRIVERS

3.2.1 Injury Risk distribution of Crash Driver: Combined Australian states and New Zealand

The distribution of injured versus non-injured drivers across age groups for Police-reported crashes of all types for the combined states (NSW, VIC, QLD, SA and WA) and New Zealand during 2005-2009 is displayed in Figure 2 and in the Appendix in Table 25 and Table 26. The proportion of non-injured drivers in Australian crashes is inflated due to police reporting of property damage only crashes in some states.

Older drivers are more at risk of an injury than all other age groups. Figure 3 shows that women are more at risk than men, with female drivers from both older driver categories and both countries having a risk of at least 9 percentage units higher than for male drivers. Distribution of injury risk by Country and State and by Country/State and sex can be found in Appendix tables Table 27 through to Table 47.

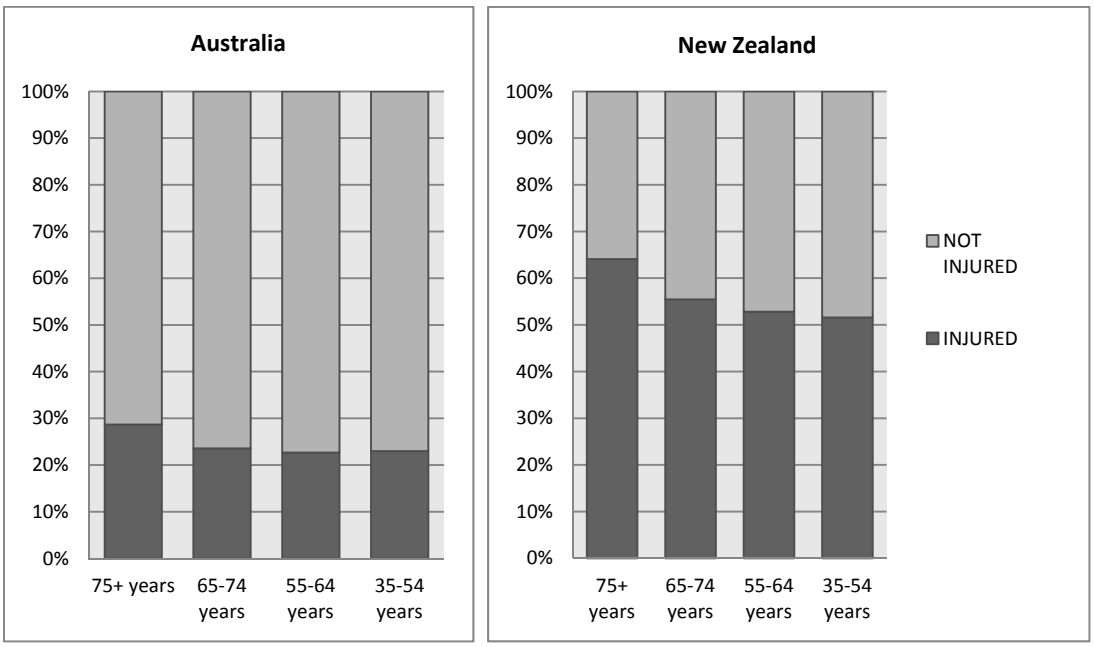

Figure 2: Distribution of injury risk across age groupings of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

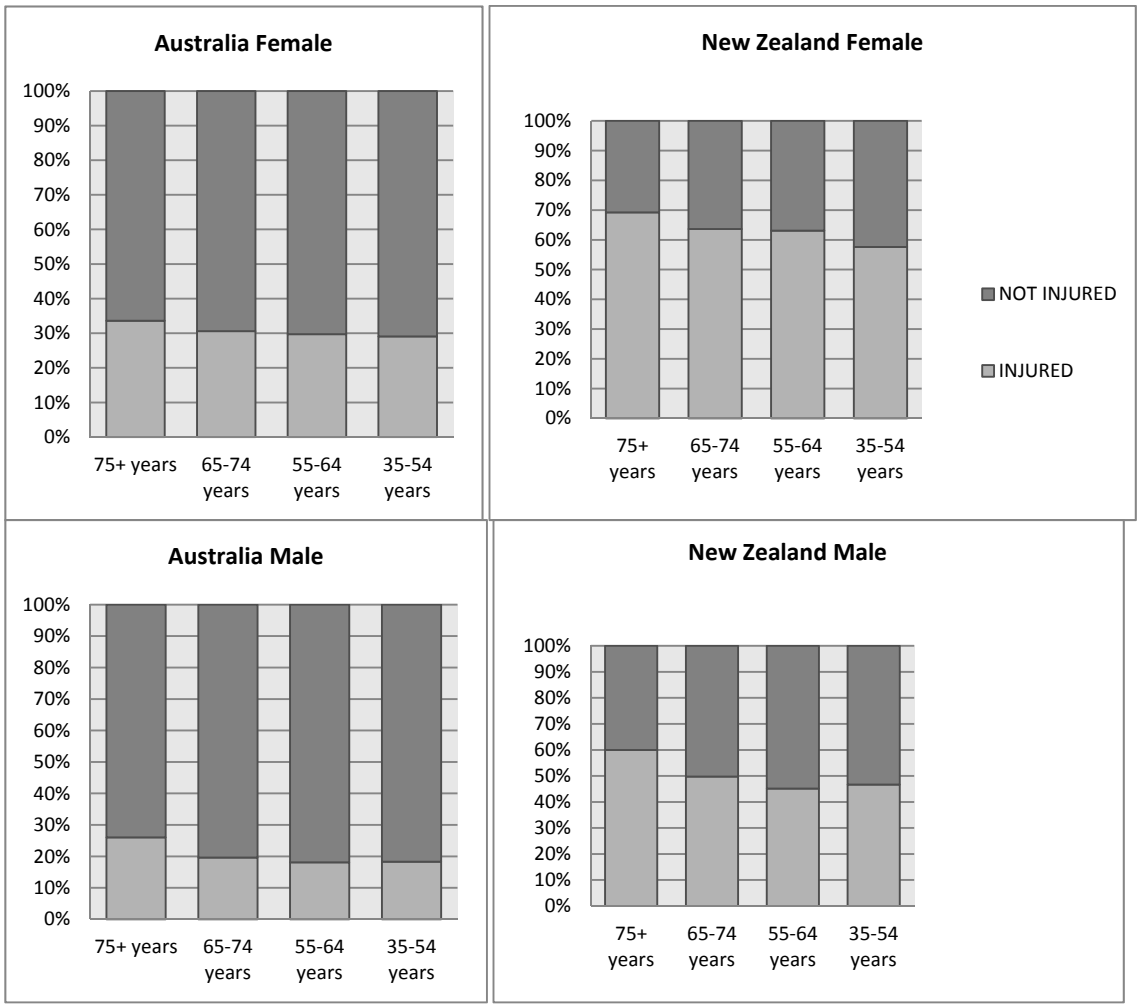

Figure 3: Distribution of injury risk across age groupings, by sex, of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

3.2.2 Injury Severity distribution of Crash Driver: Combined Australian states and New Zealand

The injury severity distribution for Police-reported injury crashes for the combined states (NSW, VIC, QLD, SA and WA) and New Zealand during 2005-2009 is displayed in Figure 4. A serious injury is defined as an injury resulting in death or hospital admission. Older drivers have a greater risk of serious injury and this risk increases with age for both Australian and New Zealand crashes. Compared with the 35-54 year age group, injured Australian drivers have a higher risk of serious injury by 19% for drivers 75 or older and by 10% for drivers aged 65 to 74. Injured New Zealand drivers overall are less likely to be seriously injured than injured Australian drivers. The effect of sex appears insignificant (Figure 5).

Distribution of injury severity by County and State and by Country/State and sex can be found in Table 48 through to Table 65.

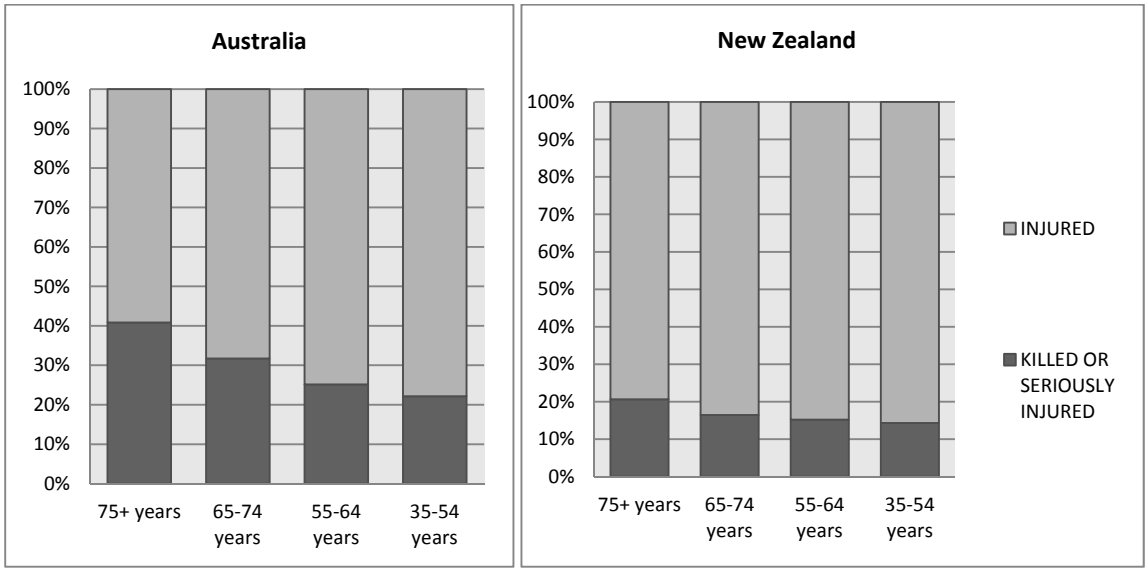

Figure 4: Distribution of injury severity across age groupings of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

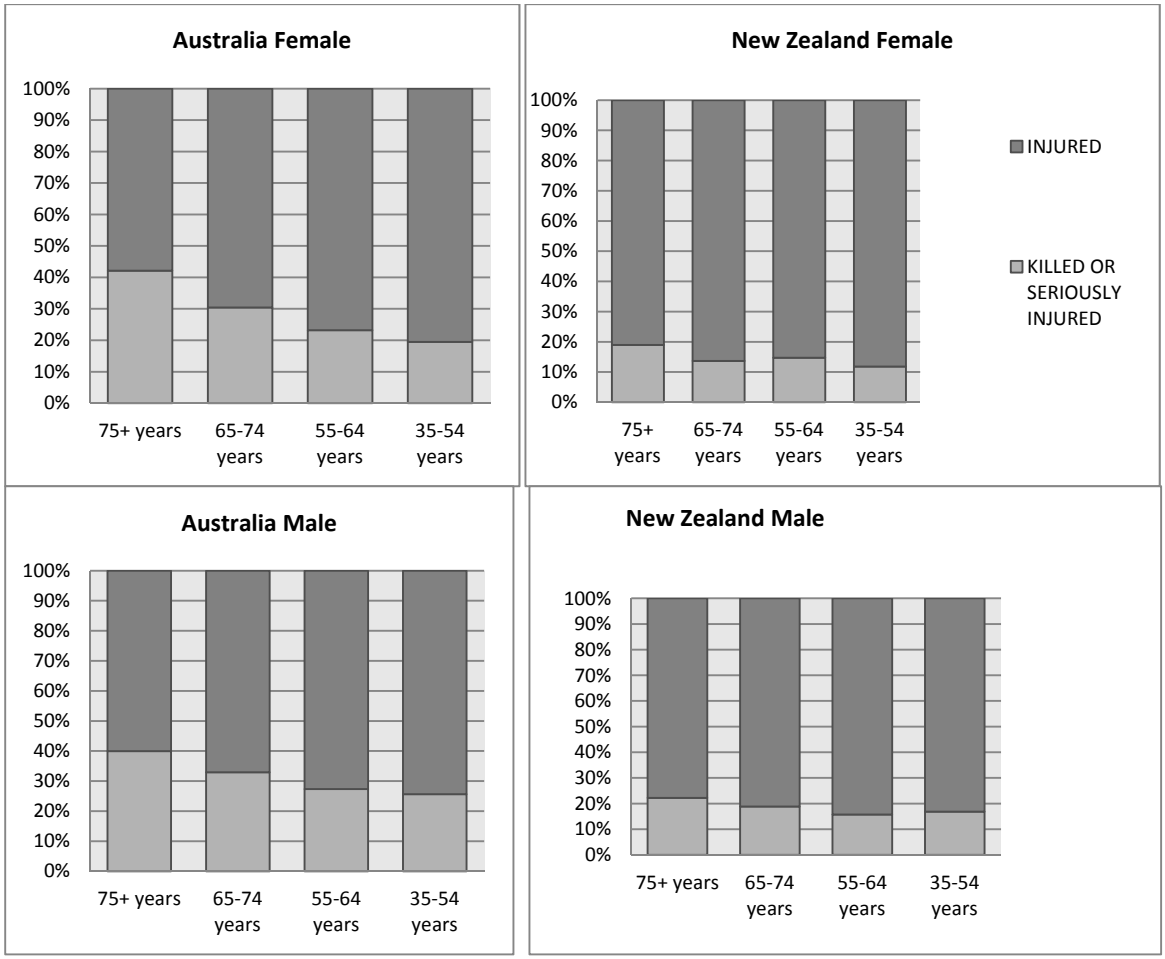

Figure 5: Distribution of injury severity across age grouping by sex of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

3.3 CRASHED VEHICLE AGE

3.3.1 Crashed vehicle age distribution: Combined Australian states and New Zealand

The distribution of crashed vehicle age across driver age groups for Police-reported crashes of all types for the combined states (NSW, VIC, QLD, SA and WA) and New Zealand during 2005-2009 is displayed in Figure 6 and in the Appendix in Table 66 and Table 69. The proportion of

crashed vehicles 16 years and older are over-represented in the older driver age groups - 5% and 10% units larger than the proportion within the 35-54 year age group for New Zealand and Australia respectively. In Australia, vehicles crashed that are less than 3 years old are under-represented in the older drivers' age grouping.

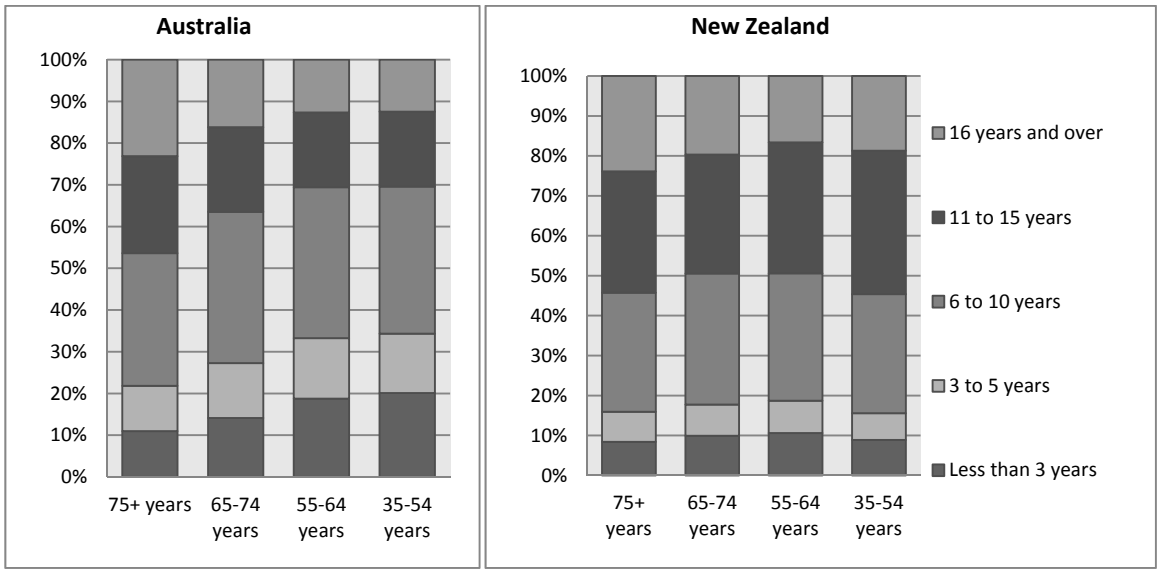

Figure 6: Distribution of crashed vehicle age across driver age groupings in Australia and New Zealand during 2005-2009

Consistent across all driver age groups, vehicles aged 6-10 years and 11-15 years account for the majority of crashed vehicle age. The difference in vehicle age distribution between males and females appears insignificant (Figure 7). Distribution of vehicle age group by country and state and by country/state and sex can be found in Table 66 through to Table 86 of the Appendix.

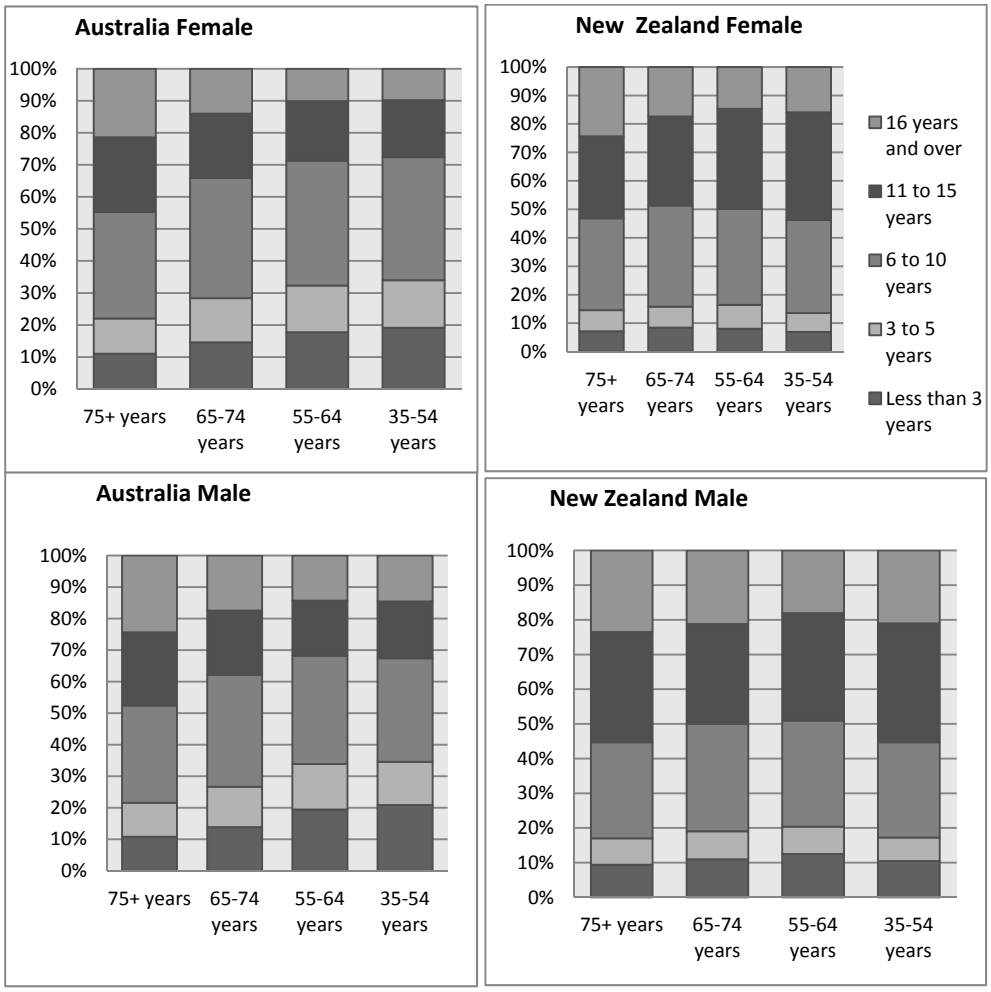

Figure 7: Distribution of Crashed Vehicle Age across driver age groupings by driver sex in Australia and New Zealand during 2005-2009

3.4 CRASHED VEHICLE MARKET GROUP

3.4.1 Crashed vehicle market group distribution: Combined Australian states and New Zealand

The distribution of crashed vehicle market groups across driver age groups for Police-reported crashes of all types for the combined states (NSW, VIC, QLD, SA and WA) and New Zealand during 2005-2009 is displayed in Figure 8, and in the Appendix in Table 87 and Table 90. Drivers aged 75 years or older are most likely to crash a vehicle categorised in the Small vehicle market group. The Small vehicle market group represents a greater percentage of vehicles crashed by this driver age group than for any other driver age group. Crashed Light vehicles are also over represented in the 75+ age group, particularly for New Zealand, where the Small and Light cars combine amount to about 66% of vehicles crashed by this age group. This trend is stronger in females than in males (Figure 9).

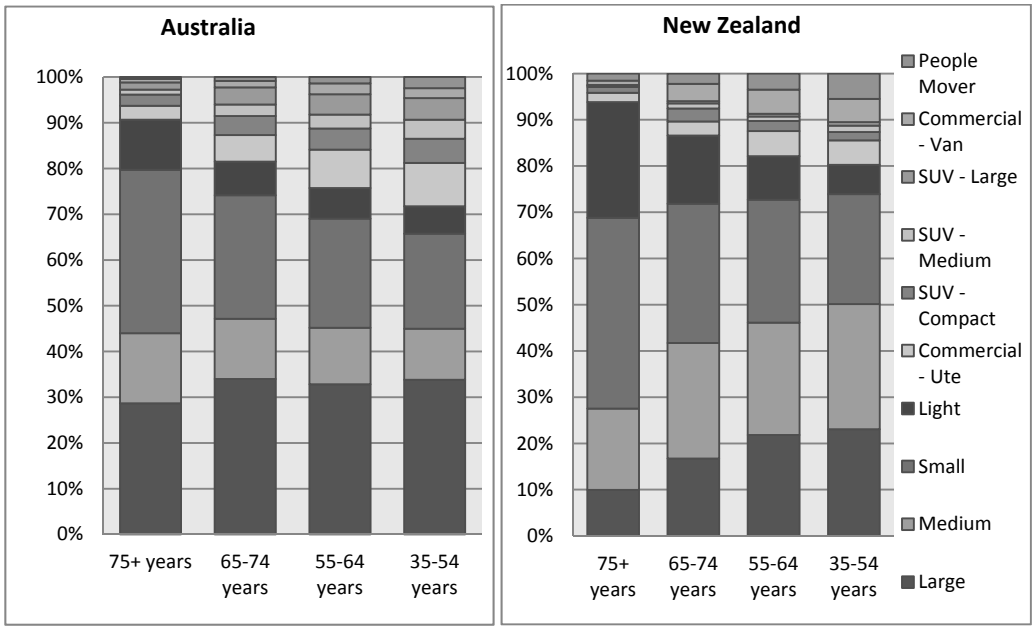

Figure 8: Distribution of Crashed Vehicle Market Group across driver age groupings in Australia and New Zealand during 2005-2009

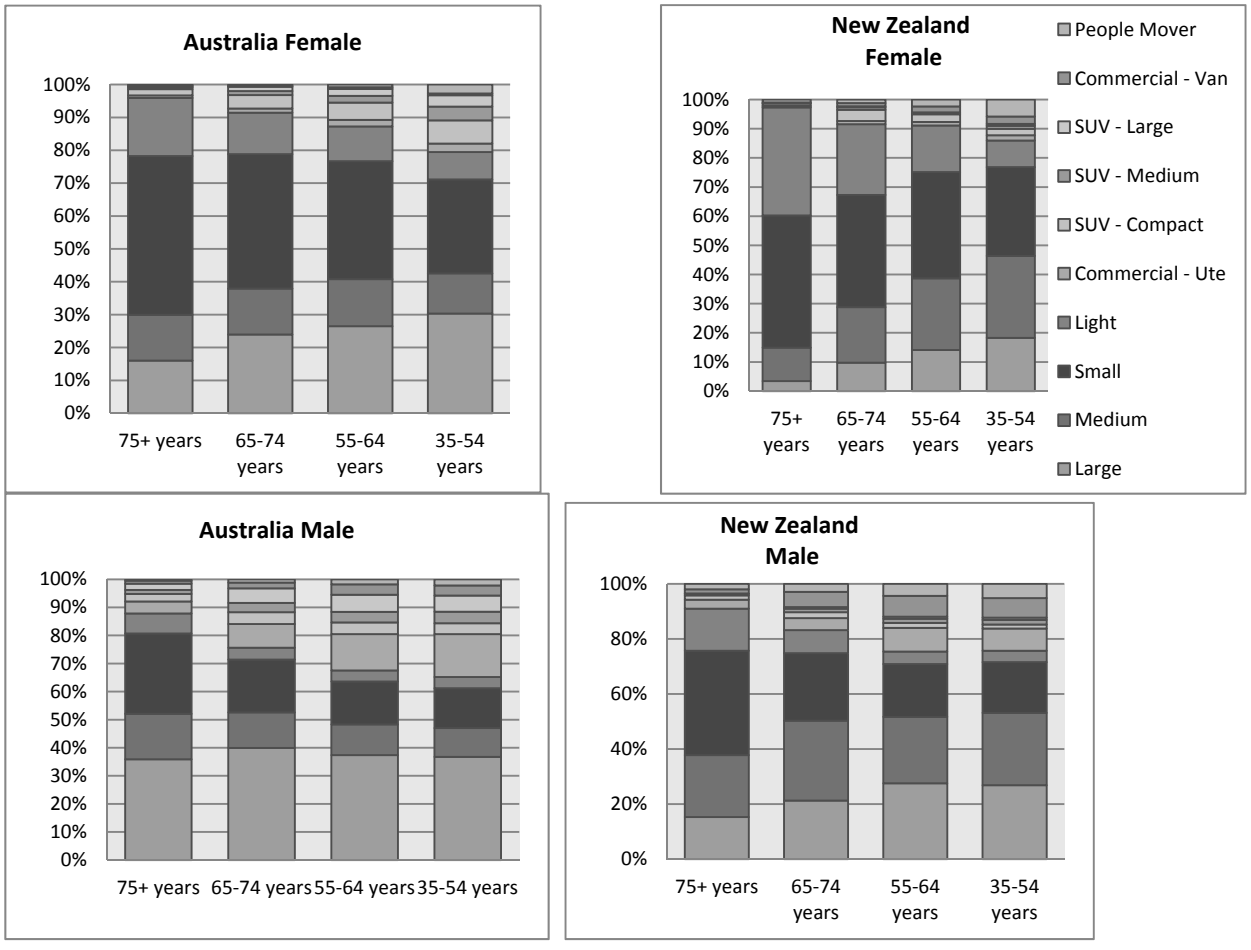

Figure 9: Distribution of Crashed Vehicle Market Group across driver age groupings by driver sex in Australia and New Zealand during 2005-2009

The preferred market group ranking for older drivers, starting with the most popular, is Small, Large, Medium, and then Light for Australia and Small, Light, Medium and Large for New Zealand. Distribution of Vehicle Market Group by Country and State and by Country/State and sex can be found in the Appendix in Table 87 through to Table 107.

3.5 SECONDARY SAFETY

3.5.1 Average Crashworthiness rating distribution: Combined Australian states and New Zealand

The distributions of average crashworthiness rating (CWR) across driver age groups by sex and vehicle age, for Police-reported crashes of all types for the combined states (NSW, VIC, QLD, SA and WA) and New Zealand during 2005-2009 are displayed in Figure 10, Figure 11 and Figure 12 and in the Appendix in Table 108 through to Table 111.

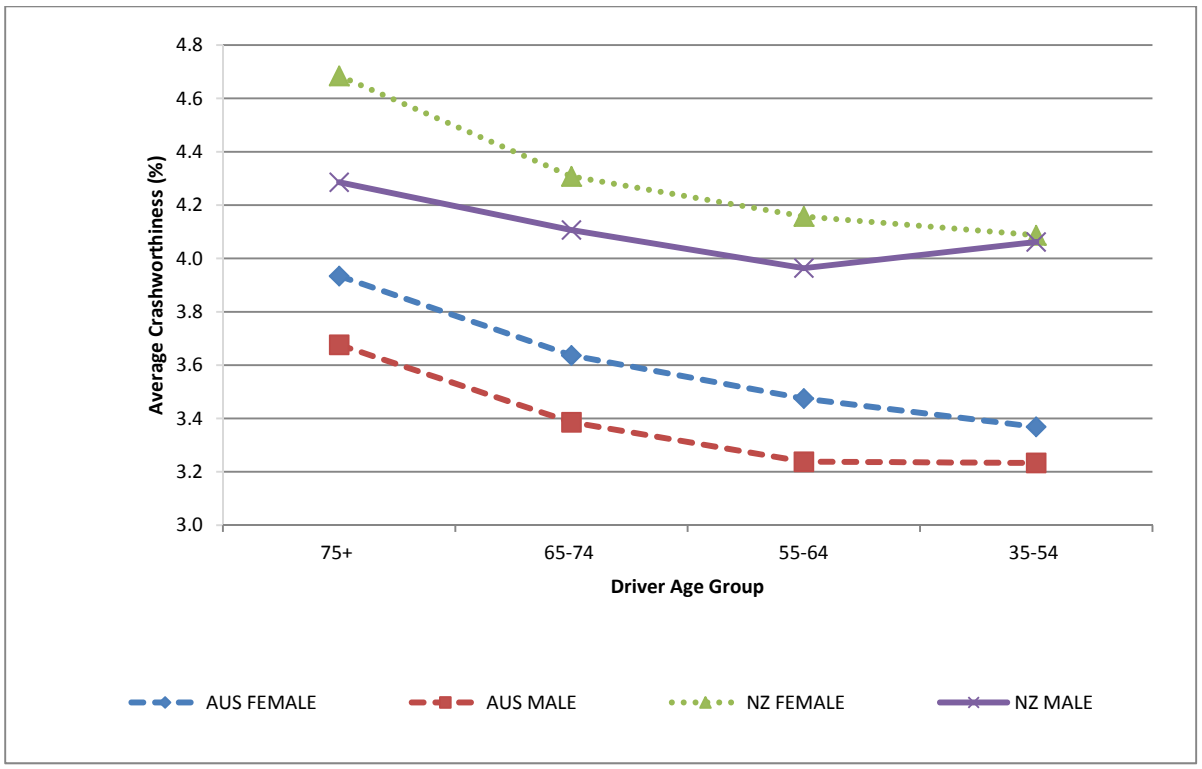

Figure 10: Average CWR of passenger vehicles involved in crashes by driver sex and age groupings in Australia and New Zealand during 2005-2009

Vehicles crashed by older drivers are more likely to provide poor secondary safety in terms of CWR and vehicles crashed by females, of any age, are more likely to provide poor secondary safety in terms of CWR.

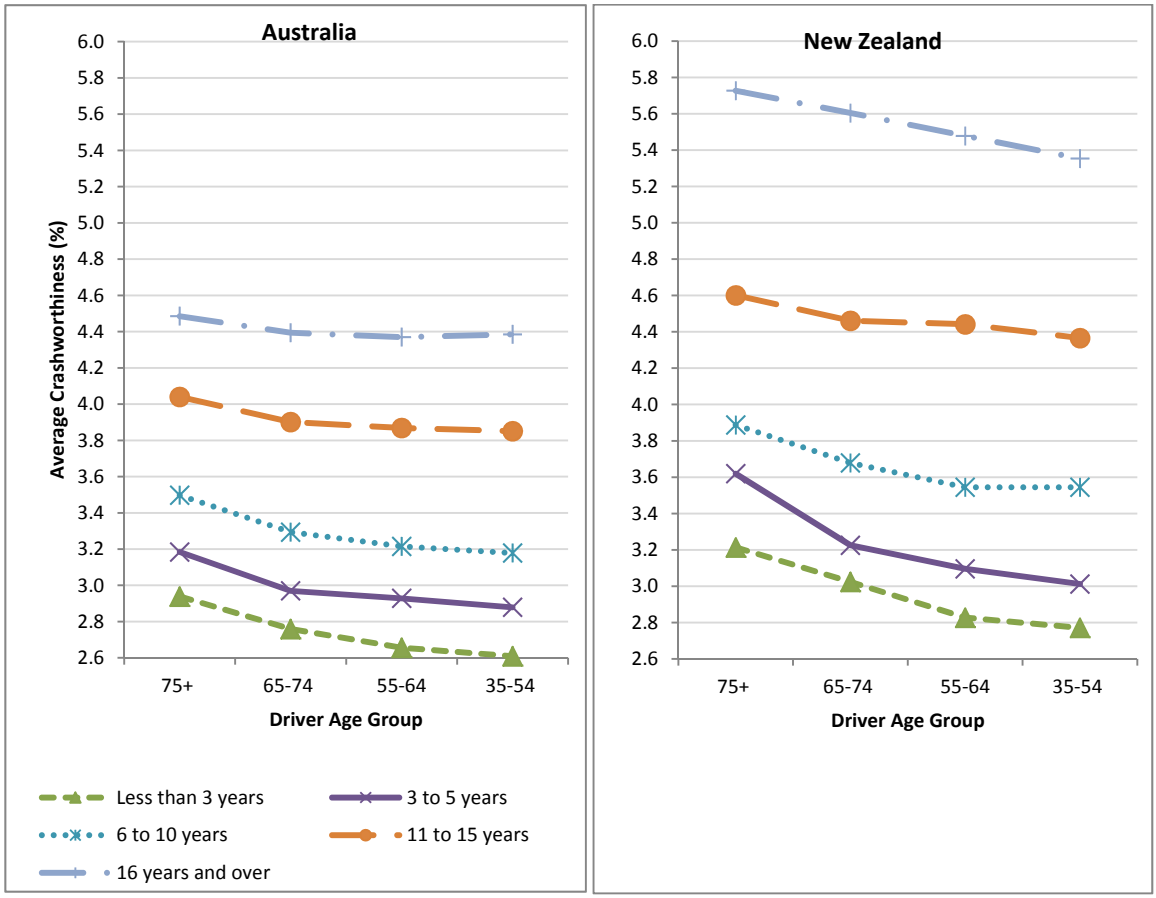

Figure 11: Average CWR of passenger vehicles involved in crashes by driver and vehicle age groupings in Australia and New Zealand during 2005-2009

Within the same vehicle age groupings, crashed vehicles in New Zealand exhibit poorer CWR than do vehicles crashed in Australia. Within each vehicle age group crashed vehicles driven by older drivers have a poorer average CWR compared to the comparison driver age group (Figure 12). This trend is more pronounced among crash-involved older female drivers (Figure 12).

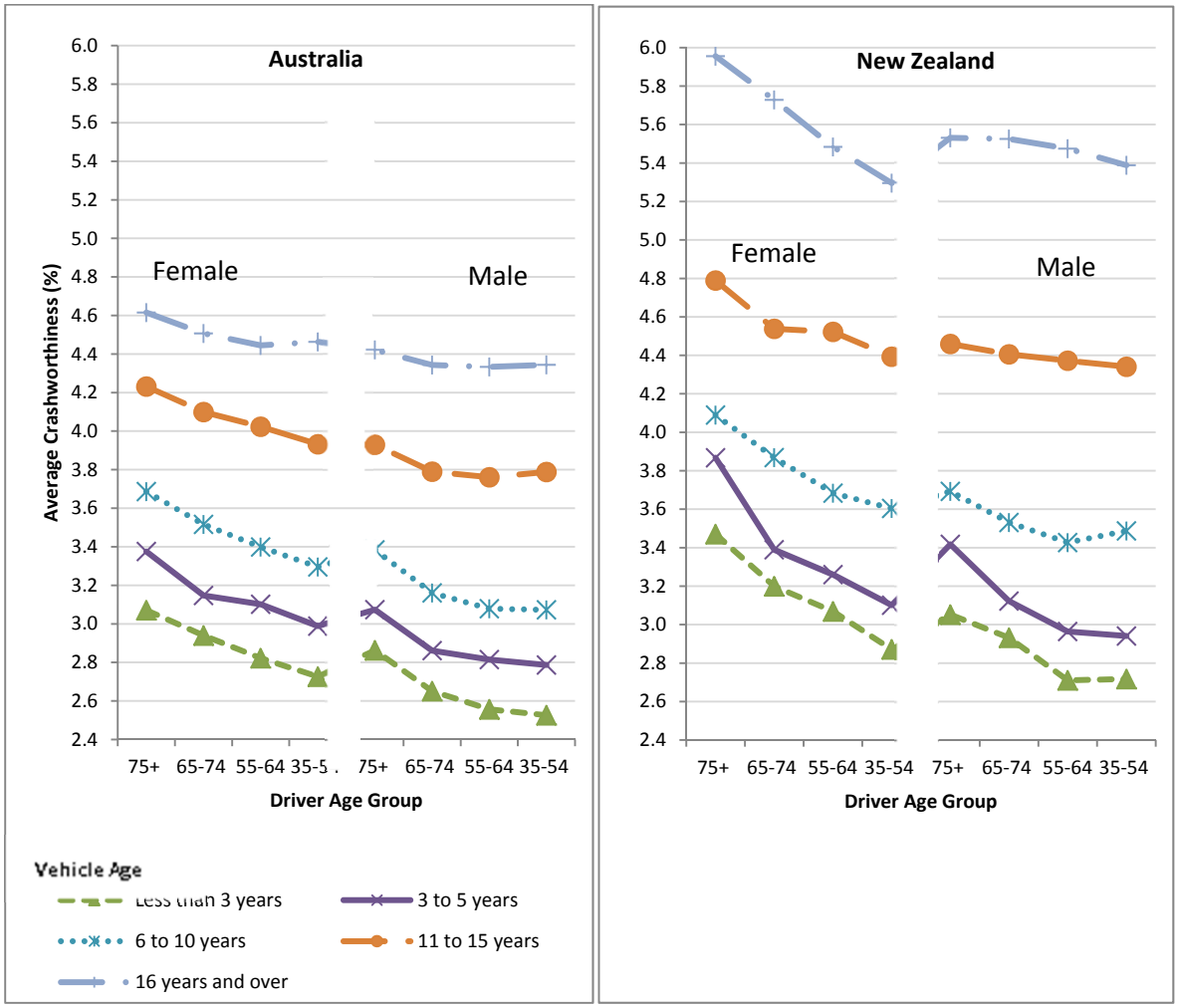

Figure 12: Average CWR of passenger vehicles involved in crashes across driver age groups and by driver sex and vehicle age groupings in Australia and New Zealand during 2005-2009

Within the same vehicle market groupings, vehicles crashed in New Zealand exhibit noticeably poorer CWR than vehicles crashed in Australia across all age groups, with the exception of Light vehicles. Figure 13 shows that for both Australia and New Zealand, the difference in average CWR between 65-74 year and 35-54 year old drivers for Small, Light, Medium and Large vehicle groups is only slight: less than ±0.1 percentage points. A trend for a small increase in CWR for crashed vehicles driven by those aged 75 year or over is seen for Small, Light, Medium and Large vehicles and for Large SUVs. The trend within New Zealand People Mover, Commercial Vans and Commercial Utilities is larger than, but not as large as that seen for Australia.

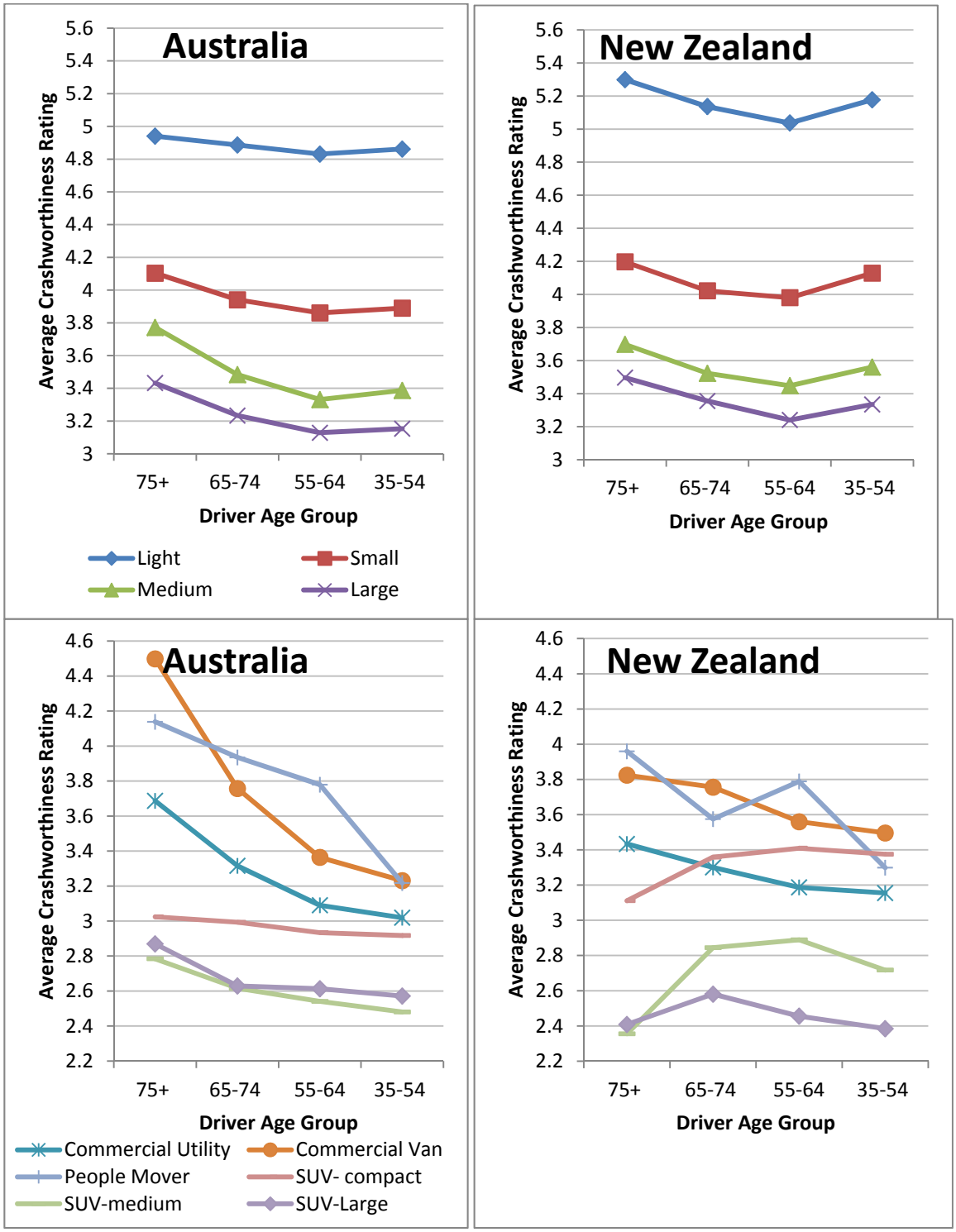

Figure 13: Average Crashworthiness Ratings of passenger vehicles involved in crashes by driver age and vehicle market groupings in Australia and New Zealand during 2005-2009

3.5.2 Average Aggressivity distribution: Combined Australian states and New Zealand

The distributions of average aggressivity ratings (AGG) across driver age groups by sex and vehicle age, for Police-reported crashes of all types for the combined states (NSW, VIC, QLD, SA and WA) and New Zealand during 2005-2009 are displayed in Figures Figure 14, Figure 15Figure 16 and in the Appendix in Table 112 through to Table 115.

Older drivers tend to crash vehicles with superior AGG than drivers aged 64 years or below, with older female drivers consistently crashing less aggressive vehicles than males (by about 0.3

percentage units) and with Australians driving more aggressive vehicles than New Zealanders (Figure 13).

Compared to the 35-54 year age group, crash-involved drivers aged 75+ crash vehicles with an AGG about 0.4% units lower for males and 0.5% units lower for females. The 65-74 year age group crash vehicles with an AGG of about 0.2% units lower.

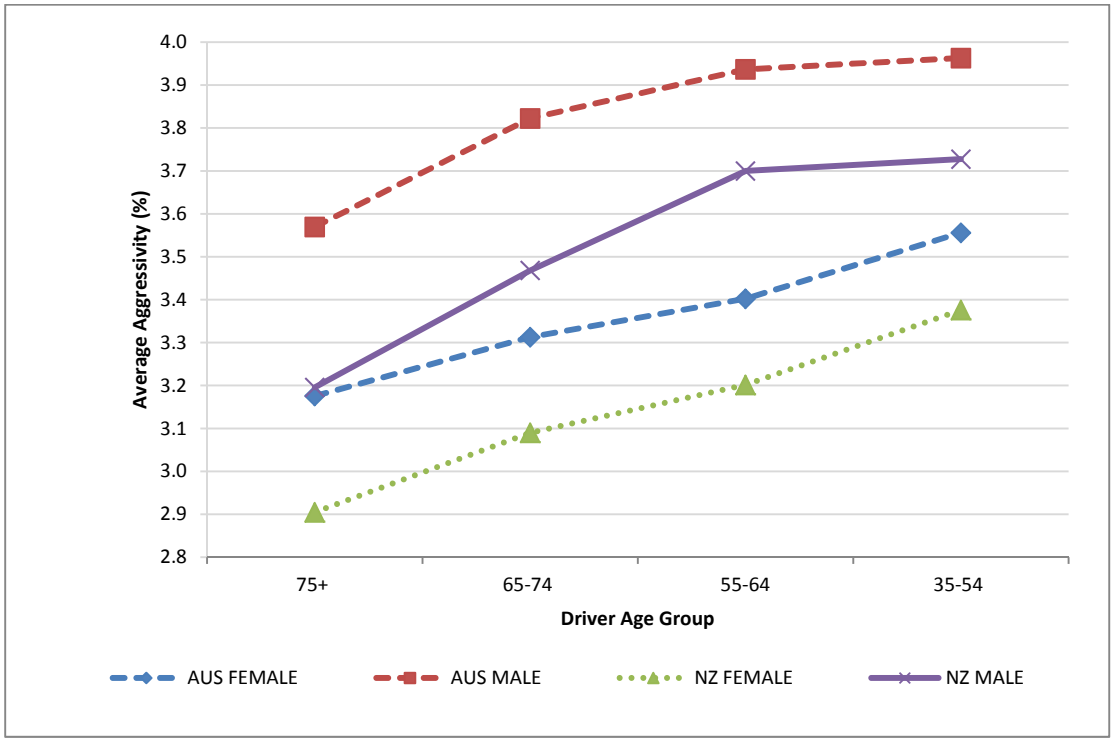

Figure 14: Average AGG of passenger vehicles involved in crashes by driver sex and age groupings in Australia and New Zealand during 2005-2009

Figure 15 shows that within the same vehicle age groupings, crashed vehicles in New Zealand exhibit lower AGG than do Australian crashed vehicles. For New Zealand there is a lesser difference in AGG between the various age grouped vehicles, with AGG being almost independent of vehicle age however in Australia there is an obvious trend for older vehicles to have greater aggressivity across all driver age groups. Figure 16 indicates that this trend remains when the data are separated by driver sex.

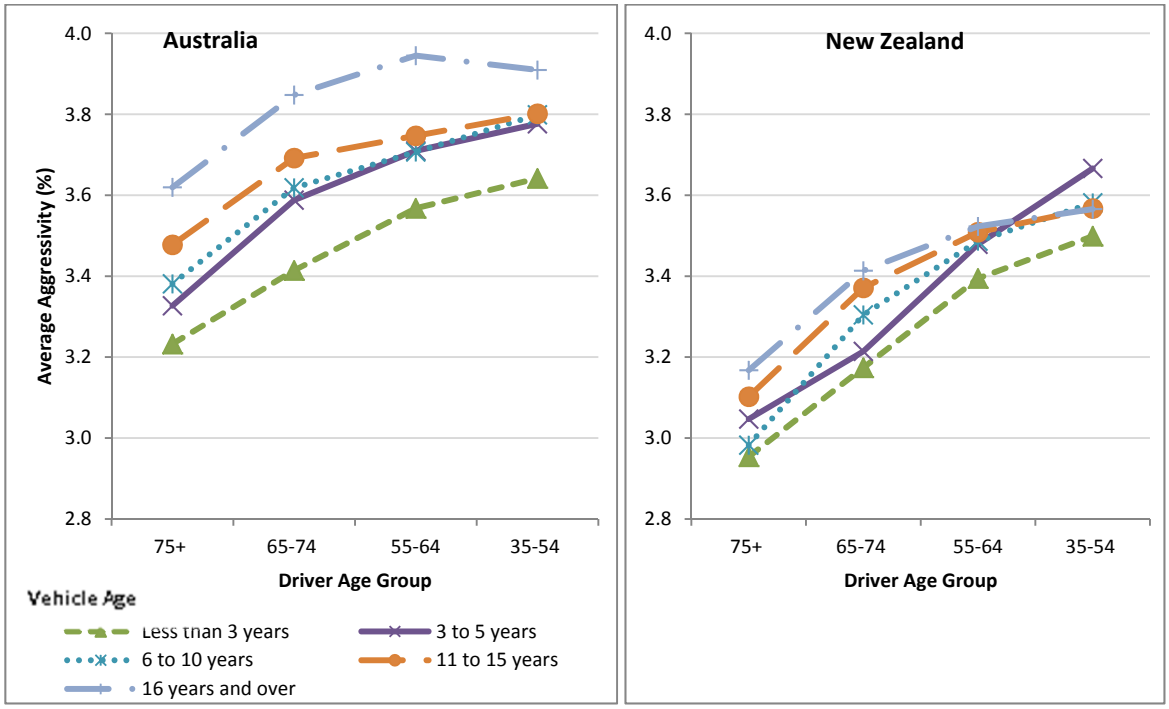

Figure 15: Average Aggressivity of passenger vehicles involved in crashes across driver age groups by vehicle age groupings in Australia and New Zealand during 2005-2009

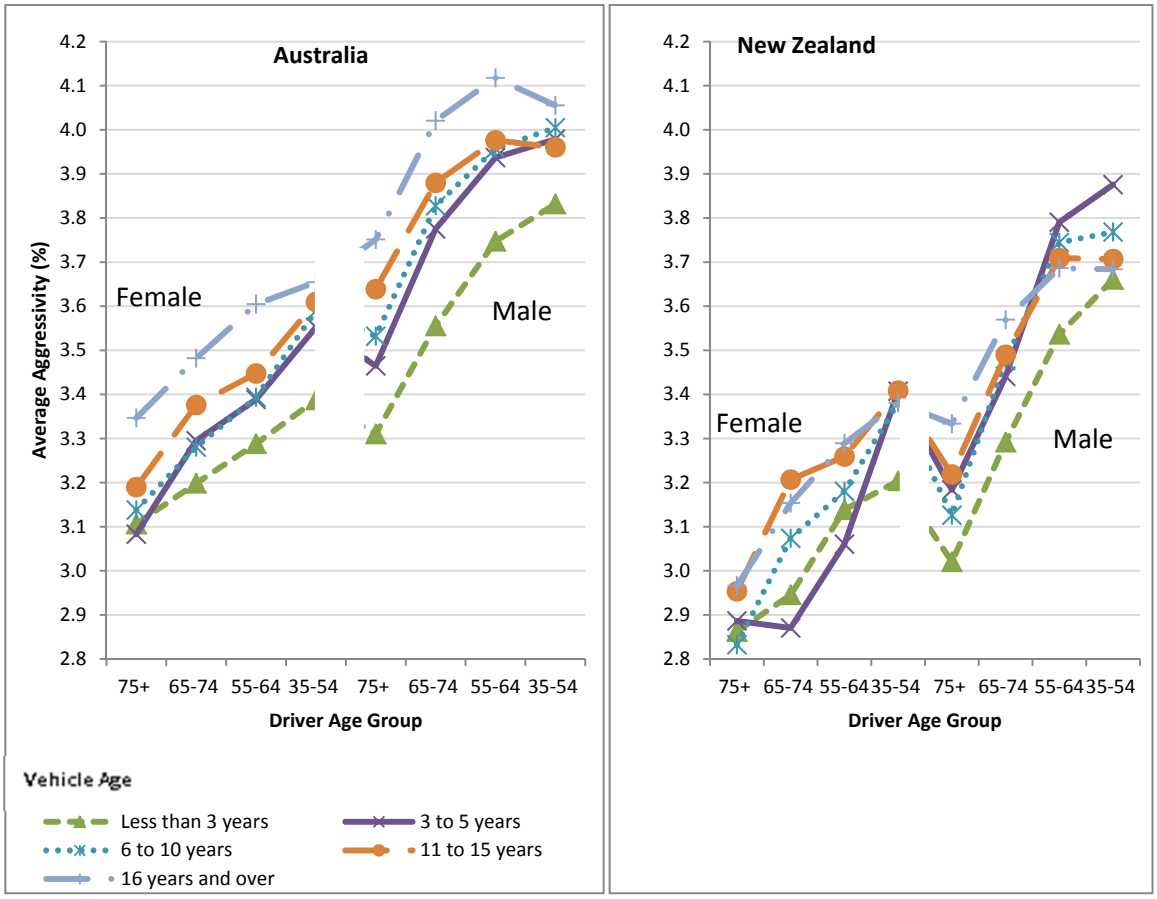

Figure 16: Average Aggressivity of passenger vehicles involved in crashes across driver age groups and by driver sex and vehicle age groupings in Australia and New Zealand during 2005-2009

3.5.3 Average Total Safety rating distribution: Combined Australian states and New Zealand

The distributions of average Total Safety Rating (TSR) across driver age groups by sex and vehicle age for Police-reported crashes of all types for the combined states (NSW, VIC, QLD, SA and WA) and New Zealand during 2005-2009 are displayed in Figures 17, 18 and 19.

There is a trend for older drivers to crash in vehicles with greater TSR, with older females consistently crashing vehicles with greater TSR than males (by less than 0.1 percentage units for Australia and by up to 0.25 percentage units for New Zealand). There is also a trend for Australians to be driving, on average, vehicles with lower total safety ratings than New Zealanders (Figure 17).

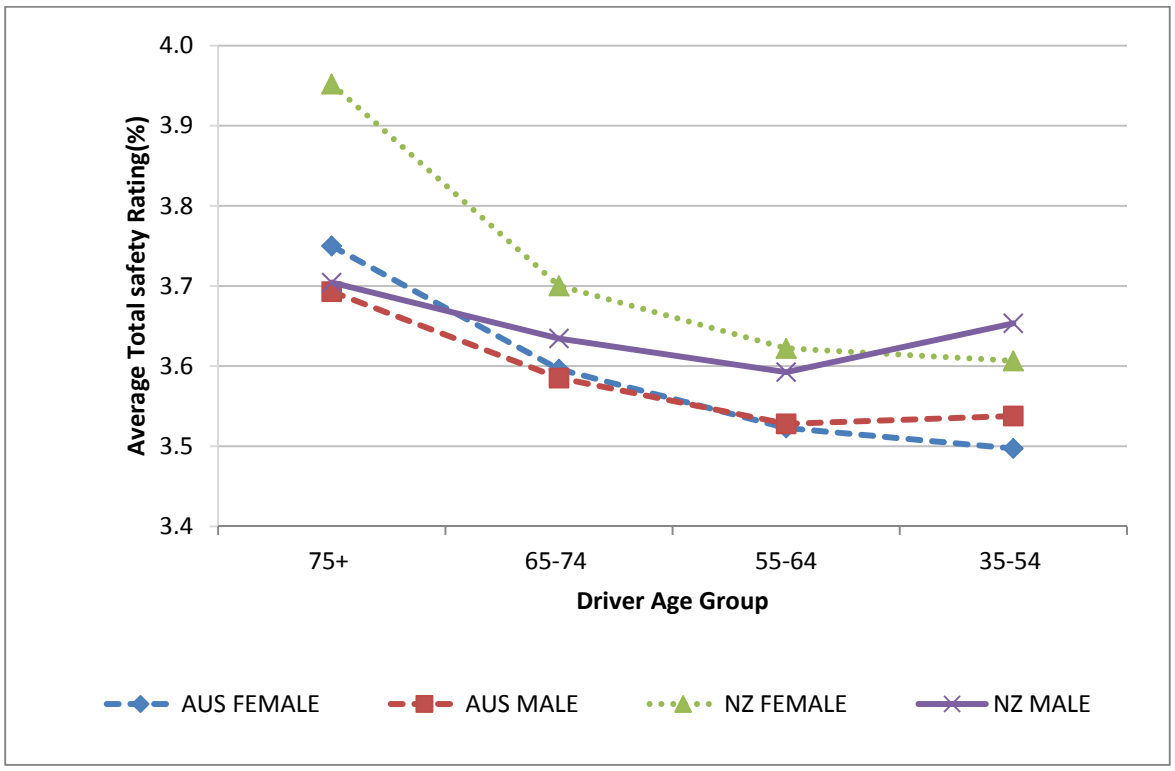

Figure 17: Average TSR of passenger vehicles involved in crashes by driver sex and age groupings in Australia and New Zealand during 2005-2009

Within the same vehicle age groupings, vehicles crashed in New Zealand exhibit higher TSR ratings than do vehicles crashed in Australia. There is a small trend within some vehicle age groups for crashed vehicles with higher TSR to be associated with older drivers (Figure 18). The trend is more pronounced with New Zealand crash-involved vehicles, with a greater differential between the 75+ and 35-54 years driver age groupings.

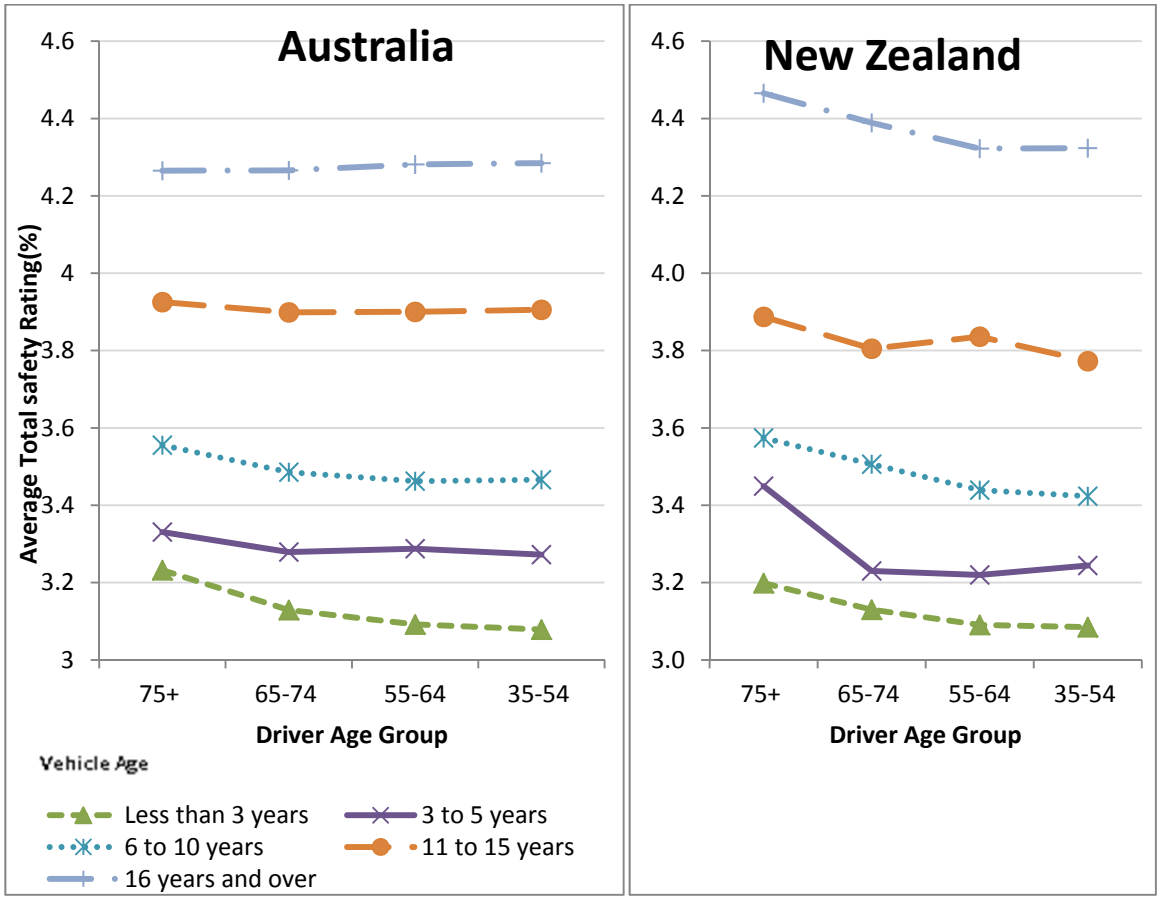

Figure 18: Average TSR of passenger vehicles involved in crashes across driver age groups by vehicle age groupings in Australia and New Zealand during 2005-2009

The trends for TSR across driver age and vehicle age, by driver sex are depicted in Figure 19. It shows that increased TSR for increased driver age is seen for females across all vehicle ages. The trend for New Zealand females is more pronounced. There is little difference in the vehicle TSR across driver age groups for male drivers; however differences in TSR are greatest in the oldest and youngest vehicle age groups in Australia (~0.1 % points).

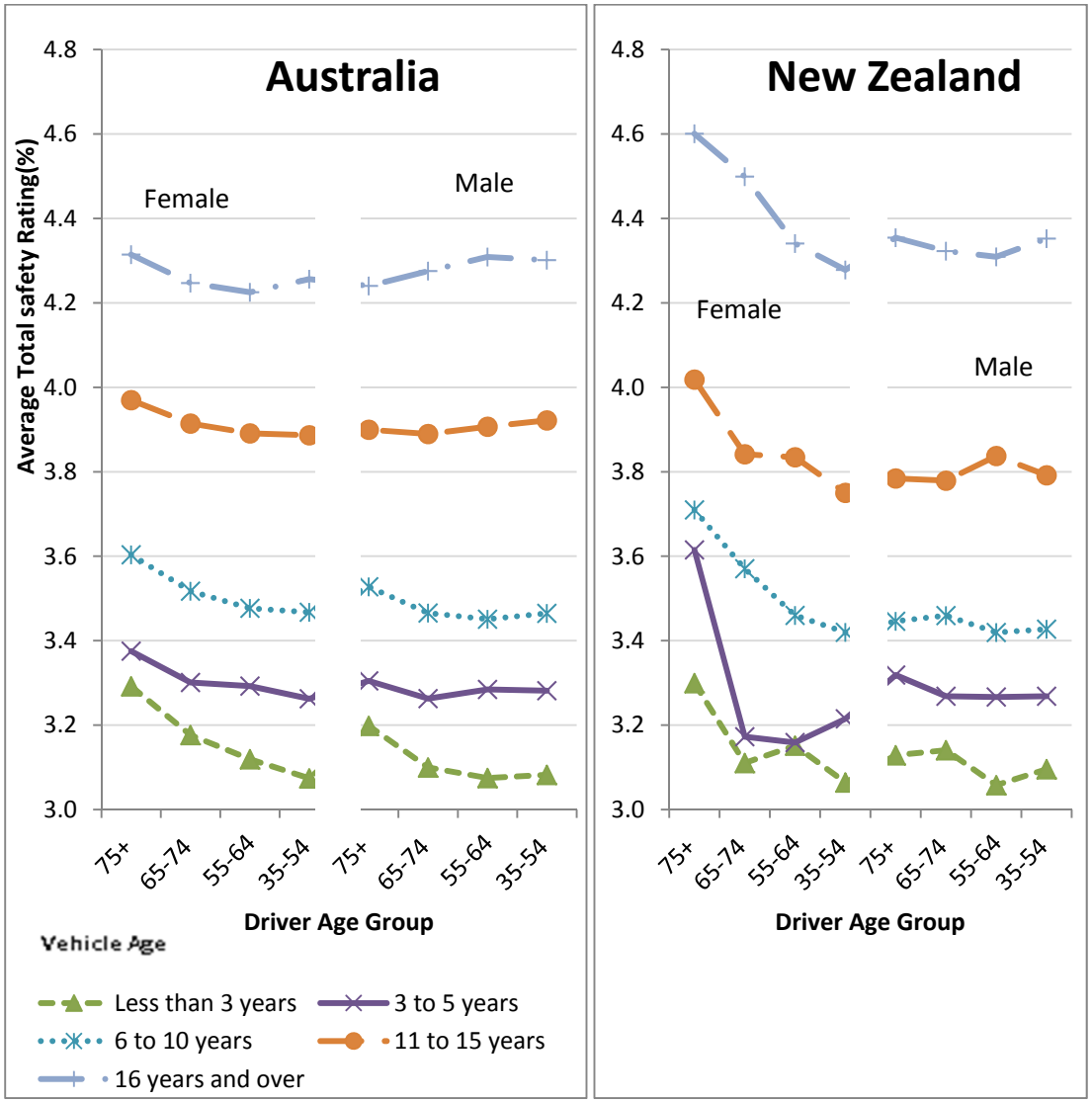

Figure 19: Average Total Safety Ratings of passenger vehicles involved in crashes by driver and vehicle age groupings in Australia and New Zealand during 2005-2009

3.6 PREFERRED MODELS

In the Appendix Table 116 and Table 117 display, for Australia and New Zealand respectively, the top 25 ranking models of crashed vehicles with the frequency and percentage of total, for older drivers, the comparison age group and over all ages. In Australia the most popular make for the 75 and older group is the Toyota and the preferred models are Camry and Corolla. These fill the top 7 positions. For the 65-74 year age group, Toyotas are substituted for Ford Falcons in the top 2 and 6th positions and Holden Commodore for the 5th and 7th. The comparison group similarly favours Holden Commodores and Ford Falcons, filling 6 of the top 7 positions, with the Camry in the 7th position. Over all age groups, the Commodore and the Falcon fill the top 7 positions.

In New Zealand, popular makes and models were more diverse and the top 7 models amongst older drivers tended to be older and smaller than the Australian top seven. Toyota Corolla, Nissan Pulsar, and Honda Jazz were the most popular makes and models for older drivers. For the comparison group, the most popular models were larger; the top 7 were Holden Commodore, Toyota Hiace, Honda Odyssey, Mitsubishi Magna, Toyota Tarago and Nissan Bluebird. The top 7 overall incorporated only some of these models.

Small and Light passenger vehicles were over-represented in older driver age groups. Ranking within these and the next size up (medium) market groups are displayed in tables 4.3 to 4.8 for Australia and New Zealand crashed vehicles. These tables show the ten most popular models for older drivers, the 35-54 year age group and for all ages, within these three market groupings. Toyota Corollas make up 27% of the Australian and 19% of the New Zealand crashed Small passenger vehicles. The Toyota Echo, Suzuki Swift and Holden Barina rank highly in both Australia and New Zealand for crashed Light passenger vehicles.

Crashworthiness ratings that were better than average were identified for the most popular models in order to develop vehicle optimisation scenarios. This meant that model CWRs were considered only if their estimated 90% confidence interval did not include the weighted all model average of 3.57. No light model CWR met this requirement. The CWR estimate for 14 small, 18 medium, 18 large, 5 people mover, 3 van, 12 utility, 7 compact SUV, 8 medium SUV and 10 large SUV models met this requirement.

The most crashworthy popular model (of top 10) within Australia are the Ford Falcon BA manufactured from 2002 to 2008, which has a CWR of 2.47% (90% CI: 2.28, 2.68) and ranks 3rd over all Australian drivers (2.1%) and 6th within the over 65-74 year old Australian drivers (1.8%) in this crash database. The vehicle with second best crashworthiness rating (3.03%, 90% CI: 2.85, 3.22), the Ford Falcon AU, manufactured from 1998 to 2002, ranked as the 6th most popular model over all Australian drivers, 2nd most popular for drivers aged 65-74 and 13th most popular for Australian drivers 75 and over. The most crashworthy popular model amongst drivers aged 75 and over, involved in a crash, was the Holden Commodore VT/VX with a CWR of 3.166% (90% CI: 3.02, 3.32) and a rank of 9. It was also the most popular model of all Australian drivers involved in a crash. It was manufactured from 1997 to 2002. All 3 of these popular models are from the "Large" market group.

Of the top 10 most popular models involved in New Zealand crashes, overall and for older driver groups, the Ford Mondeo was the only model to have a CWR estimate with 90% confidence intervals that did not include the all model CWR average of 3.57%. This means that it is the only (top ten) popular model that can offer a CWR better than average. It ranked in the top ten most popular models for 65-74 year old New Zealand drivers with a CWR of 2.97% (90% Confidence Interval: 2.52, 3.49). It ranked 26th overall (0.7%), 41st amongst the 75 and over drivers (0.6%) and 5th for the 65-74 years group (1.0%). The Ford Mondeo belongs to the 'medium' market group and was manufactured between 1995 and 2001.

The most crashworthy popular models by market group, for all market groups except 'Light', are summarised in Table 4.9. Popularity within a market group was determined by at minimum of 2% of the market share within the group and by presence in the top 10 ranked models of the group for both crash involved drivers 75 and older and 65-74 years old. No light models possessed better than average CWR and no New Zealand medium SUV models with better than average CWR were popular. There were models with better than average CWR within this New Zealand market group which were popular within either the 75+ years or the 65-74 years, but none that were even present in any number in both groups. The popular model with the best CWR with each older-driver age group separately has been included in Table 4.9 for New Zealand medium SUVs.

3.7 AGE OF VEHICLE WHEN PURCHASED BY OLDER DRIVERS

A greater percentage of drivers in Victoria aged 75 or over are crashing vehicles acquired as new vehicles when compared with drivers aged 65-74 and 35-54. Table 5 displays the proportion of drivers by age for vehicles grouped by the age when acquired by the owner of the crashed vehicle when crashed. Drivers aged 75 or over are more likely by 11 percentage points, than the comparison group, to be crashing a vehicle that they acquired new. Drivers aged 65-74 are

driving only a slightly greater (3 percentage points) proportion of vehicles acquired new than the comparison group and they have proportionally similar representation in all of the used vehicle categories as the comparison group. Drivers aged 75 or over are under-represented in all of the used vehicle age categories presented in Table 5.

Table 5: Frequency of Victorian crashed vehicles for age group when acquired by driver age groups.

	Vehicle age when acquired (Years)											
	New		Used									
			<3		3-5		6-10		11-15		16-27	
Driver age group (years)	N	%	N	%	N	%	N	%	N	%	N	%
75+	1,364	43	479	15	464	14	442	14	311	10	147	5
65-74	1,542	35	745	17	732	17	665	15	440	10	249	6
35-54	9,868	32	4,682	15	5,248	17	5,213	17	3,433	11	2,219	7

However, older drivers are keeping their cars for longer periods than the comparison age group. The difference between the average age at purchase and the average age at the crash is about 3.5 years for the comparison group (Table 6). However for older drivers this difference is 7.1 years for drivers aged 75 or older and 5.4 years for drivers aged 65-74 years.

Table 6: Average Age of Victorian crashed vehicles when acquired by driver age groups

	Average Vehicle age (Years)			
	When Acquired		When crashed	
Driver age group (years)	mean	sd	mean	sd
75+	3.9	5.2	11.0	6.4
65-74	4.4	5.4	9.8	6.2
65+	4.2	5.3	10.3	6.3
35-54	5.0	5.7	8.5	6.0

4.0 STAGE 2: IDENTIFYING CRASH TYPES WHERE OLDER DRIVERS ARE OVER-REPRESENTED WHEN COMPARED TO DRIVERS AGED 35-54 YEARS

4.1 DRIVING CONDITIONS AT TIME OF CRASH

4.1.1 Time and Day of Crash: Combined Australian states and New Zealand

Figure 20 indicates that older drivers are more likely to crash during the day on weekdays. There are no significant gender differences (Figure 21). The data for each jurisdication seperated by driver sex can be found in Table 125 through Table 135 of the Appendix.

Figure 22, Figure 23, Figure 24 and Figure 25 display the breakdowns of crashes by time of day, day of week by injury risk and injury severity. In addition graphs depicting ambient light conditions (day and night) are also depicted.

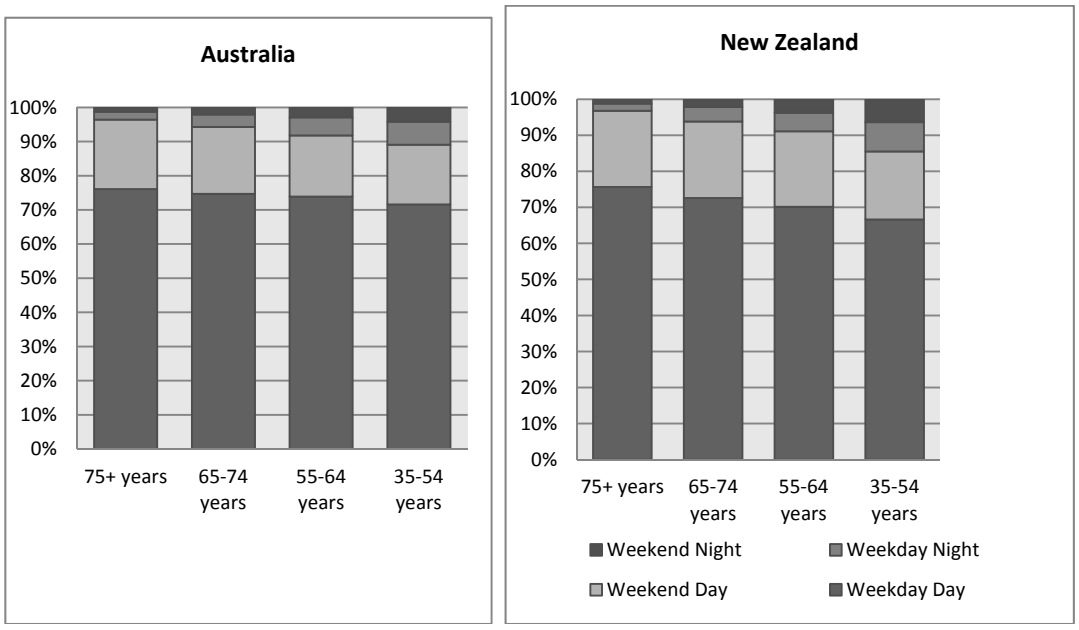

Figure 20: Distribution of time and day by age groupings of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

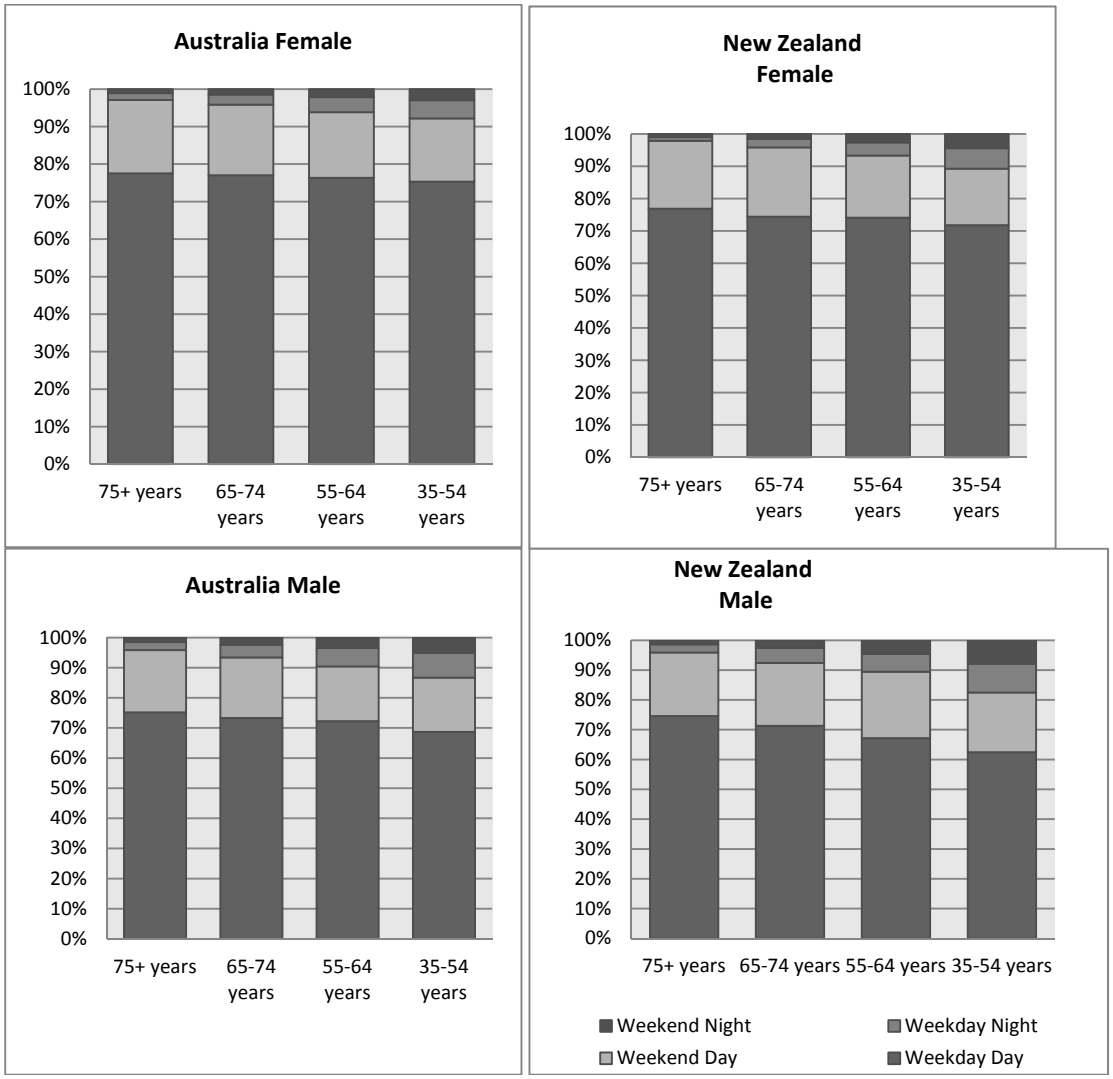

Figure 21: Distribution of time and day across age groupings by sex of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

Crash-involved older drivers as compared with crash-involved drivers aged 35-54 years were reported to have been involved in a greater percentage of serious weekday daytime crashes (up to 18% units more) and the differences between age groups were larger for males than for females; and increased with increasing crash severity. Similar trends were found for light ambient conditions and weekend day time. Older drivers were not over-represented in night time crashes, contributing to no more than 12% of all week night time (by time of day definition) crashes regardless of injury level.

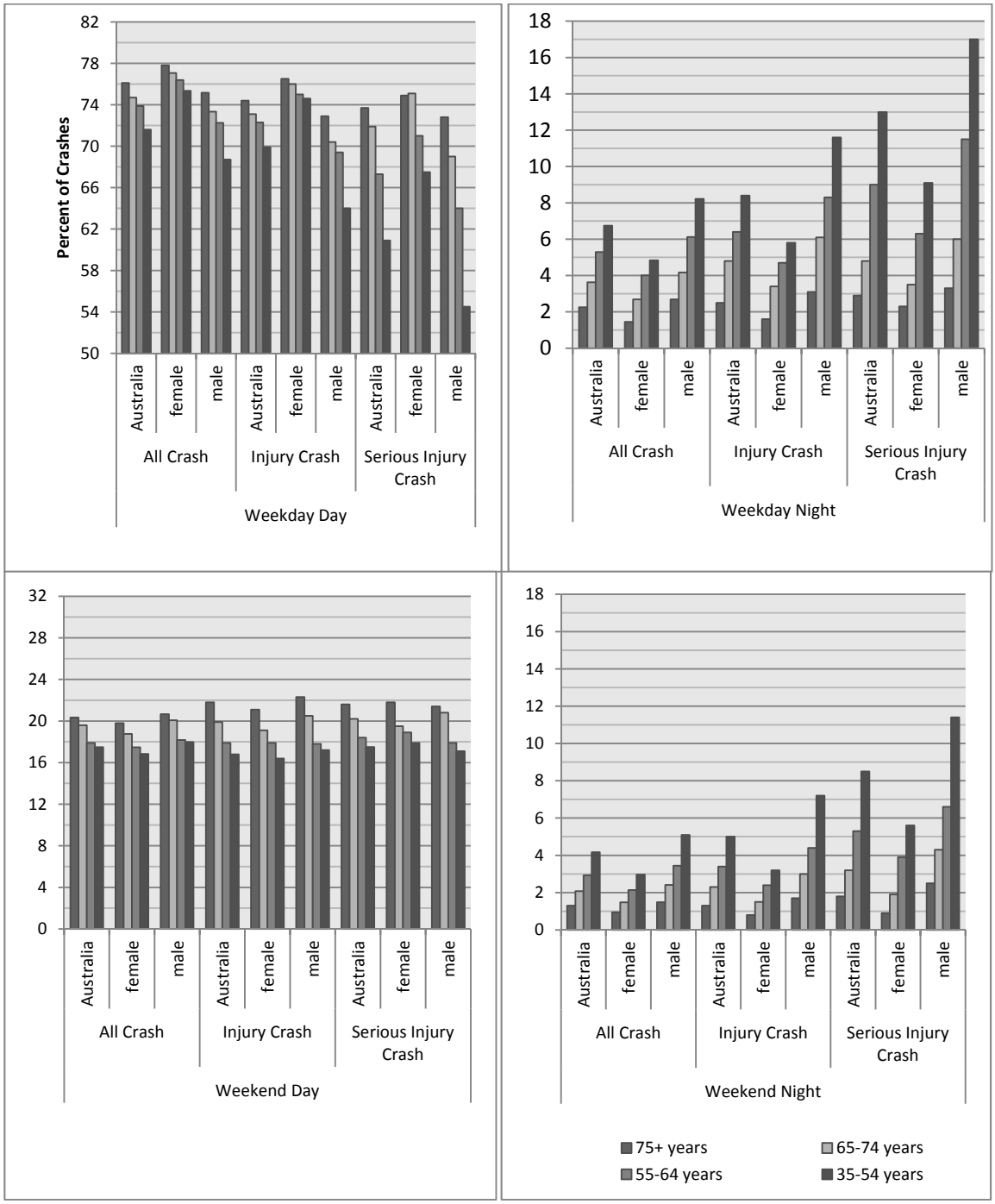

Figure 22: Percent crashes at times of day and week by injury level and age and sex of drivers of passenger vehicles involved in Australian crashes during 2005-2009

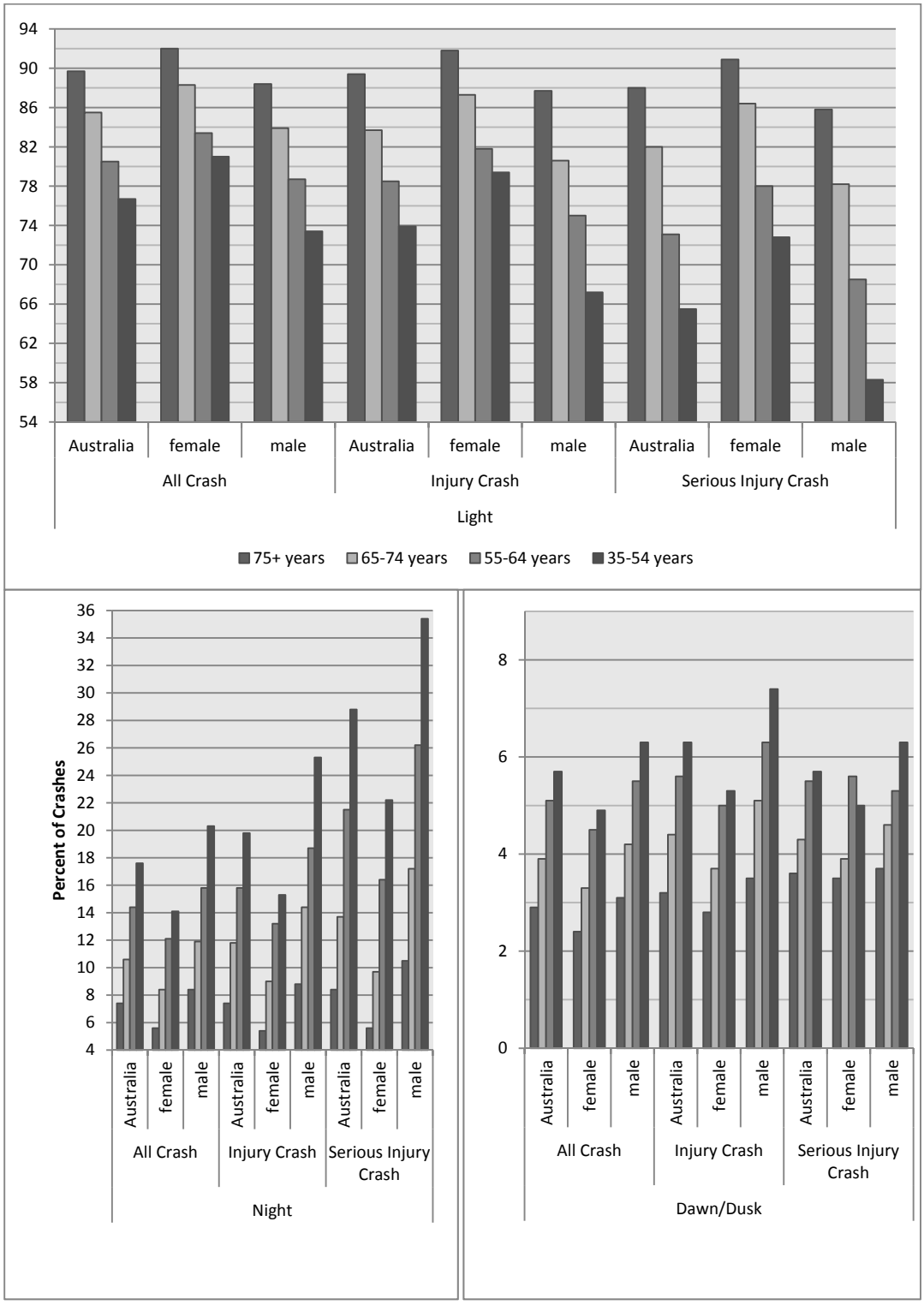

Figure 23: Percent Crashes at Ambient Light conditions by injury level and age group and sex of drivers of passenger vehicles involved in Australian crashes during 2005-2009

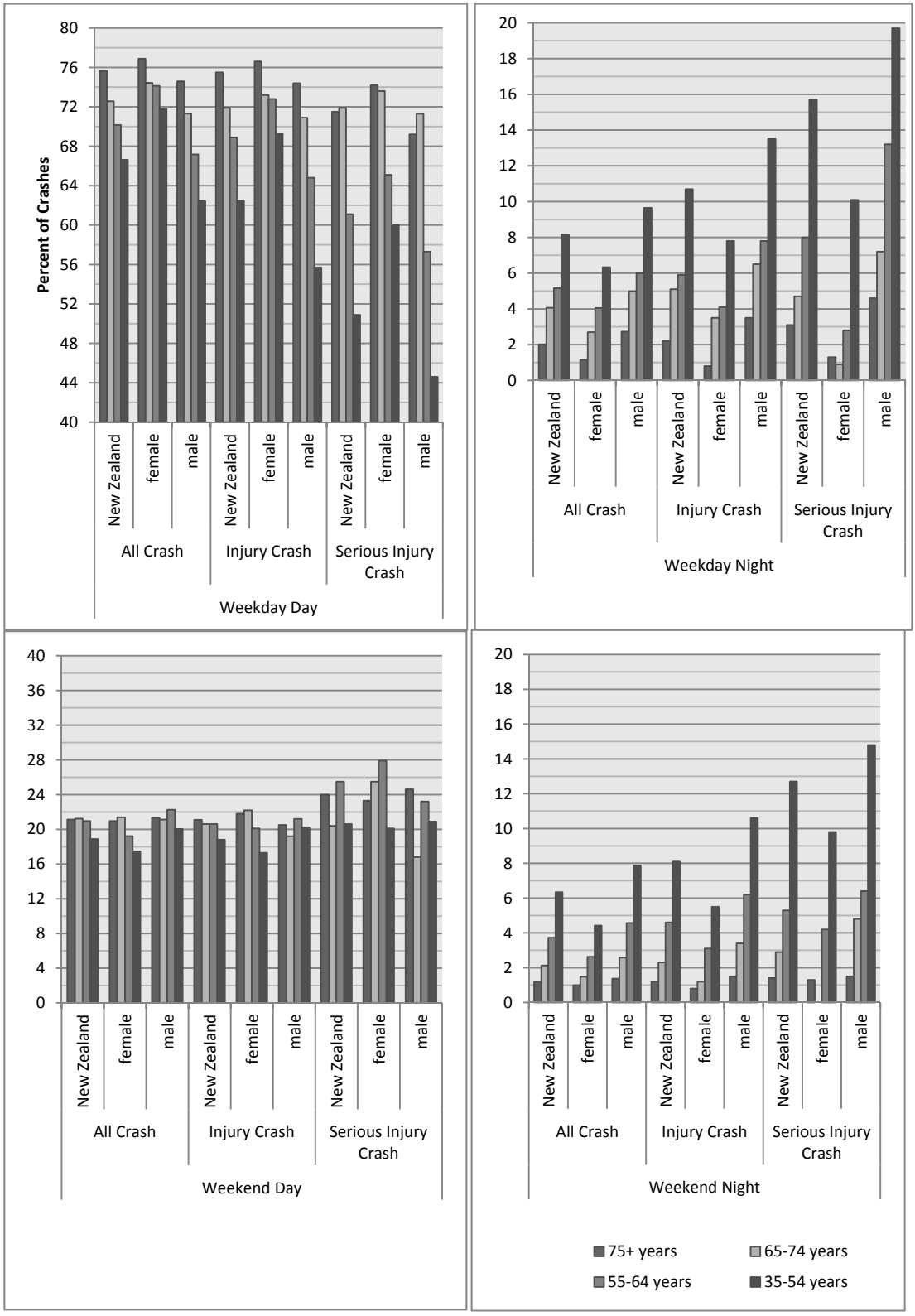

Figure 24: Percent Crashes at times of day and week by injury level and age group and sex of drivers of passenger vehicles involved in New Zealand crashes during 2005-2009

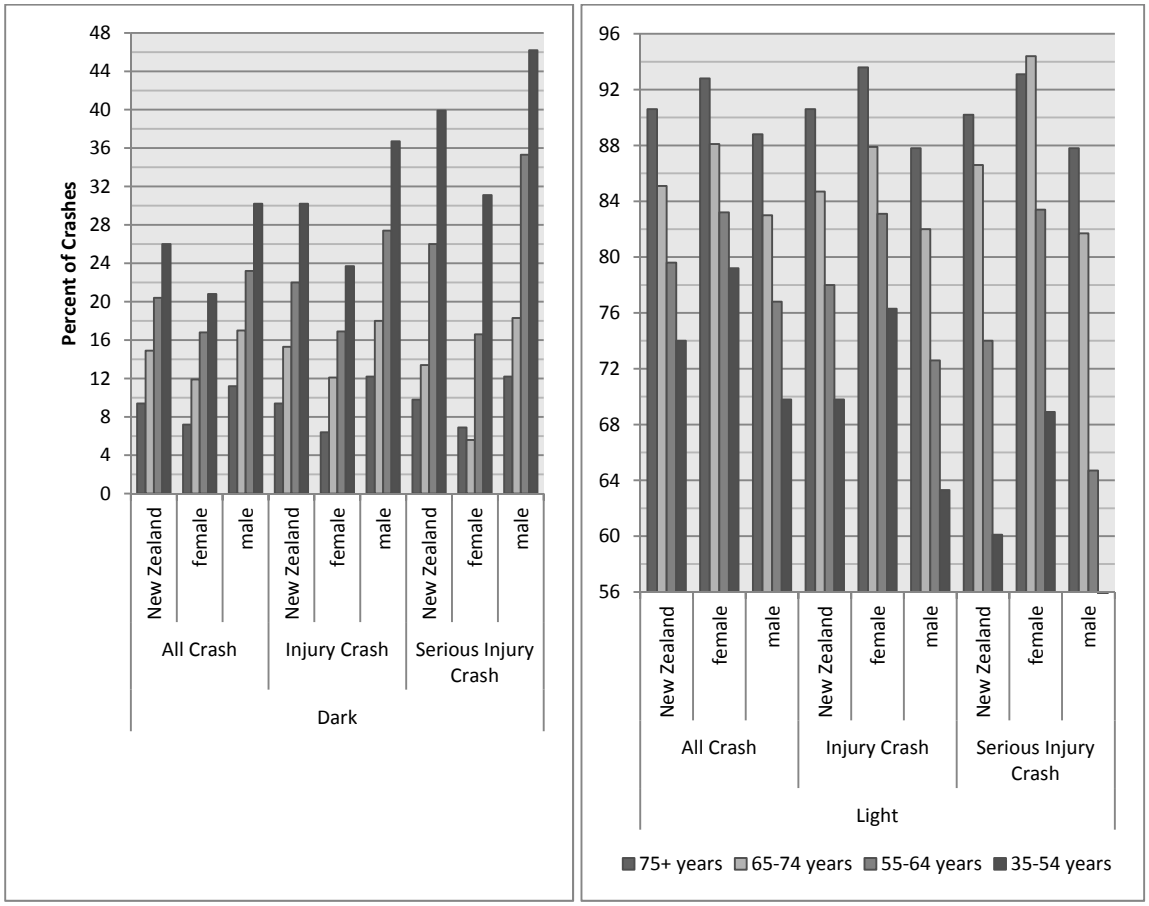

Figure 25: Percent Crashes at Ambient Light conditions by injury level and age group and sex of drivers of passenger vehicles involved in New Zealand crashes during 2005-2009

4.1.2 Moisture on Roads: Combined Australian states and New Zealand

Figure 26 Figure 27 display the percentage of crashes on wet or dry roads for Australian and New Zealand males and females by age group and by injury risk and injury severity.

Older drivers are more likely than the comparison group to be involved in a crash on a wet road. The proportion of older drivers in dry road crashes remains fairly constant whether considering all crashes or only injury or serious injury crashes. Older males have a greater percentage of crashes on wet roads than older females.

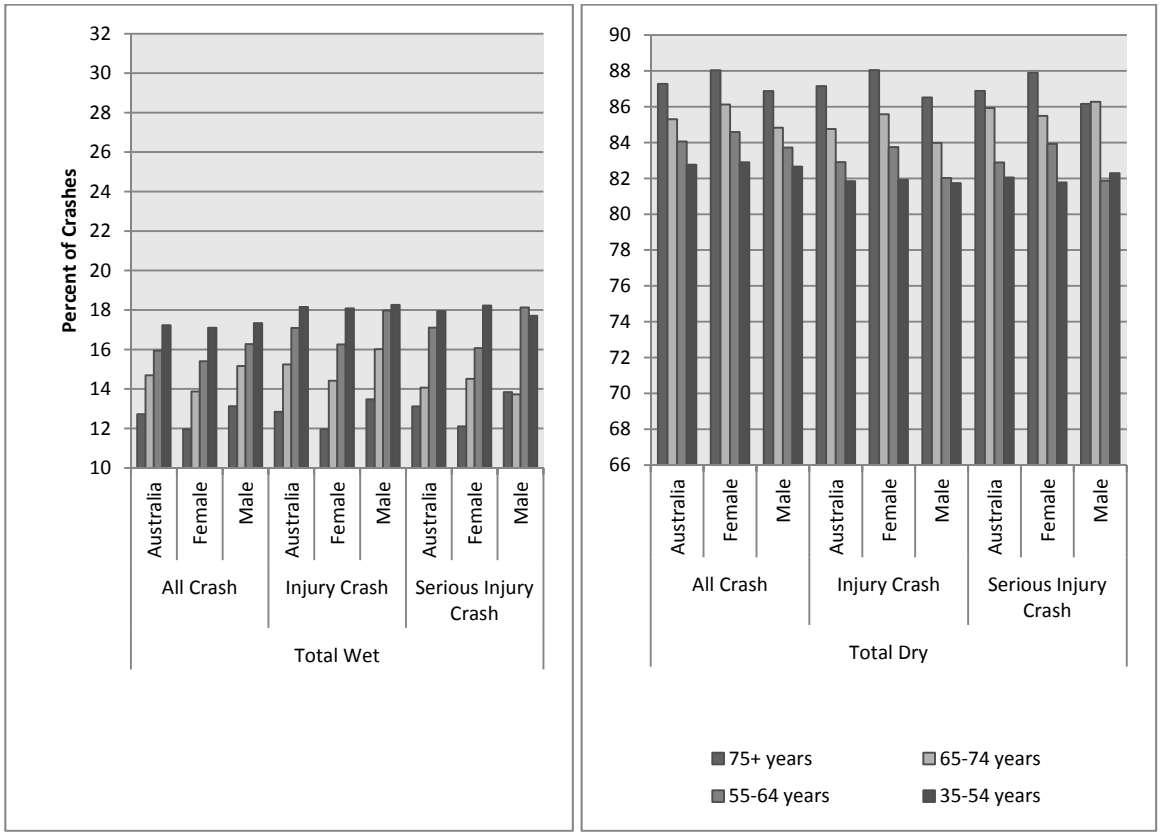

Figure 26: Percent crashes on wet or dry roads by injury level and age group and sex of drivers of passenger vehicles involved in Australian crashes during 2005-2009

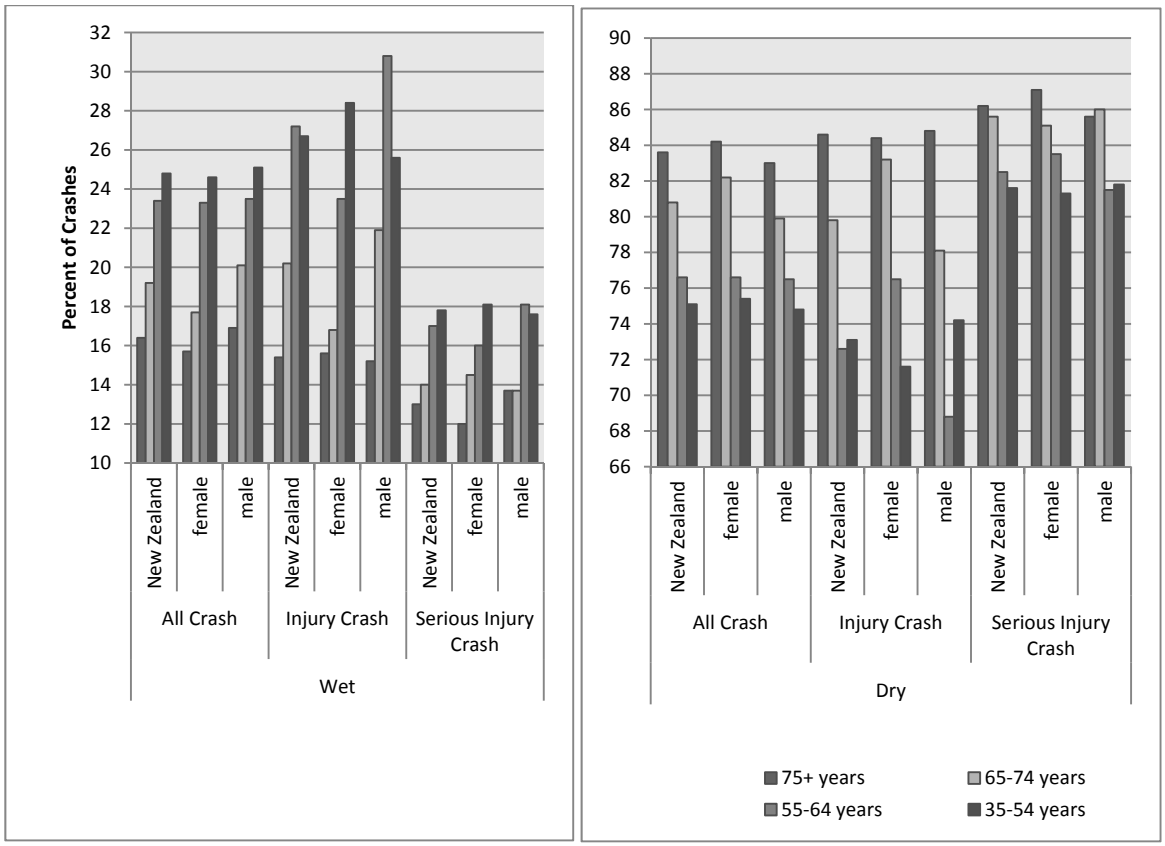

Figure 27: Percent crashes on wet or dry roads by injury level and age group and sex of drivers of passenger vehicles involved in New Zealand crashes during 2005-2009

4.2 URBANISATION OF CRASH

4.2.1 Metropolitan or Rural Roads: Combined Australian states and New Zealand

Figure 28 depicts the age distribution of percent crashes by location, for males and females, for all crashes, injury crashes and serious injury crashes and for Australia and New Zealand.

Older drivers are over-represented in rural crashes in Australia, whereas in New Zealand, the trend for older drivers is reversed, with greater percentages of 75+ drivers than the comparison group involved in metropolitan crashes, and greater differences between older drivers and other drivers in more serious crashes.

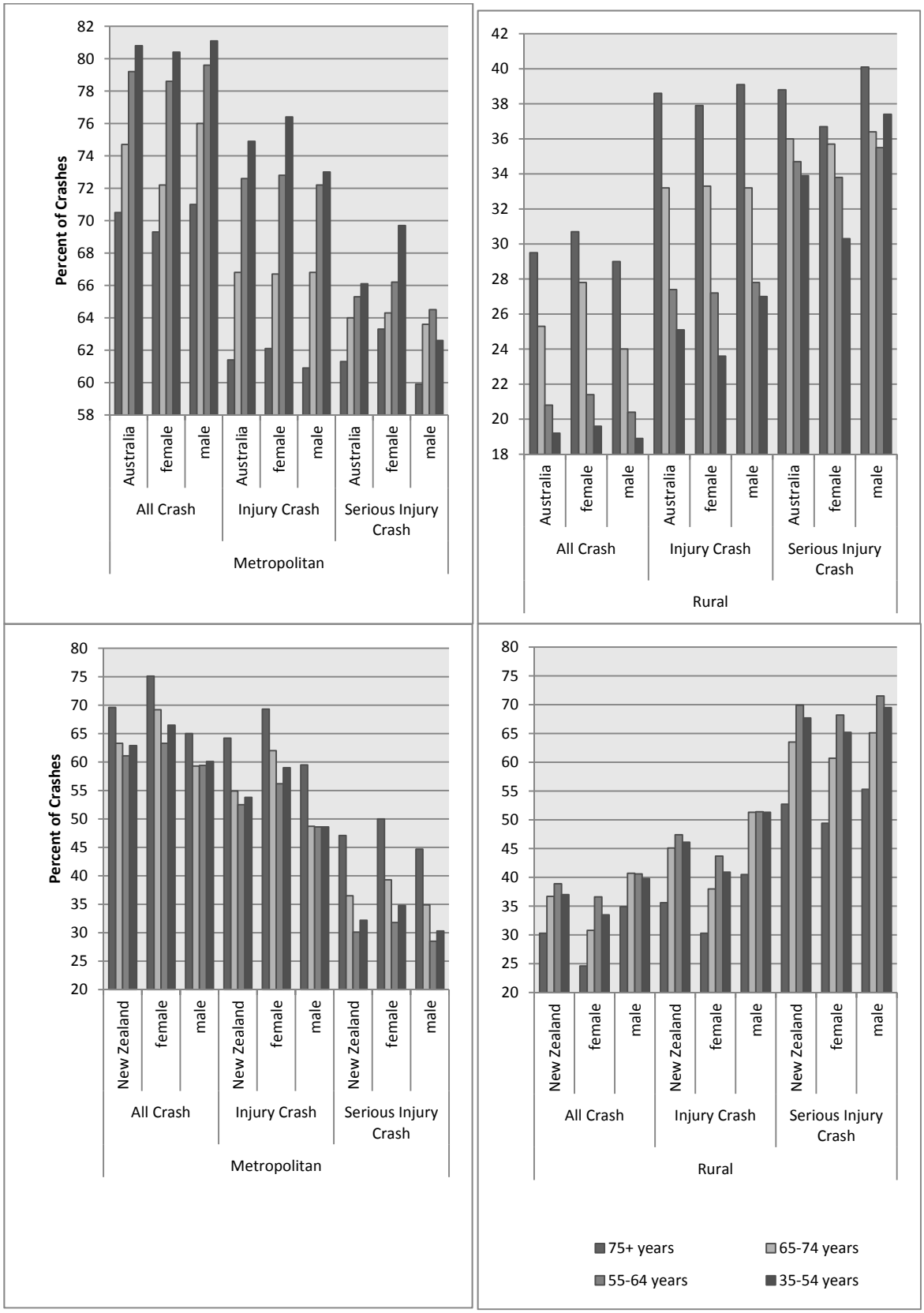

Figure 28: Crash urbanisation across age groups by injury level and sex of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

4.3 SPEED ZONE OF CRASH

4.3.1 Speed Zone of Road: Combined Australian states and New Zealand

Figure 29 depicts the age distribution of percent driver crashes by speed zone, for males and females, for all crashes, injury crashes and serious injury crashes and for Australia and New Zealand.

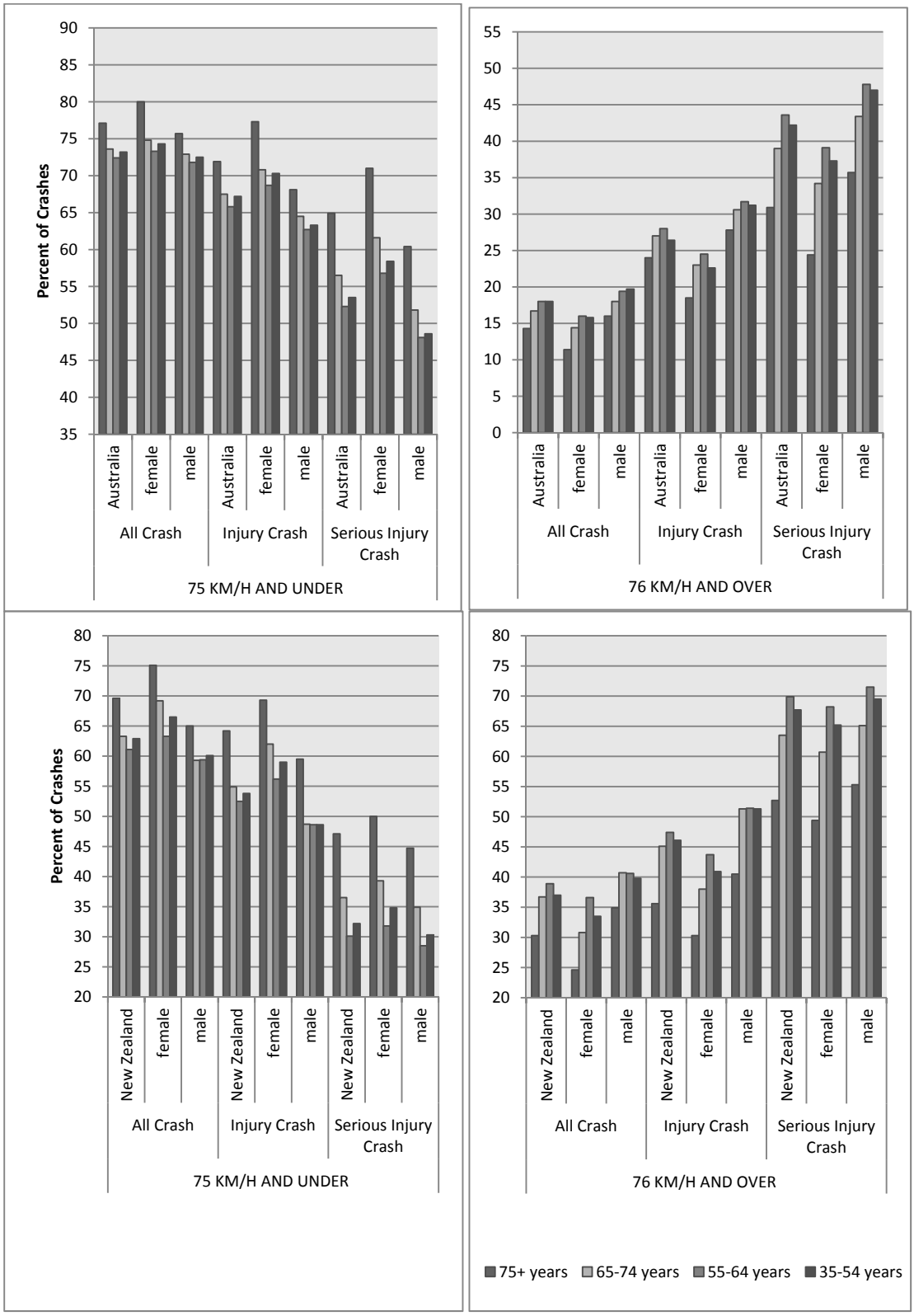

Figure 29: Percent crashes within speed zones across age groups by injury level and sex of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

Older drivers are over-represented in crashes occurring in lower speed zones. The age difference is more pronounced in more serious crashes. In Australia, the difference, in percentage high speed zone crashes, between the comparison and 75+ age groups was about 5 percentage points for all and for injury crashes, and more than double this for serious injury crashes. These trends for high versus low speed zones are consistent with rural versus metropolitan location findings for New Zealand, where location was defined by speed zone.

4.4 ROAD SURFACE AT CRASH

4.4.1 Sealed and Unsealed Roads: Combined Australian states and New Zealand

Figure 30 depicts the age distribution of percent crashes by road surface for driver sex, for all crashes, injury crashes and serious injury crashes and for Australia and New Zealand.

Compared with the 35-54 year age group, older drivers were only slightly over-represented in crashes occurring on sealed roads (less than 1 percentage unit for all and injury crashes), however, only a small percentage of crashes were identified to be on unsealed roads. The age difference is more pronounced in more serious crashes (2 percent units). When considering only crashes on sealed roads by percentage on wet or dry roads (Figure 31), a small increase in the age difference was observed for crashes on sealed dry roads, which decreased with increasing crash severity for both Australia and New Zealand.

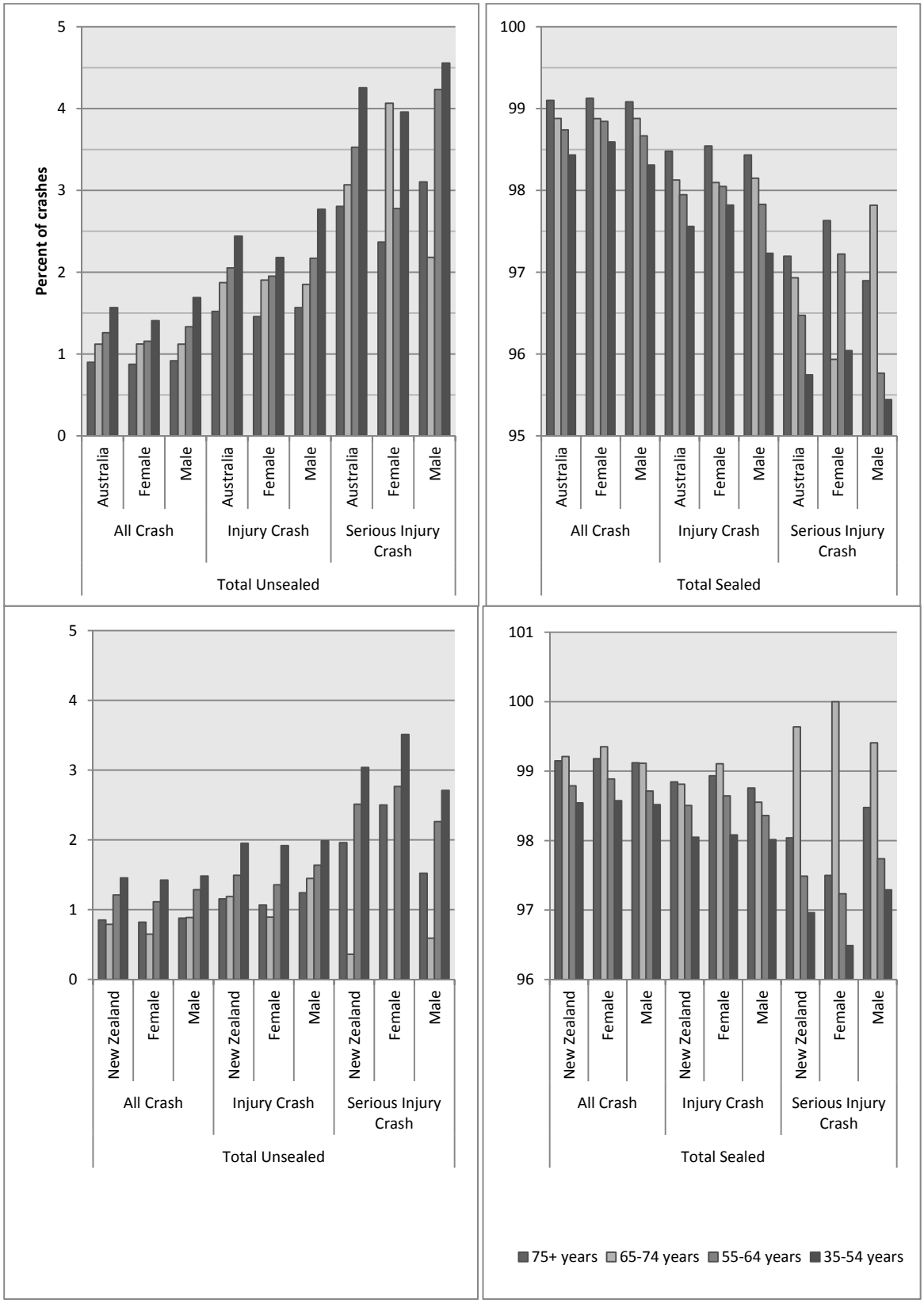

Figure 30: Percent crashes on sealed or unsealed roads across age groups by injury level and sex of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

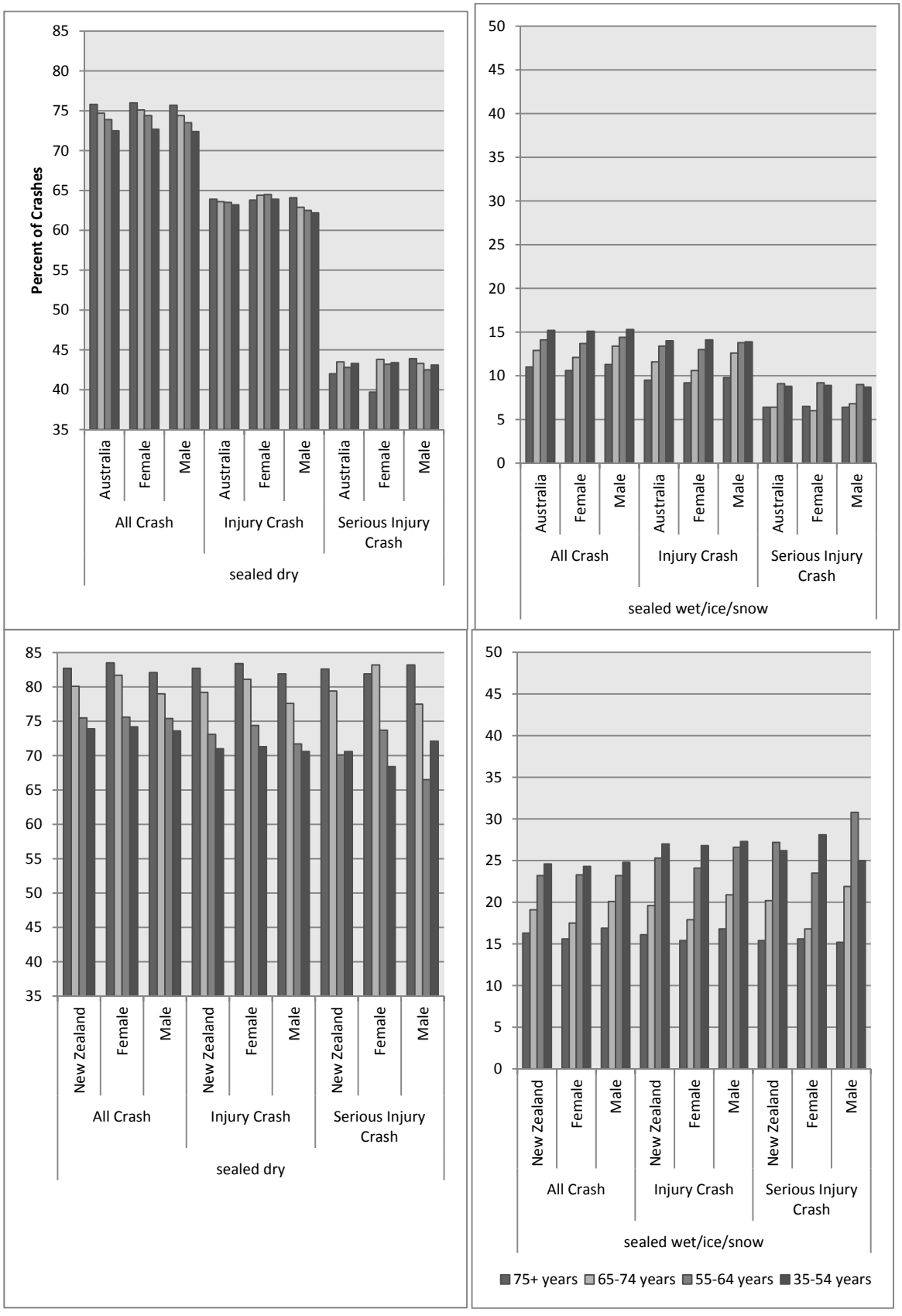

Figure 31: Percent crashes on wet or dry sealed roads across age groups by injury level and sex of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

4.5 ROAD GEOMETRY AT CRASH

4.5.1 Curved or Straight Roads: Combined Australian states and New Zealand

Figure 32 depicts the age distribution of percent crashes by horizontal road alignment for driver sex, for all crashes, injury crashes and serious injury crashes and for Australia and New Zealand.

Compared with the 35-54 year age group, older drivers were over-represented in crashes occurring on straight roads. Both gender and age differences are more pronounced in serious crashes (with the exception of small difference between New Zealand 75+ males and females involved in serious injury crashes on straight roads).

4.5.2 Intersection of Roads: Combined Australian states and New Zealand

Figure 33, Figure 34, Figure 35 and Figure 36 depict the age distribution of percent crashes by intersection status, for all crashes, injury crashes and serious injury crashes, for driver sex and for Australia and New Zealand. Crash locations of known road configuration were classed as intersection, rail crossing and neither intersection nor rail crossing. Only figures for intersections and not an intersection are presented. Intersection and not at intersection crashes, where the presence (or absence) of traffic controls was known, were also categorised into four groups dependent upon their intersection status and the presence of traffic light controls. Graphs of these sub-categories are also presented.

Compared with the 35-54 year age group, older drivers were over-represented in intersection crashes, and in particular crashes at intersections without traffic lights. Percent crashes at intersections and intersections without traffic lights for the comparison age group fell greatly with increasing crash severity causing the age and gender differential to increase with increasing crash severity, such that the difference between percent of serious injury crashes at Australian intersections without lights for 75+ females is 18 percent units more than for male 35-54 year old drivers.

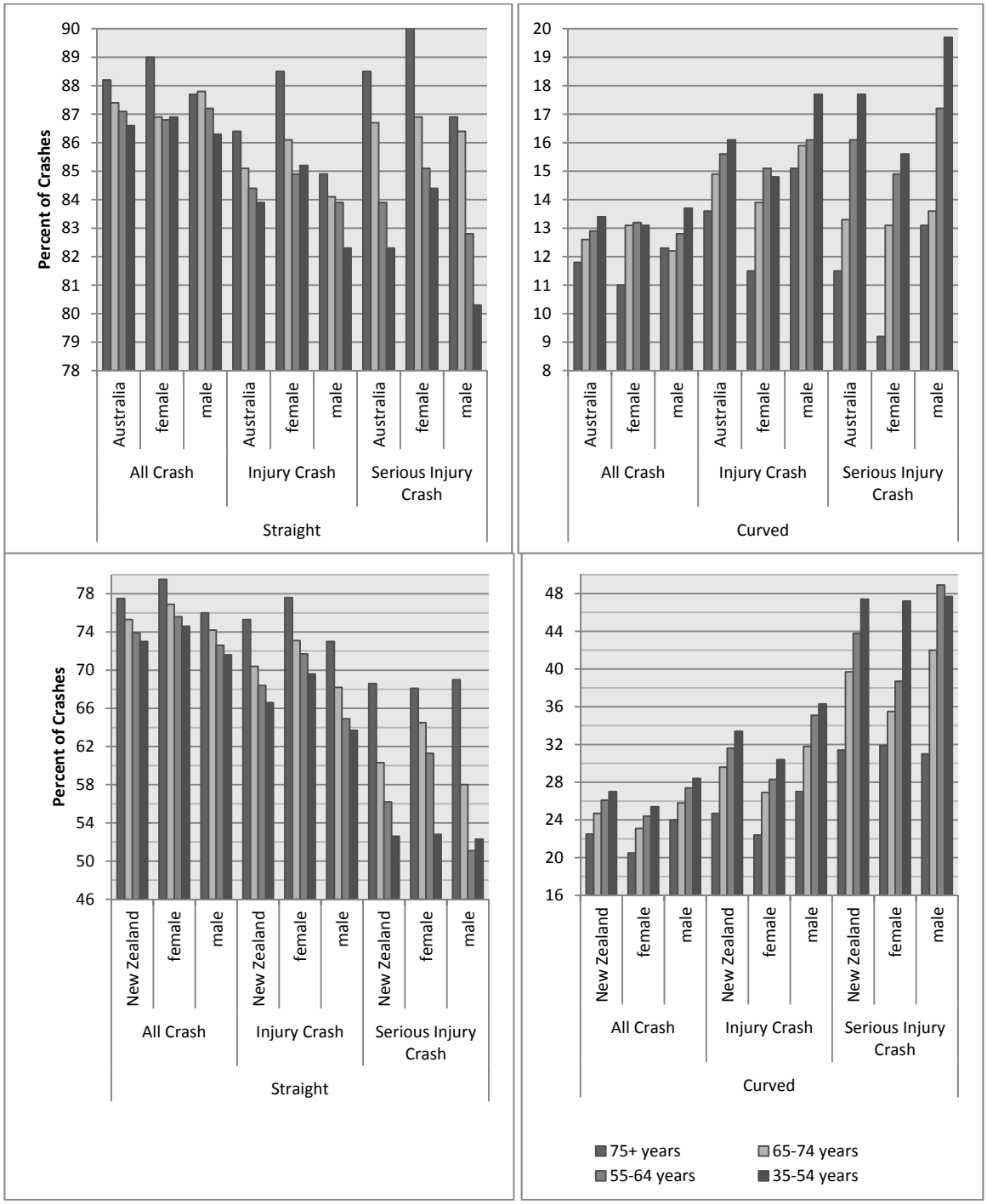

Figure 32: Percent crashes on curved or straight roads across age groups by injury level and sex of drivers of passenger vehicles involved in Australian and New Zealand crashes during 2005-2009

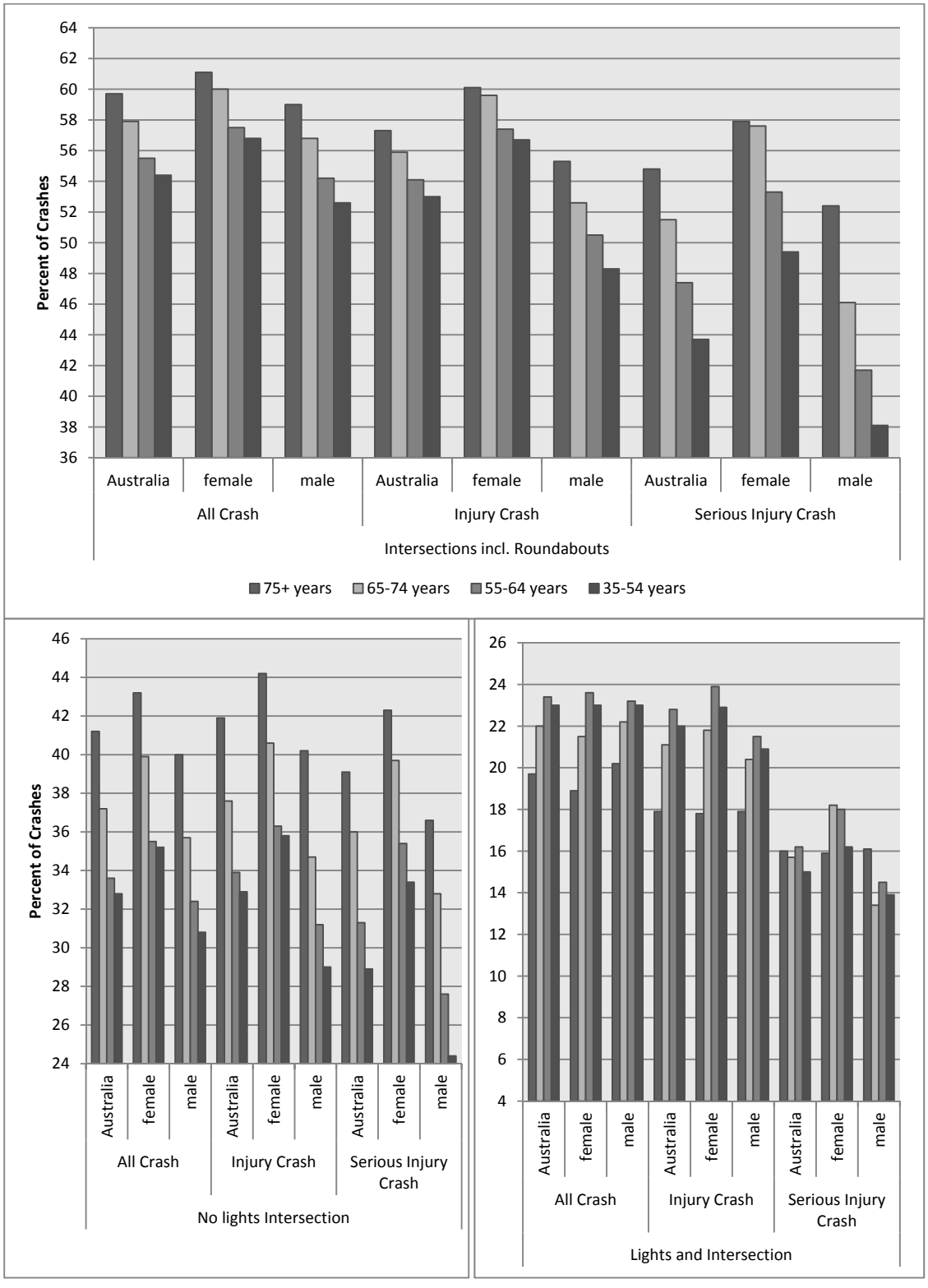

Figure 33: Percent crashes at intersections and at intersections with and without traffic light controls across age groups by injury level and sex of drivers of passenger vehicles involved in Australian crashes during 2005-2009

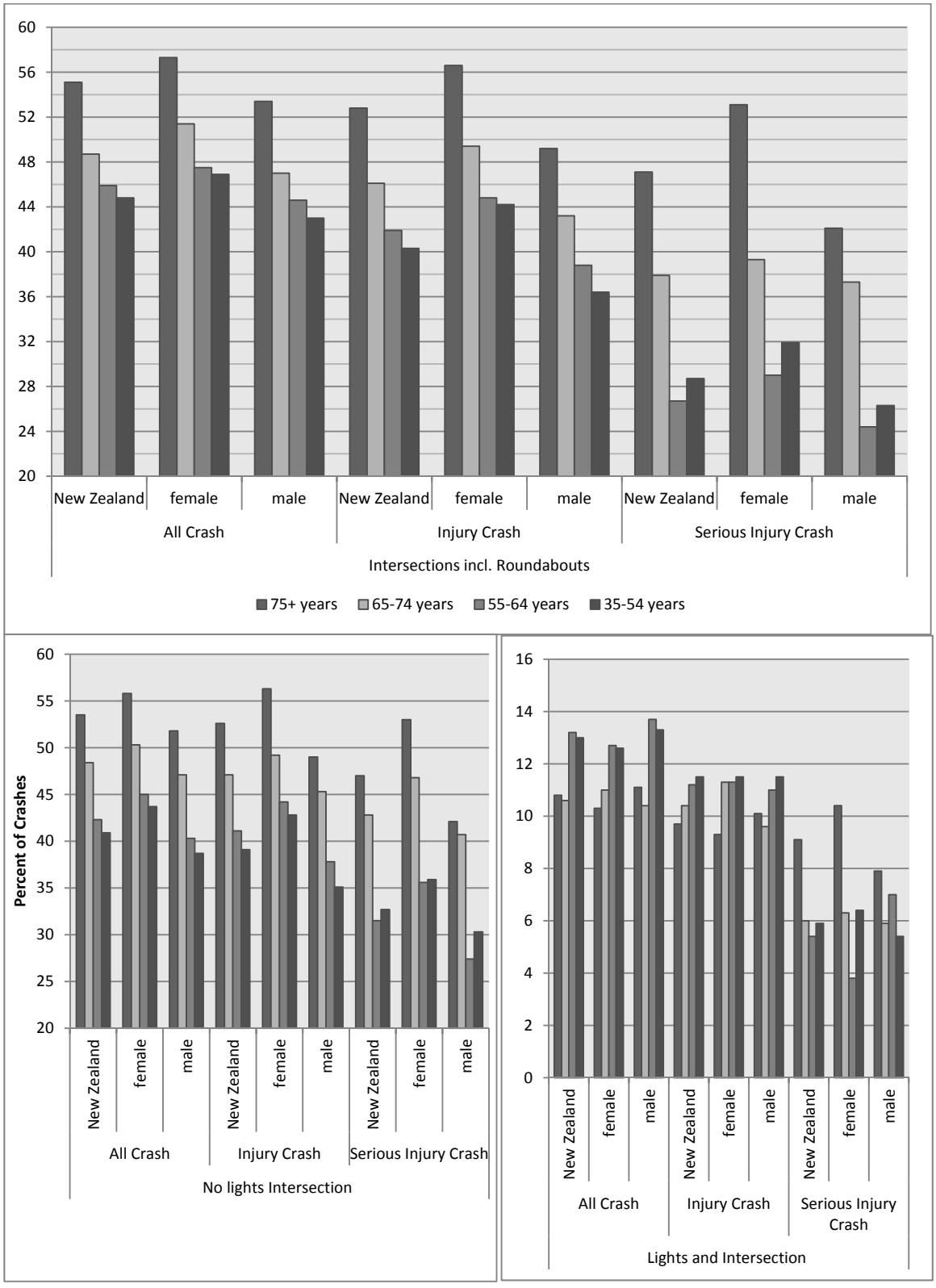

Figure 34: Percent crashes at intersections and at intersections with and without traffic light controls across age groups by injury level and sex of drivers of passenger vehicles involved in New Zealand crashes during 2005-2009

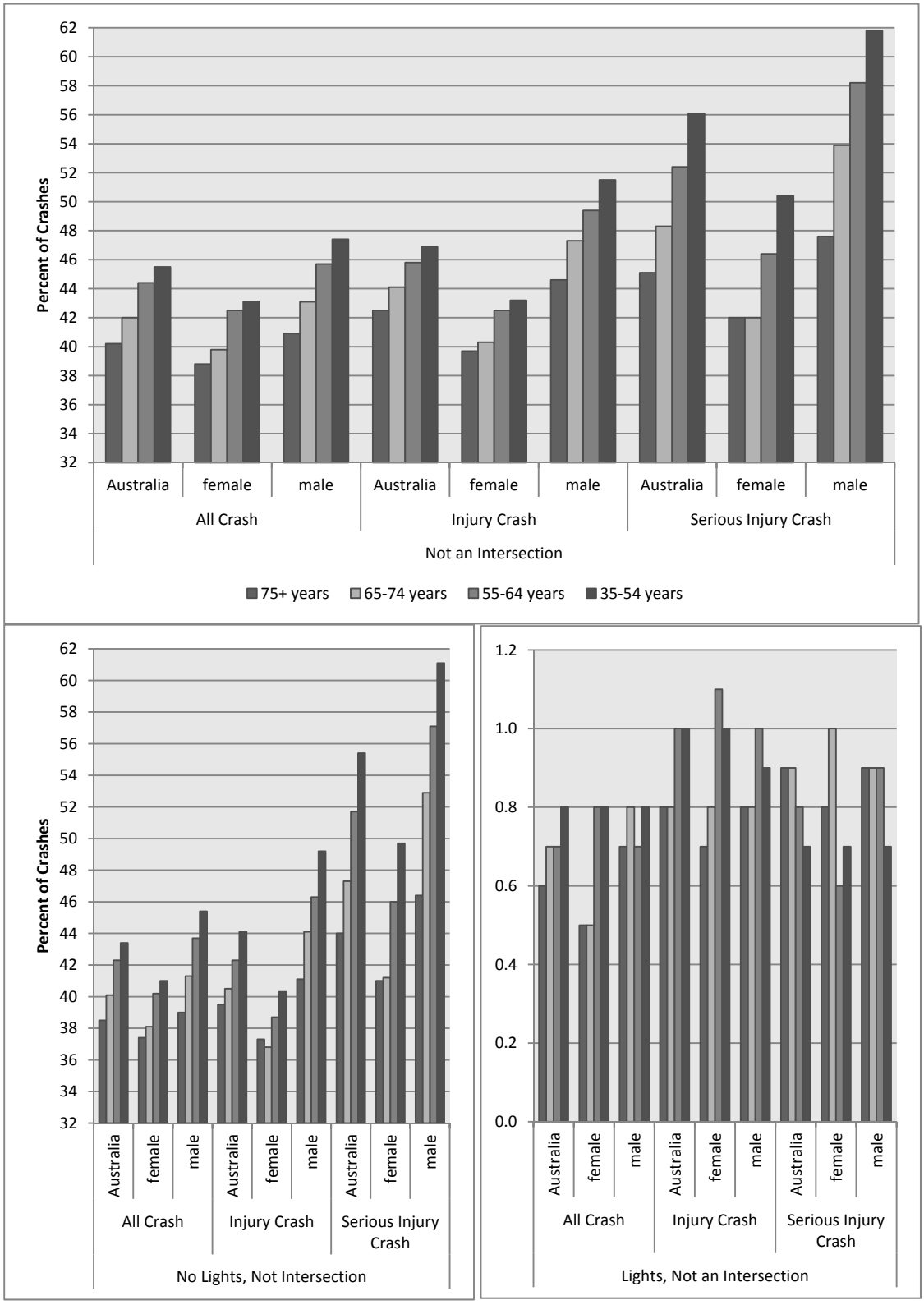

Figure 35: Percent crashes not at intersections and not at intersections with and without traffic light controls across age groups by injury level and sex of drivers of passenger vehicles involved in Australian crashes during 2005-2009

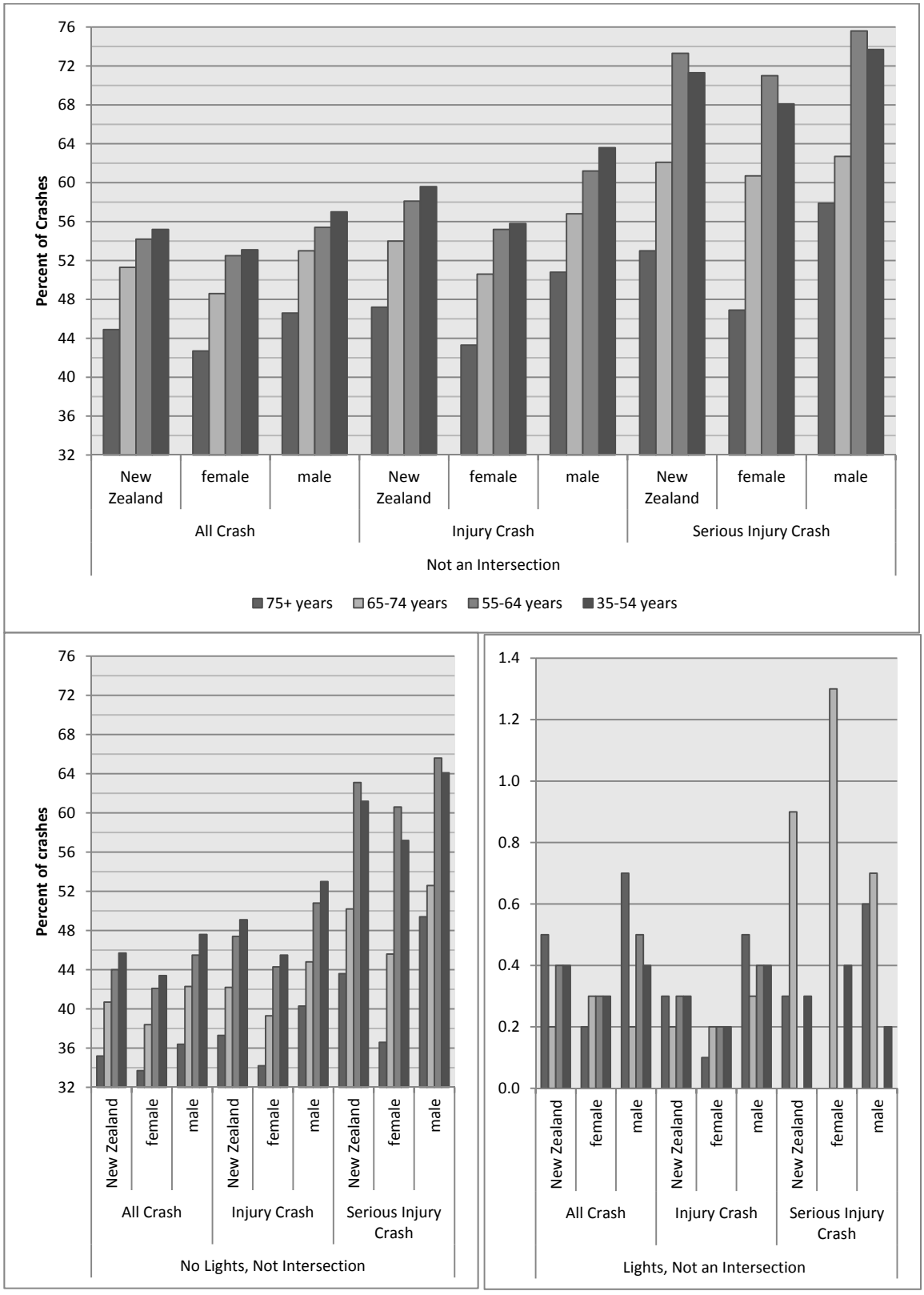

Figure 36: Percent crashes not at intersections and not at intersections with and without traffic light controls across age groups by injury level and sex of drivers of passenger vehicles involved in New Zealand crashes during 2005-2009

Table 7 displays the frequency of injury for older drivers involved in crashes at uncontrolled intersections and roundabouts. Small passenger vehicles represent a far greater amount of injury crashes at uncontrolled intersections for older drivers than any other market group.

Table 7: Counts of injured older drivers by severity and market group for crashes at uncontrolled intersections (including roundabouts) for Australia and New Zealand, from 2005-2009

	Australia		New Zealand	
Market group	**Injured**	**Seriously Injured**	**Injured**	**Seriously Injured**
Small	736	348	293	59
Large	588	210	73	17
Medium	300	140	150	28
Light	230	113	205	45
Utility	78	23	8	3
SUV-compact	67	25	18	2
SUV-medium	26	7	4	0
SUV-large	23	18	1	0
Van	13	7	11	3
People Mover	7	3	13	1

4.5.3 Population Projections: Combined Australian states and New Zealand.

The Australian Bureau of Statistics (ABS) presents 3 population projection models (Australian Bureau of Statistics 2008) based on the 2006 Census population. Statistics New Zealand presents 9 different population projection models (Statistics New Zealand 2007) based on 2006 population levels. Each of these projects a greater future proportion of people aged 65 and over.

By using the available 2009 New Zealand data for car licensing (New Zealand Ministry of Transport 2009), the proportion of licensed population overall, and for older drivers may be determined. For Australia, licence information for 65+ age group and passenger class was only available for New South Wales. The proportion of Australians with car licences was estimated with the New South Wales figure. Partial information for 2006 and 2009 was gathered for Queensland and Western Australia (Appendix Table 140). Percentages of all driving licences within the respective state populations compared favourably with that of NSW.

The percentage of car licensed populations by class and year was assumed to remain constant across future years, so that the future licensed population might be estimated. The future licensed population may then be used as an estimate of the future driving population. Projections of older driver populations for 2056 and 2101 are presented in Table 8.

Table 8: Population projections for 2056 and 2101 for Australians and New Zealanders 65 and over

	Percent of Population			Population in millions				
	NZ 65+	AUS 65+	AUS 85+	**NZ 65+**	**AUS 65+**	AUS 85+	**NZ All**	**AUS All**
2006	12	13	1.6	0.512	2.64	0.042	4.185	19.86
2056	24-26	23-25	4.9-7.3	1.24-1.56	7.11-10.6	1.51-3.10	4.73-6.39	30.9-42.5
2101		25-28	5.8-9.3		8.43-17.4	1.95-5.78		33.7-62.2

The population aged 65 and over in New Zealand and Australia is growing at a greater rate than that of younger people (Table 9). By 2056, the percentage that older drivers represent in the driving population could double from 2009 proportions (Table 9).

Table 9: Percentage of Australians and New Zealanders 65 and over in possession of a car licence and projected licence holders in 2056 and 2101

	New Zealand		**Australia**	
	65+	All Ages	65+	All Ages
2009 Licence and population data (in millions)				
Passenger Vehicle Licences †	0.421 172	3.225 524		
Population ‡	0.553	4.316		
Percentage of Population Licensed (Car)	76	75	57*	60*
Projected population licensed (Car) in millions				
2056	0.94-1.19	3.55-4.79	2.34-6.04	18.54-25.50
2101			4.81-9.92	20.22-37.32
% older drivers of all car licensed drivers				
2009	13			13*
2056	25-27			12-24
2101				24-27

† (New Zealand Ministry of Transport 2009) ‡ New Zealand 2009 data(Statistics New Zealand 2009)
*From NSW data as presented in Appendix Table A.106

4.6 ROAD USER INVOLVEMENT

4.6.1 Combined Australian states and New Zealand

Figure 37 and Figure 38 depict the percentage of crashes by driver age grouping for all crashes, injury crashes and serious injury crashes for driver sexes and for Australia and New Zealand.

Compared with the 35-54 year age group, percentages of all single vehicle crashes for older drivers were marginally more; however they were about 5-10 percentage units lower in serious injury single vehicle crashes. Compared with the 35-54 year age group, percentage of all multiple vehicle crashes for older drivers were marginally less, but about 5-10 percentage units more in serious injury multiple vehicle crashes.

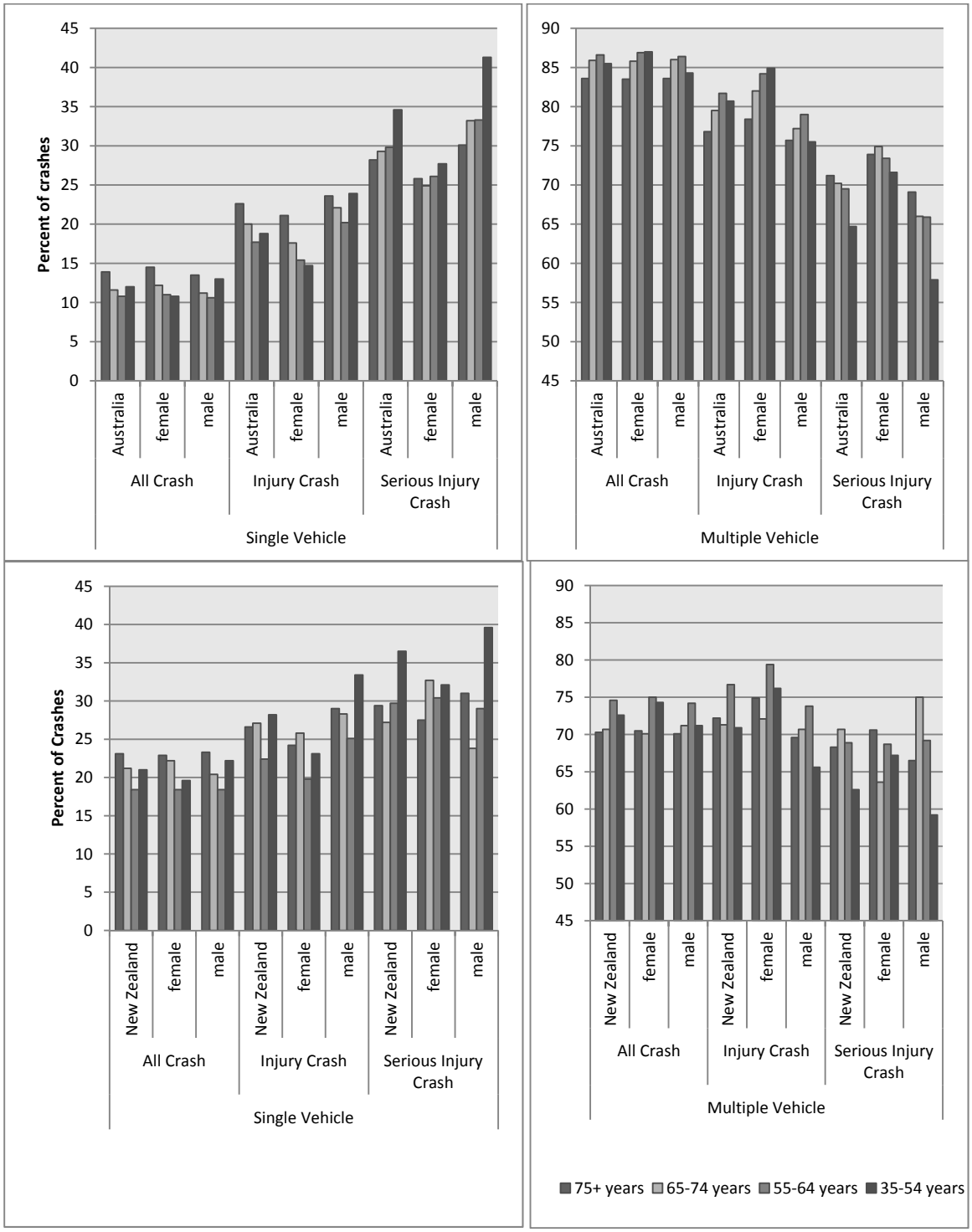

Figure 37: Percent crashes by road user involvement for single and multiple vehicle crashes in Australia and New Zealand by injury level and age and sex of drivers during 2005-2009

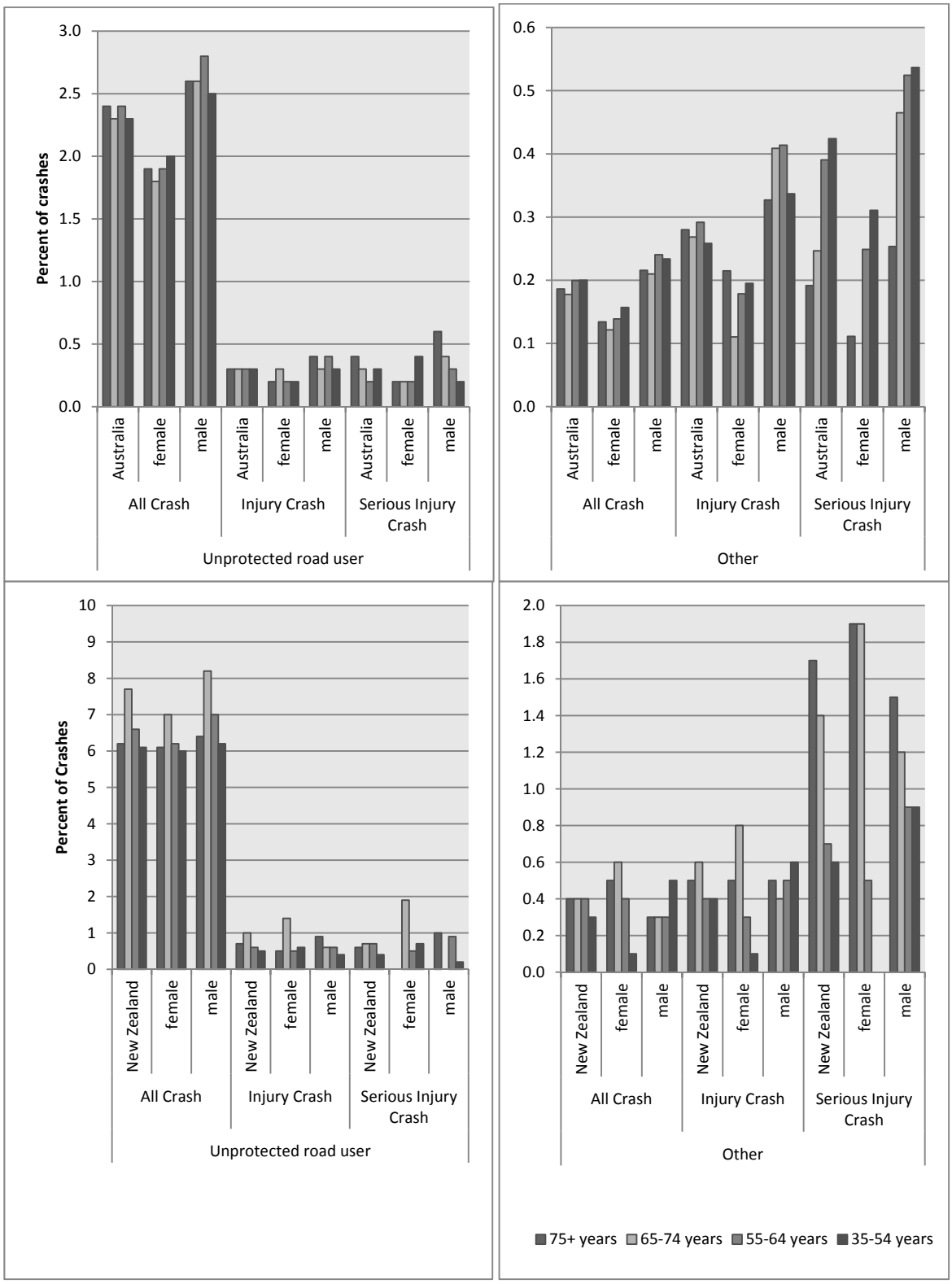

Figure 38: Percent crashes by road user involvement for unprotected road user and other crashes in Australia and New Zealand by injury level and age and sex of drivers during 2005-2009

4.7 CRASH IMPACT LOCATION

4.7.1 Head on crashes

Figure 39 depicts the percentage of head-on crashes by age grouping for all crashes, injury crashes and serious injury crashes for driver sex and for Australia and New Zealand.

Compared with the 35-54 year age group, percentages of head-on crashes for older drivers were less. Gender and age differentials increased with crash severity.

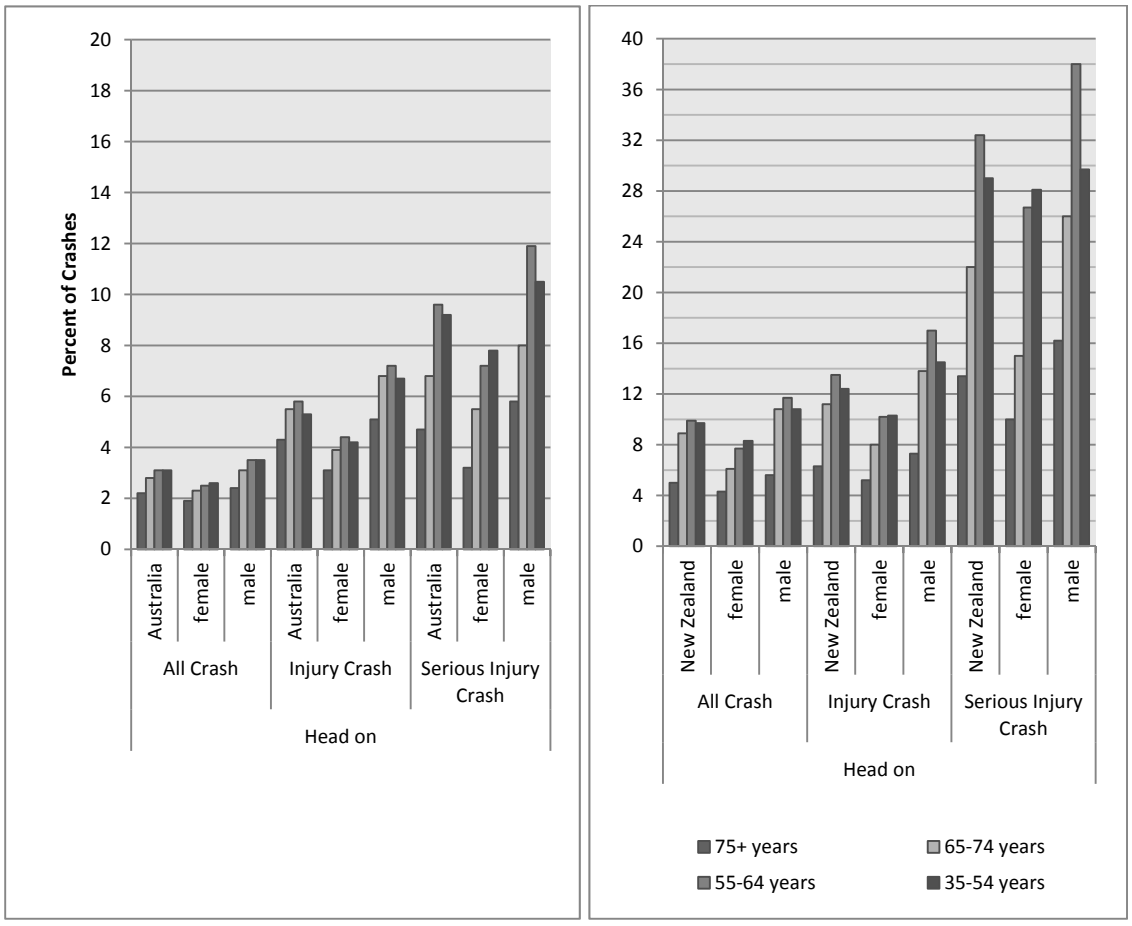

Figure 39: Percent head on crashes in Australia and New Zealand by injury level and age and sex of drivers during 2005-2009

4.7.2 Rear-end crashes

Figure 40 depicts the percentage of rear-end crashes by age grouping for all crashes, injury crashes and serious injury crashes for both sexes and for Australia and New Zealand.

Compared with the 35-54 year age group, percentages of rear-end crashes for older drivers were less, with the exception of slightly higher percentages for New Zealand 65-74 year olds involved in serious driver injury crashes. Gender and age differentials were lowest for serious injury crashes.

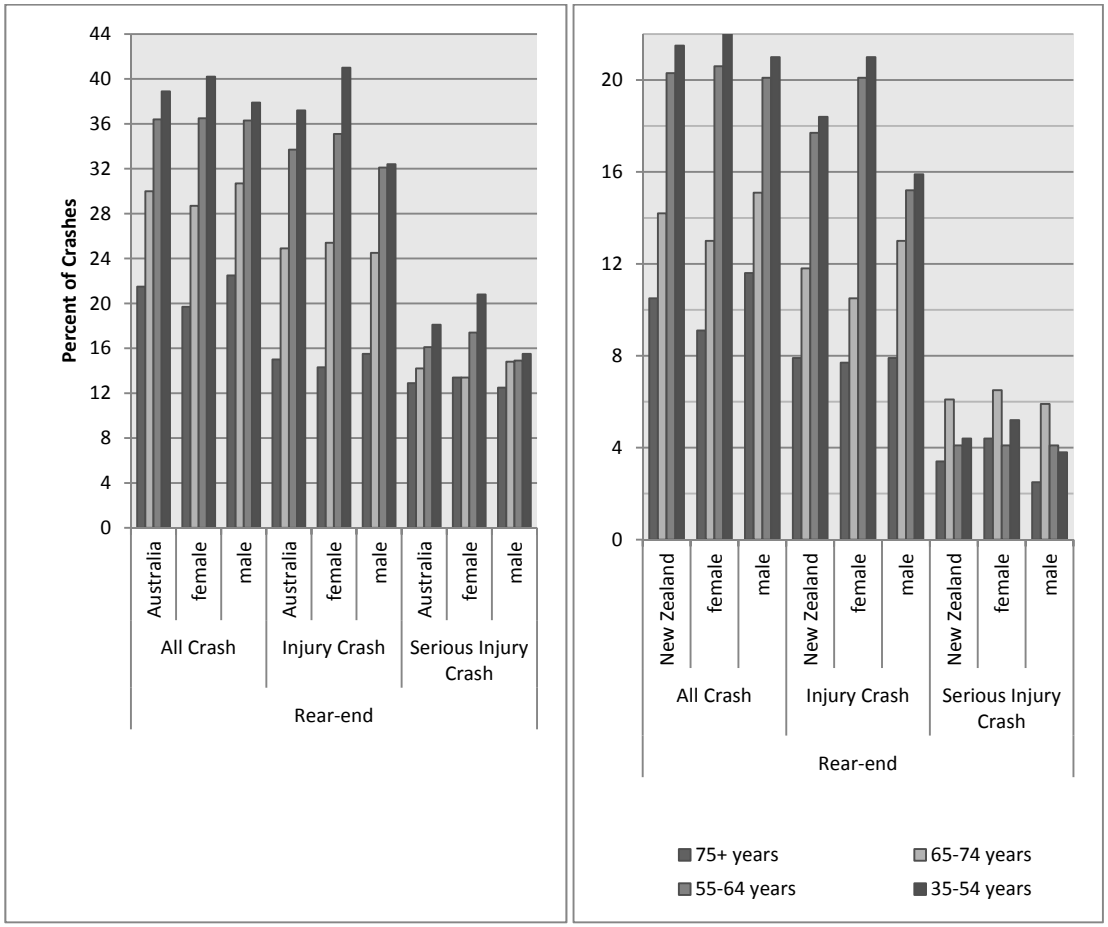

Figure 40: Percent rear-end crashes in Australia and New Zealand by injury level and age and sex of drivers during 2005-2009

4.7.3 Collisions with objects and parked vehicles

Figure 41 depicts the percentage of 'hit object' and 'hit parked vehicle' crashes by age grouping for all crashes, injury crashes and serious injury crashes for driver sex and for Australia and New Zealand (New Zealand data combines hit object and hit parked vehicles into a single count).

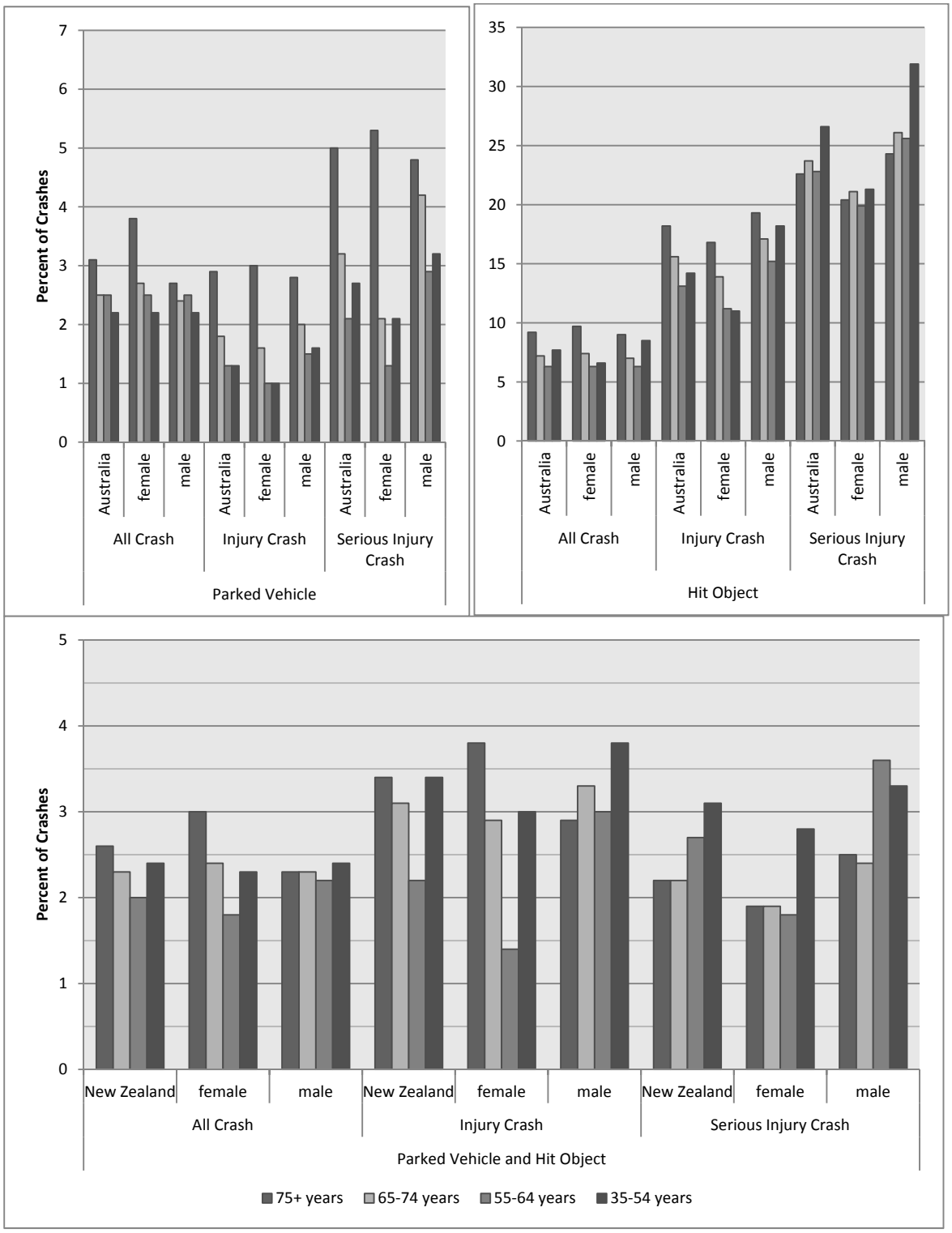

Figure 41: Percent hit object and hit parked vehicle crashes in Australia and New Zealand by injury level and age and sex of drivers during 2005-2009

Compared with the 35-54 year age group, percentages of all 'hit object' and 'hit parked vehicle' crashes for drivers 75 and over were higher. When looking only and serious driver injury crashes for 'hit object' and New Zealand data, older driver percentages were not higher than those of the comparison group. When looking only and injury crashes for 'hit object' and New Zealand 'hit object' and hit parked vehicle' data, older driver percentages were higher than those of the comparison group, for females aged 75 year or over, Australian males 75 year or over and Australian females 65-74.

Crashes with parked vehicles only represented a small percentage of Australian crashes, however older drivers were consistently over-represented for all crashes, injury crashes and serious injury crashes.

4.7.4 Rollover crashes

Figure 42 depicts the percentage of rollover crashes by age grouping for all crashes, injury crashes and serious injury crashes for both sexes and for Australia and New Zealand.

Compared with the 35-54 year age group, percentages of rollover crashes for older drivers were less. Gender and age differentials increased with severity of crash.

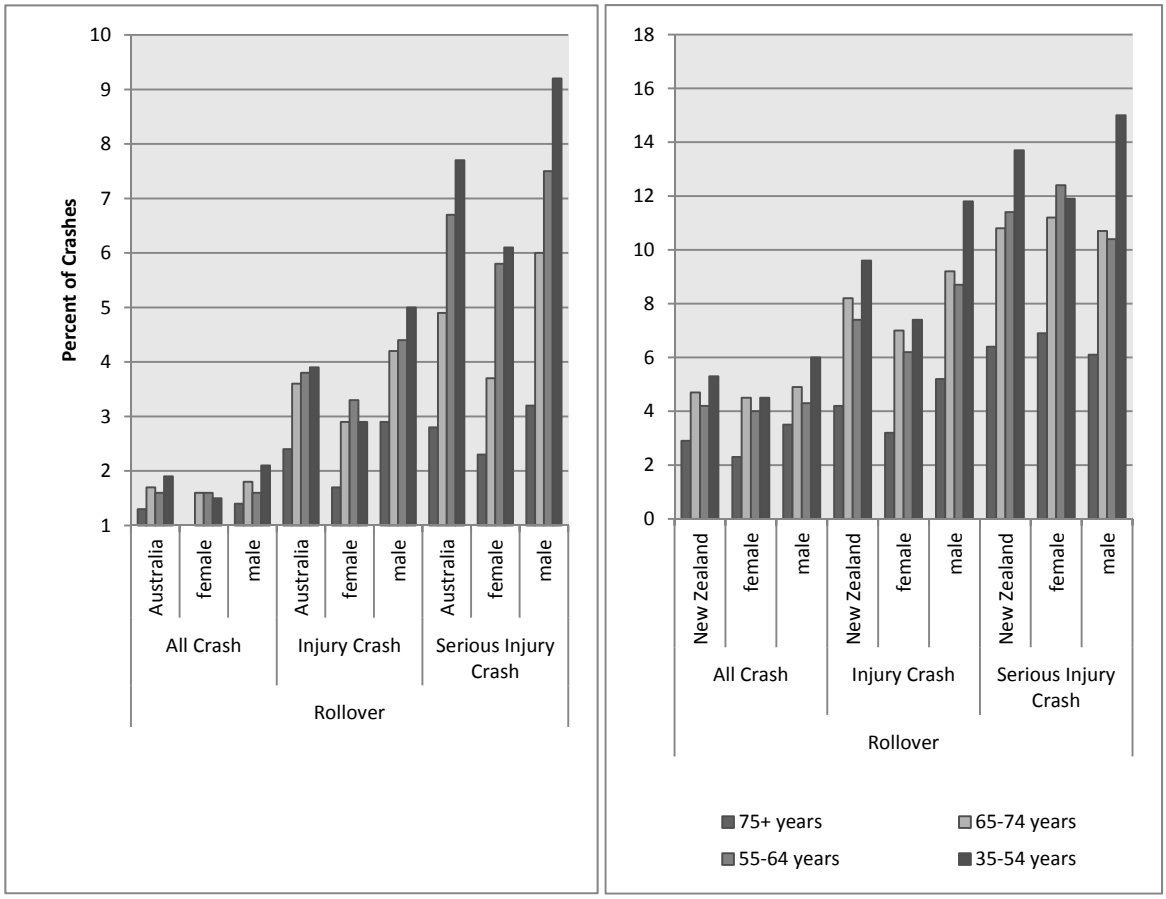

Figure 42: Percent roll-over crashes in Australia and New Zealand by injury level and age and sex of drivers during 2005-2009

5.0 STAGE 3: VEHICLE CHOICE OPTIMISATION

5.1 BACKGROUND

Crash outcomes for older drivers would generally be improved by:

(i) avoiding collisions e.g. through use of emerging technology, self regulation and better driver behaviour.

(ii) lessening the injury severity of a collision e.g. by reducing impact velocity, by protecting the driver with airbags and by choosing more crashworthy vehicles.

(iii) reducing the chance that injuries result in fatalities, e.g. by improved medical treatment and response.

The following section addresses the first and second methods to improve crash outcomes of older drivers, through quantifying the effects of alternate vehicle and emerging vehicle safety technology choices. This is done by developing scenarios that are based upon the key findings within Chapters 3.0 and 4.0 of which are summarised below. Table 10 summarises the vehicle preferences of older drivers, Table 11 summarises crashes in which older drivers were over-represented, and Table 12 summarises crashes in which older drivers were not over-represented.

Table 10: Summary of findings of older driver crashed vehicle profile

	Australia	New Zealand
Most frequent vehicle age group	6-10 years	6-10 and 11-15 years
Average vehicle age at purchase	4.2 (Victoria only)	
Average vehicle age at crash	10.3 (Victoria only	
Vehicle age groups over represented in older drivers	16 +, 11-15	16+
Most frequent older driver vehicle market group	Small	Small
Vehicle market groups over represented in older drivers	Light , Small, Medium	Light, Small
CWR compared with vehicles of 35-54 aged drivers	higher	higher
AGG compared with vehicles of 35-54 aged drivers	lower	lower
TSR compared with vehicles of 35-54 aged drivers	higher	higher
Most popular model - 75+	Toyota Camry, 98 on, CWR =3.20	Toyota Corolla 94-98 / Nova 95 on , CWR=4.34
65-74	Ford Falcon EF/EL, CWR =3.40	Toyota Corolla 120 Series (02-07), CWR=3.37
Most popular small model- 75+	Toyota Corolla 94-98 / Nova 95 on	Toyota Corolla 94-98 / Nova 95 on
65-74	Toyota Corolla 120 Series (02-07)	Toyota Corolla 120 Series (02-07)
most crashworthy popular model- 75+	Holden Commodore VT/VX (97-02), CWR=3.17	Ford Mondeo (95-01), CWR=2.97
65-74	Ford Falcon BA (02-08), CWR=2.47	Ford Mondeo (95-01)), CWR=2.97
Most popular crashworthy small model driven by older drivers	Holden Astra TS (98-06), CWR=3.09	Toyota Corolla (98-00), CWR=3.13

Table 11: Summary of findings- crash types in which older drivers were over-represented

	Injury Crashes	Serious Injury Crashes	Australian Rural Roads	Single vehicle	Hit Object-Australia-75+	Hit Parked Vehicle - Aus 75+	on dry roads NZ	on roads zoned up to 75 km/hr	On Straight Roads-Aus	On Straight Roads-NZ	Week day, daytime	Intersections	Uncontrolled Intersections-AUS	Uncontrolled Intersections-NZ	on dry roads-Aus	Multi-vehicle	On Sealed Roads	on Sealed Dry roads	Hit Parked vehicle-Australia-<75	Hit Object and Parked Vehicle- NZ-75+
Crash types that are generally over-represented in more severe injury crashes			x	x	x	x	x													
Crash types in which females are over-represented	x	x						x	x	x	x	x	x	x						
Crash types in which males are over-represented			x	x																
Crash types in which older drivers are over-represented	**x**	**x**	**x**	*****	*****	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**#**	**x**	**x**	**x**	*****
Crash types where vehicle age significantly contributed to older driver injury severity								‡	‡					‡		x				
Crash types where vehicle market group significantly contributed to driver injury severity													**x**							

* Only for crashes where driver injury was not serious. # Only for crashes where driver injury was serious. ‡ Only for crashes in metropolitan locations

Table 12: Summary of findings- crash types in which older drivers were not over-represented

	Head-on	on roads zoned 76 km/hr+	Rollover	On Curved Roads- aged under 75	At Night Time- aged under 75	Not at intersection	On unsealed roads	Hit Object-Australia-<75	Metropolitan roads	Rear-end	On Curved Roads	Night time	Hit Object and Parked Vehicle- NZ-<75	on wet roads
Crash types that are generally over-represented in more severe injury crashes	x	x	x	x	x	x	x	x						
Crash types in which females over-represent									x	x				
Crash types in which males over-represent	x	x	x	x	x						x	x		
Crash types where vehicle age significantly contributed to older driver injury severity	*								**x**	*‡				

*Only for Australian crashes. ‡Only for crashes in metropolitan locations.

5.2 VEHICLE CHOICE OPTIMISATION SCENARIOS

Four scenarios were considered for optimising older driver vehicle choice. The first three examine vehicle choice as a method to improve crash outcomes. If older drivers drove vehicles with better crashworthiness ratings, then their risk of serious injury would be reduced. The effect of substituting vehicles with better crashworthiness for actual data vehicles is measured by reduction in serious injury and fatal crashes.

The first scenario presents the best case vehicle choice, whereby the vehicles with the best possible crashworthiness ratings are chosen by the older driver. Since it is not usually practical or affordable for older drivers to drive People Movers, the most crashworthy vehicle for years of manufacture 1982-2009, four alternatives for the 'best-case' scenarios are offered: the first is where the most crashworthy vehicle that is neither a People Mover, nor a Van is chosen, the second is where the most crashworthy popular (amongst older drivers) vehicle is chosen, the third is where the average crashworthiness rating across the top ten ranking vehicles was used and fourth is where the average across the top ten does not include People Movers or Vans.

The second scenario recognises that many older drivers make a decision in early retirement to purchase a vehicle that will last them until they cease driving. That is, this scenario considers that instead of the vehicle that the older driver chose when they made the decision to purchase their last vehicle, they instead chose a vehicle with the best crashworthiness, within the same market group and year of manufacture. In addition, this scenario considers using the choice of the most crashworthy for year of manufacture regardless of market group, to address the issue that older drivers were found not only to choose vehicles of poor crashworthiness within a market group, but also vehicles from market groups associated with poorer crashworthiness (e.g. Light vehicles).

The third scenario looks considers the possible improvements in safety outcomes associated with choosing the current most crashworthy vehicle within a market group. This scenario considers how current decisions in vehicle choice will affect future safety. It recognises that many older drivers will choose vehicles from market groups associated with poor crashworthiness (e.g. Light vehicle market group), so the scenario considers the effect of choosing a vehicle with the lowest crashworthiness rating within older driver's preferred market group. Because some older drivers are on limited incomes, the scenario offers an alternative to the choosing the most crashworthy within a market group, whereby the most crashworthy of the most popular vehicles amongst older drivers are chosen. To recognise that older drivers are reluctant to replace their 'retirement' vehicle purchase, vehicles were limited to popular models manufactured in 2000 and beyond, enabling them to benefit from more modern standard safety features found in these models.

A fourth scenario was considered to target specific crash types over-represented in older drivers and to address the outcome of drivers who crash Light vehicles. This significant market group represents 13% of New Zealand and about 7% of Australian older driver vehicles. No Light commercial vehicle manufactured between 1982 and 2009 possessed a significantly greater CWR than the all model weighted average CWR of 3.57%, so the market group optimisation of Scenario 3 offered no vehicle optimisation for Light vehicles. Emerging vehicle technologies improve crash outcomes for drivers by prevention of crashes and by reduction in injury severity. In this scenario, the emerging vehicle safety technology of forward collision warning with automatic braking is used. This technology targets crashes with objects on path specifically but can generally improve intersection crash outcomes by collision avoidance and reduced braking distance. This was considered appropriate for vehicle optimisation for older drivers because older drivers were over represented in intersection and uncontrolled intersection crashes, hit

object crashes and serious injury multi-vehicle collisions. Expected Australian crash reductions for forward warning systems alone were unavailable. Expected Australian crash reductions for forward warning systems using adaptive cruise control braking were available but considered inappropriate for a scenario considering that older drivers were not over-represented in crashes in high speed zones and that these systems are most effective in high speed zones. Also the low speed versions of these systems, which operate at speeds less than 30 km/hr, are not effective at preventing collisions with stationary objects. Older drivers were over-represented in these types of collisions (low speed, single vehicle collisions where the driver was not seriously injured and in hit-object collisions).

Scenario 1 will estimate the reduction in crashes if all older drivers were driving:

a) A vehicle with the best crashworthiness rating.

b) A vehicle with the best crashworthiness rating that is neither a Van nor a People Mover.

c) A vehicle with the best crashworthiness rating is chosen that is ranked within the 10 most popular vehicles for older drivers from each country, with a 2000 or greater year of manufacture.

d) A vehicle from the ten most crashworthy vehicles (The average crashworthiness rating for the top 10 vehicles manufactured between 2000 and 2009 is used).

e) A vehicle from the ten most crashworthy vehicles where vans and people movers are excluded (The average crashworthiness rating for the top 10 vehicles manufactured between 2000 and 2009 is used).

Within this scenario, the model was not included in the top 10 models if the 90% confidence intervals for the CWR of the model included the weighted average for all models (3.57).

Scenario 2 will estimate the reduction in crashes if the vehicle the older driver was driving:

a) A vehicle from the same year of manufacture and market group with the best crashworthiness rating.

b) A vehicle from the same year of manufacture, from any market group, with the best crashworthiness rating.

Within this scenario, a substitution was not made if the 90% confidence intervals for the CWR of the model with the best CWR within the same year of manufacture or within the same year of manufacture and market group included the weighted average for all models (3.57). In these cases the original CWR was used in the scenario calculations.

Scenario 3 will estimate the reduction in crashes if the vehicle the older driver was driving:

a) A vehicle from the same market group, with the best crashworthiness rating.

b) A vehicle from at least a 2000 year of manufacture, but the same market group, with the best crashworthy rating from the 10 most popular vehicles that older drivers drive from that market group which have better than average CWR and at least 2% market share.

Within this scenario, a substitution was not made if the 90% confidence intervals for the CWR of the model with the best CWR within the same market group included the weighted average for all models (3.57). Where a substitution could not be made, the original CWR was used in the scenario calculations. A minimum year of manufacture of the year 2000 was chosen to reflect

the fact that this scenario is examining optimisation of current choices. For all but one market group within New Zealand, the most crashworthy popular model in each market group was manufactured in the year 2000 or beyond. All of the Scenario 3a models were manufactured in 2008 or 2009.

Scenario 4 will estimate the reduction in crashes if the vehicle the older driver was driving had a forward collision warning system with automatic braking across all speeds.

5.3 METHODOLOGY USED TO EVALUATE SCENARIOS

5.3.1 Notation

Explanation of the notation used to explain the methodology is as follows:

$\hat{S}_i$ the expected number of older drivers of age group *i* who would be killed or seriously injured in the period 2005-2009 given older drivers purchased vehicles according to the vehicle choice options specified by Scenarios 1 or 2.

S_i the observed number of older drivers of age group *i* who were actually killed or seriously injured in the period 2005-2009 given older drivers purchased vehicles according to the vehicle choice options specified by Scenarios 1 or 2.

$CWR_{i,0}$ the average crashworthiness of vehicles actually driven by older drivers of age group *i*

$CWR_{i,j}$ the average crashworthiness of vehicles driven by older drivers of age group *i* under vehicle choice scenario *j*.

5.3.2 Equations

The expected number of older drivers of age group *i* seriously injured or killed in the period 2005-2009 if they chose a vehicle according to the conditions of scenario *j* can then be estimated using the relationship:

$$\hat{S}_i = S_i \times \left(CWR_{i,j} \div CWR_{i,0}\right) \qquad \text{(Equation 1)}$$

This method of estimating the effect of alternative vehicle choice scenarios on the number of seriously injured or killed older drivers is similar to a method used by Whelan, Scully & Newstead (2009) in the vehicle choice optimization study of younger drivers.

5.3.3 Method Summary

The method involved the measurement of the benefit produced by a reduction in crashworthiness created from different scenarios. In each case a dataset vehicle's CWR was substituted for older drivers, with a lower CWR defined by a particular scenario. The average CWR by age group was then calculated for each scenario. For each age group, the ratio of the scenario mean CWR to the actual mean CWR was used, according to equation 1, to adjust the actual count of seriously and fatally injured drivers, to produce the estimated of fatally and seriously injured drivers under the scenario. The measured benefit is the savings in injuries and death produced by the scenario.

For each scenario only CWRs which excluded 3.57 (the weighted all model average) from their 90% confidence intervals were eligible for use in substitutions or for use in producing an average for substitution. Where there was no CWR eligible for substitution, the dataset model CWR was used without substitution.

5.4 CRASHWORTHINESS RATINGS USED IN SCENARIO CALCULATIONS

Average Crashworthiness for vehicles manufactured between 1982 and 2009: 3.57%

Scenario 1a Vehicle *with the best crashworthiness rating*:
The vehicle with the best crashworthiness rating for 1982-2009 is the Kia Carnival manufactured from 2006-2009, which is categorised as a People Mover vehicle market group and has a crashworthiness rating of 0.48%.

Scenario 1b Vehicle *with the best limited market group crashworthiness rating*
The vehicle with the best crashworthiness rating for 1982-2009, which is not from the People Mover nor Commercial Van market groups is the Mercedes Benz E-Class W211, manufactured from 2002-2009, which is categorised as a 'Large' vehicle market group and has a crashworthiness rating of 0.61%. There is only one record of an older driver crashing this type of vehicle in New Zealand within the Police-reported crash data, and they make up only 0.2% and 0.4% of the Australian vehicles crashed by 75+ and 65-74 year age groups respectively.

Scenario 1c Vehicle *with the best crashworthiness rating that is popular among older drivers*
The most crashworthy vehicle from the top 10 most popular vehicles ranked separately amongst Australian and New Zealand drivers and ranked separately for the 75+ and 65-74 year age groups are listed in Table 8.1. All listed were manufactured in year ranges that included 2000 or beyond. For Australia the vehicles are the Holden Commodore VT/VX (97-02) with a CWR of 3.17% and the Ford Falcon BA (02-08) with a CWR of 2.47%. For New Zealand the Ford Mondeo (95-01) with a CWR of 2.97% was used for both older driver age groups. The most crashworthy popular model for the 65-74 year age group was used for the 75+ age group because although it was not in the top ten for the 75+ year age group, the Ford Mondeo did rank in the top 40 and was the top ranking vehicle with better than average CWR for the age group.

Scenario 1d and 1e *Ten most crashworthy vehicles*
Table 13 displays the crashworthiness ratings with 90% confidence intervals for the top ranked vehicles. Vehicle where the 90% confidence interval for the model CWR included the weighted all model CWR average of 3.57 was not included in the averages. The average CWR for the top 10 vehicles is 0.988% (1d). The average for the top 10 vehicles where people movers and vans are excluded is 1.099% (1e). All of the ranked vehicles were manufactured in the year 2000 or beyond.

Table 13: Crashworthiness ratings for the ten most crashworthy vehicles

Make	Model	Years of Manufacture	Market Group	% CWR (90% CI)
†Kia	*Carnival*	*06-09*	*People Mover*	*0.48 (0.09, 2.50)*
Mercedes Benz	E-Class W211	02-09	Large	0.61 (0.12, 3.14)
*Mazda	CX-7	06-09	SUV - Compact	0.71 (0.14, 3.57)
BMW	X5	01-08	*SUV - Large*	0.86 (0.33, 2.21)
Honda	S2000	99-09	Small	0.90 (0.28, 2.92)
†Honda	*Odyssey*	*04-09*	*People Mover*	*1.07 (0.42, 2.72)*
Jaguar	X-Type	02-09	Medium	1.07 (0.34, 3.45)
Land Rover	Range Rover	95-02	*SUV - Large*	1.20 (0.54, 2.64)
*Toyota	Kluger	07-09	SUV - Medium	1.20 (0.38, 3.79)
Ford	Falcon FG	08-09	Large	1.22 (0.62, 2.42)
Mitsubishi	Triton ML	06-09	Commercial Ute	1.22 (0.61, 2.45)
†Ford	*Transit*	*01-07*	*Commercial Van*	*1.24 (0.80, 1.94)*
Jaguar	S-Type	99-08	Large	1.27 (0.49, 3.27)
BMW	3 Series E90 / E91	05-09	Medium	1.31 (0.58, 2.95)
Mazda	RX8	03-09	Medium	1.33 (0.50, 3.50)
Average-top 10				0.988
Average- top 10 limited market group				1.099

*Not included in top 10. †Not included in limited market top 10.

Scenario 2a: *Most crashworthy Vehicle model for each year of manufacture within each market group and* ***Scenario2b*** *Most crashworthy Vehicle model for each year of manufacture.*

Table 14, Table 15, and Table 16 display the crashworthiness ratings for the most crashworthy vehicle for each market group (shaded pink) and year of manufacture (within these market groups). Against each year, is the vehicle make, model, years of manufacture. The range that a listed vehicle was manufactured within may include years where it was not top ranked. The top ranking vehicles within each year of manufacture are highlighted in green. These vehicles are found within the People Mover, Large, Medium, Small and Large SUV market groups only. No Light vehicles, Commercial Vans and Utilities, nor Compact and Medium SUVs ranked best for any year of manufacture. There were no Light vehicle models and no vehicles from the years of manufacture 1982-1983 with CWR upper 90% confidence limit less than the all model weighted average.

Scenario 3a *The most crashworthy vehicle for each market group.*
The most crashworthy vehicle within a market group regardless of year of manufacture is highlighted pink in Table 14, Table 15, and Table 16. In all cases except Light, Large SUVs and Commercial Vans, this was a vehicle manufactured in 2009. For Large SUVs the top ranking vehicle ceased production in 2008 and for Commercial Vans, it was 2007. No light vehicle models had a CWR upper 90% confidence limit less than the all model weighted average, so no CWR substitutions were made for light vehicles.

Scenario 3b *The most crashworthy popular vehicle for each market group.*
In the Appendix Table 124 depicts the most crashworthy popular models by age group. The lowest CWRs from each market group, for each country, are used as the substitutes in Scenario 3b. Again, no Light vehicle substitutions were made.

For New Zealand People Movers, the tabled Honda Odyssey was manufactured between 1995 and 1999, so does not meet the year 2000 minimum year of manufacture. The next most popular model with better than average crashworthiness (2.38) was the Toyota Tarago 2000-2006 which gained at least 2% of the New Zealand Market share for each of the 2 older driver age groups,

but did not rank in the top 10 most popular for the 65-74 year old market group; it ranked 11th - it ranked 6th for the 75 or over group. For this scenario the CWR for crash-involved older New Zealand drivers of People Movers was substituted with the CWR of the Toyota Tarago 00-06 rather than the tabled Honda Odyssey.

Scenario 4 *Vehicles fitted with forward collision warning systems across all speeds.*
Anderson et al. (2010) estimates the percent of fatal and injury crashes prevented for passenger vehicle crashes in Australia, when forward collision avoidance technology with automatic braking across all speeds is employed. The distribution of targeted crashes over older drivers differs for the distribution across all ages. The difficulty in adjusting for this lies in the inconsistencies of crash type coding across states. Anderson et al. (2010) determined the narrowly effective and broadly effective crash types for NSW and applied a 75% and 25% effectiveness of technology rating respectively. Across all states, these broad and narrow crash types cannot be identified consistently, or in some cases, at all. The 'narrow' crash types of rear-end, head-on and hit objects have been identified and the 'broad' crash types of intersection crashes have been identified and will be used to adjust for distribution differences in older driver crashes. The ratios of the percentage of 'narrow' and 'broad' of total fatal and injury crash counts for each age group relative to the percentages for the Australian combined states total is presented in Table 17. The estimated fatal and injury crash reduction percentages for collision avoidance technologies are adjusted by these ratios to determine crash reductions expected for older drivers. It is assumed that existing percentages of older driver vehicles already fitted with this technology is insignificant.

Table 14: Most crashworthy Large, Medium and small passenger vehicles for the years 1982-2009

		Large				***Medium***				***Small***		
Year	**Make**	**Model**		**CWR**	**Make**	**Model**		**CWR**	**Make**	**Model**		**CWR**
2009	Mercedes Benz	E-Class W211	02-09	0.61%	Jaguar	X-Type	02-09	1.07%	Honda	S2000	99-09	0.90%
2008	Mercedes Benz	E-Class W211	02-09	0.61%	Jaguar	X-Type	02-09	1.07%	Honda	S2000	99-09	0.90%
2007	Mercedes Benz	E-Class W211	02-09	0.61%	Jaguar	X-Type	02-09	1.07%	Honda	S2000	99-09	0.90%
2006	Mercedes Benz	E-Class W211	02-09	0.61%	Jaguar	X-Type	02-09	1.07%	Honda	S2000	99-09	0.90%
2005	Mercedes Benz	E-Class W211	02-09	0.61%	Jaguar	X-Type	02-09	1.07%	Honda	S2000	99-09	0.90%
2004	Mercedes Benz	E-Class W211	02-09	0.61%	Jaguar	X-Type	02-09	1.07%	Honda	S2000	99-09	0.90%
2003	Mercedes Benz	E-Class W211	02-09	0.61%	Jaguar	X-Type	02-09	1.07%	Honda	S2000	99-09	0.90%
2002	Mercedes Benz	E-Class W211	02-09	0.61%	Jaguar	X-Type	02-09	1.07%	Honda	S2000	99-09	0.90%
2001	Jaguar	S-Type	99-08	1.27%	Peugeot	406	96-04	1.85%	Honda	S2000	99-09	0.90%
2000	Jaguar	S-Type	99-08	1.27%	Peugeot	406	96-04	1.85%	Honda	S2000	99-09	0.90%
1999	Jaguar	S-Type	99-08	1.27%	Peugeot	406	96-04	1.85%	Honda	S2000	99-09	0.90%
1998	Lexus	LS400 / Celsior	90-00	1.39%	Peugeot	406	96-04	1.85%	Volvo	S40/V40	97-04	2.21%
1997	Lexus	LS400 / Celsior	90-00	1.39%	Peugeot	406	96-04	1.85%	Volvo	S40/V40	97-04	2.21%
1996	Lexus	LS400 / Celsior	90-00	1.39%	Peugeot	406	96-04	1.85%	Nil			
1995	Lexus	LS400 / Celsior	90-00	1.39%	Saab	9000	86-97	1.95%	Nil			
1994	Lexus	LS400 / Celsior	90-00	1.39%	Saab	9000	86-97	1.95%	Nil			
1993	Lexus	LS400 / Celsior	90-00	1.39%	Saab	9000	86-97	1.95%	Nil			
1992	Lexus	LS400 / Celsior	90-00	1.39%	Saab	9000	86-97	1.95%	Nil			
1991	Lexus	LS400 / Celsior	90-00	1.39%	Saab	9000	86-97	1.95%	Nil			
1990	Lexus	LS400 / Celsior	90-00	1.39%	Saab	9000	86-97	1.95%	Nil			
1989	Jaguar	XJ6	87-94	2.07%	Saab	9000	86-97	1.95%	Nil			
1988	Jaguar	XJ6	87-94	2.07%	Saab	9000	86-97	1.95%	Nil			
1987	Jaguar	XJ6	87-94	2.07%	Saab	9000	86-97	1.95%	Nil			
1986	Volvo	700/900 Series	84-92	2.58%	Saab	9000	86-97	1.95%	Nil			
1985	Volvo	700/900 Series	84-92	2.58%	Nil				Nil			
1984	Volvo	700/900 Series	84-92	2.58%	Nil				Nil			

All vehicle models for these market groups for the years 1982-1983 have CWRs with 90% confidence intervals which contain the weighted average for all models.

Table 15: Most crashworthy SUV passenger vehicles for the years 1982-2009

	SUV - Compact				SUV - Large				SUV - Medium			
Year	**Make**	**Model**		**%CWR**	**Make**	**Model**		**%CWR**	**Make**	**Model**		**%CWR**
2009	Honda	CR-V	07-09	1.90	Nissan	Patrol/ Safari	98-09	2.18	Toyota	Landcruiser Prado	03-09	1.67
2008	Honda	CR-V	07-09	1.90	BMW	X5	01-08	0.86	Toyota	Landcruiser Prado	03-09	1.67
2007	Honda	CR-V	07-09	1.90	BMW	X5	01-08	0.86	Toyota	Landcruiser Prado	03-09	1.67
2006	Honda	CR-V	02-06	0.71	BMW	X5	01-08	0.86	Holden	Adventra	03-06	1.38
2005	Honda	CR-V	02-06	2.08	BMW	X5	01-08	0.86	Holden	Adventra	03-06	1.38
2004	Honda	CR-V	02-06	2.08	BMW	X5	01-08	0.86	Holden	Adventra	03-06	1.38
2003	Honda	CR-V	02-06	2.08	BMW	X5	01-08	0.86	Holden	Adventra	03-06	1.38
2002	Honda	CR-V	02-06	2.08	BMW	X5	01-08	0.86	Jeep	Cherokee KJ	01-07	1.88
2001	Honda	CR-V	97-01	2.45	BMW	X5	01-08	0.86	Jeep	Cherokee KJ	01-07	1.88
2000	Honda	CR-V	97-01	2.45	Land Rover	Range Rover	95-02	1.20	Nissan	Pathfinder /	95-05	2.01
1999	Honda	CR-V	97-01	2.45	Land Rover	Range Rover	95-02	1.20	Nissan	Terrano / Regulus	95-05	2.01
1998	Honda	CR-V	97-01	2.45	Land Rover	Range Rover	95-02	1.20	Nissan	Pathfinder /	95-05	2.01
1997	Honda	CR-V	97-01	2.45	Land Rover	Range Rover	95-02	1.20	Nissan	Terrano / Regulus	95-05	2.01
1996					Land Rover	Range Rover	95-02	1.20	Nissan	Pathfinder /	95-05	2.01
1995					Land Rover	Range Rover	95-02	1.20	Nissan	Terrano / Regulus	95-05	2.01
1994					Land Rover	Discovery	91-02	2.48	Mitsubishi	Pajero	92-99	3.04
1993					Land Rover	Discovery	91-02	2.48	Mitsubishi	Pajero	92-99	3.04
1992					Land Rover	Discovery	91-02	2.48	Mitsubishi	Pajero	92-99	3.04
1991					Land Rover	Discovery	91-02	2.48				
1990					Nissan / Ford	Patrol / Maverick / Safari	88-97	2.63				
1989							88-97	2.63				
1988							88-97	2.63				

All vehicle models for these market groups for the years 1982-1987 have CWRs with 90% confidence intervals which contain the weighted average for all models.

Table 16: Most crashworthy People Movers and Commercial Vans and Utility passenger vehicles for the years 1982-2009

	Commercial - Ute				*Commercial - Van*				*People Mover*			
Year	**Make**	**Model**		**%CWR**	**Make**	**Model**		**%CWR**	**Make**	**Model**		**%CWR**
2009	Mitsubishi	Triton ML / MN	06-09	1.22					Kia	Carnival	06-09	0.48
2008	Mitsubishi	Triton ML / MN	06-09	1.22					Kia	Carnival	06-09	0.48
2007	Mitsubishi	Triton ML / MN	06-09	1.22	Ford	Transit	01-07	1.24	Kia	Carnival	06-09	0.48
2006	Mitsubishi	Triton ML / MN	06-09	1.22	Ford	Transit	01-07	1.24	Kia	Carnival	06-09	0.48
2005	Toyota	Hilux	05-09	2.14	Ford	Transit	01-07	1.24	Honda	Odyssey	04-09	1.07
2004	Mitsubishi	Triton MK	96-06	2.05	Ford	Transit	01-07	1.24	Honda	Odyssey	04-09	1.07
2003	Mitsubishi	Triton MK	96-06	2.05	Ford	Transit	01-07	1.24	Toyota	Tarago / Previa / Estima	00-06	2.38
2002	Mitsubishi	Triton MK	96-06	2.05	Ford	Transit	01-07	1.24	Toyota	Tarago / Previa / Estima	00-06	2.38
2001	Mitsubishi	Triton MK	96-06	2.05	Ford	Transit	01-07	1.24	Toyota	Tarago / Previa / Estima	00-06	2.38
2000	Mitsubishi	Triton MK	96-06	2.29	Volkswagen	Caravelle /Transporter	95-04	1.81	Toyota	Tarago / Previa / Estima	00-06	2.38
1999	Mitsubishi	Triton MK	96-06	2.29	Volkswagen		95-04	1.81	Honda	Odyssey	95-00	2.42
1998	Mitsubishi	Triton MK	96-06	2.29	Volkswagen		95-04	1.81	Honda	Odyssey	95-00	2.42
1997	Mitsubishi	Triton MK	96-06	2.29	Volkswagen	Caravelle / Transporter	95-04	1.81	Honda	Odyssey	95-00	2.42
1996	Mitsubishi	Triton MK	96-06	2.29	Volkswagen		95-04	1.81	Honda	Odyssey	95-00	2.42
1995					Volkswagen	Caravelle / Transporter	95-04	1.81	Honda	Odyssey	95-00	2.42

All vehicle models for these market groups for the years 1982-1994 have CWRs with 90% confidence intervals which contain the weighted average for all models

Table 17: Age Distribution of fatal and injury passenger vehicle crashes in the combined Australia states and New Zealand for the period 2005-2009

		Australian†							New Zealand						
		all	narrow			broad			all	narrow			broad		
	Age group		count	row%	ratio	count	row%	ratio		count	row%	ratio	count	row%	ratio
Fatal	75+ years	257	137	53	0.71	94	37	0.39	86	25	29	3.23	33	38	3.39
	65-74 years	201	137	68	0.91	39	19	0.52	54	21	39	1.72	10	19	1.64
	35-54 years	771	576	75	1.00	64	8	0.58	207	90	43	0.73	27	13	1.15
	All age Total	2715	2033	75	1.00	307	11	0.50	762	287	38	1.00	124	16	1.44
Injury	75+ years	7858	3168	40	0.71	3532	45	0.31	1731	303	18	1.50	840	49	1.62
	65-74 years	9689	4617	48	0.84	3721	38	0.46	1685	440	26	1.28	669	40	1.33
	35-54 years	68907	39860	58	1.02	20372	30	0.60	10098	3458	34	0.99	3163	31	1.05
	All age Total	210318	119512	57	1.00	62880	30	0.49	36281	10013	28	1.00	11603	32	1.07

*ratio of row % with % total Australian row %. Row % is the percentage of the narrow fatal/injury crashes of all fatal/injury crashes for the age group.

† Australian means combination of New South Wales, South Australia, Western Australia, Victoria and Queensland.

For each age group and injury severity type, the two distribution adjustment ratios (narrow and broad) from Table 17 have been combined to make a single adjustment ratio using the weightings that Anderson et al. (2010) used to determine expected crash reductions: 75% for 'narrowly selected' crash types and 25% for 'broadly selected' crash types. This correction for age distribution of crash types is present and applied in Table 18. Table 18 presents, by age group, the expected reductions in fatal and injury crashes that would occur if forward collision warning with automatic braking were applied to vehicles.

Table 18: Expected passenger vehicle crash reductions by age group associated with the installation of forward collision warning with automatic braking across all speeds based on police reported crash data from 2005-2009

	Australia				New Zealand			
	Age distribution adjustment		Expected % reduction in crashes		Age distribution adjustment		Expected % reduction in crashes	
	Fatal	Injury	Fatal	Injury	Fatal	Injury	Fatal	Injury
Age group								
75+ years	1.34	0.91	16	23	1.14	0.64	14	16
65-74 years	1.11	0.95	13	24	0.80	0.68	10	17
35-54 years	0.93	1.01	11	25	0.72	0.71	9	18
Total	1.00	1.00	12	25	0.74	0.63	9	16

5.5 CRASHWORTHINESS RATINGS CALCULATED FOR SCENARIOS

Figure 43 displays the average crashworthiness ratings for Australia and New Zealand under scenarios 1, 2 and 3 calculated after substituting the scenario crashworthiness ratings from section 5.4 into the dataset. Substitutions were only made if the scenario CWR was significantly different from the weighted average CWR for all models (3.57). When the 90% confidence interval for the scenario CWR included 3.57, the original CWR was used without substitution.

Similar results were produced for Australia and New Zealand. This calculation was also made for Australia, with NSW data excluded, because injury severity of drivers was not able to be determined from NSW data. The mean CWRs were almost identical and comparisons are made in the Appendix Table 136. Full results by age group and sex are presented in this table for Australia, and in Table 137 for New Zealand.

Scenario 1a and 1b, as the best case scenarios, obviously display the greatest difference in mean CWR from actual, however, it is interesting that there is little difference in mean CWR between scenario 1d/e (which used the mean of the top 10 models) with scenario 2b (which used the best from each year of manufacture from 1984 onwards).

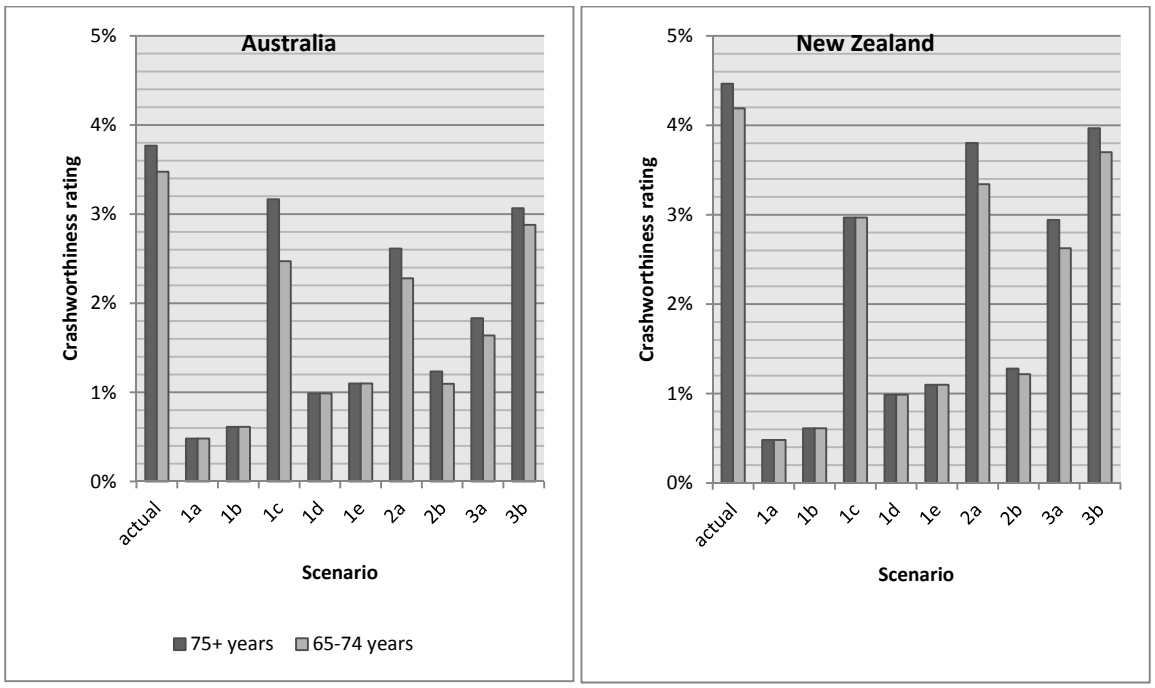

Figure 43: Actual CWR and CWR calculated for each scenario, by older driver age group for all 5 Australian states and for New Zealand.

The scenarios using popular models, 1c and 3b still produced crashworthiness ratings lower than the actual 2005-2009 data set mean. The CWR for scenario 2a, the best year of manufacture and market group, produced a CWR similar to the popular model scenarios. CWRs for New Zealand scenarios using popular models or market averages were higher than those of Australia.

5.6 SERIOUS INJURY AND FATALITY SAVINGS FOR SCENARIOS

Figure 44 displays the percentage savings in driver fatality and serious injury under each scenario for older drivers in Australia and New Zealand based on the 2005-2009 data set of passenger vehicles aged up to 27 years. Crash counts by age group and sex under each scenario are presented for Australia and New Zealand in the Appendix Table 136 and Table 137 respectively.

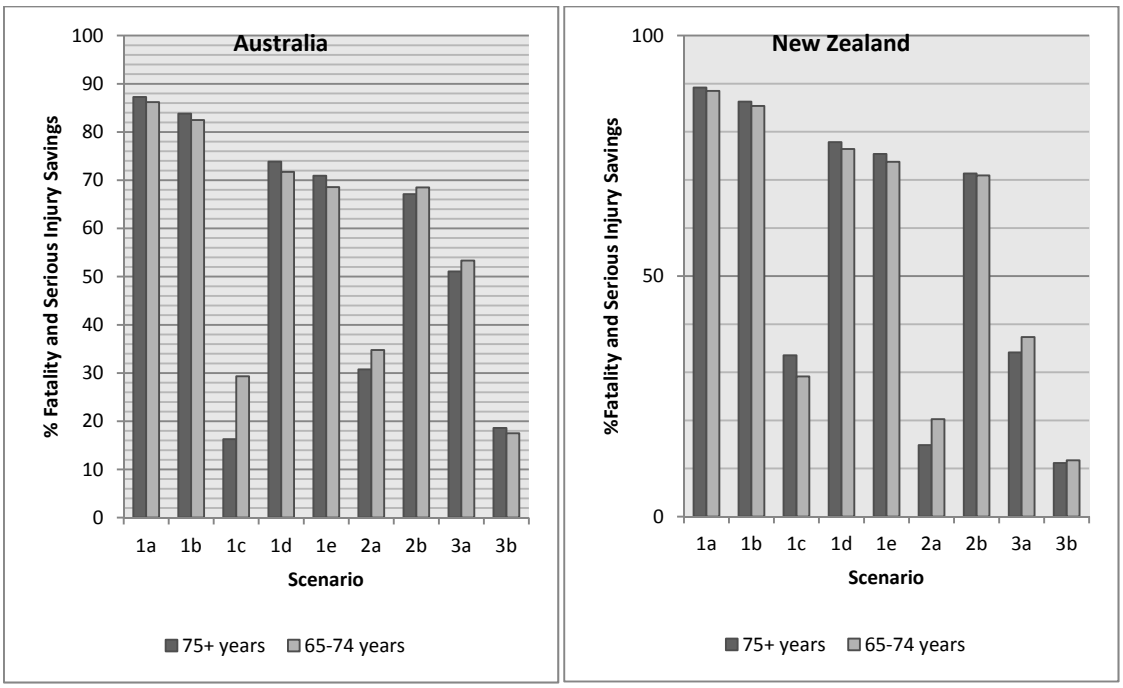

Figure 44: Percentage reductions in driver serious injury and fatality crashes for older drivers calculated for each scenario, for 4 Australian states and New Zealand from 2005-2009

The biggest reductions that could be achieved in driver fatality and serious injury crashes were for the best case scenarios (1a, 1b, 1c and 1d) where vehicle purchase price was not taken into account. For these vehicle substitutions, crash savings for each of the 75+ and 65-74 age groups was in excess of 1,400 for Australia and 200 for New Zealand over the 2005-2009 period. Crash savings for the 75+ were greater than for the 65-74 age groups for scenario 1a, 1b, 1d and 1e. Excluding Vans and People Movers made little difference to proportions of crash reductions. When the vehicle substitution was made from the most crashworthy (above average) vehicle from the same market group (Scenario 3a), the serious injury and fatal crash savings fell for both older driver age groups to about 1,100 for Australian and to about 100 for New Zealand. These 5 models substituted for the best available regardless of cost.

Cost and market group preferences were considered by choosing substitutions amongst models popular to older drivers. Scenario 1c and 3b limited substitutions to popular models, with 1c using the most crashworthy popular model and 3b presenting the best, most popular within market groups. Both of these models demonstrated the least amount of crash savings. Proportionally, 1c performed better in New Zealand (Table 19); however it was the least successful model for drivers aged 75+ in Australia.

Table 19: Expected percent passenger vehicle fatal and serious injury crash reductions by age group associated with vehicle optimisation scenarios calculated using police reported crash data from 2005-2009

		Scenario								
Older driver age groupings		**1a**	**1b**	**1c**	**1d**	**1e**	**2a**	**2b**	**3a**	**3b**
Australia										
All Drivers	75+ years	87	84	16	74	71	31	67	51	19
	65-74 years	86	82	29	72	69	35	68	53	18
Female	75+ years	88	84	20	75	72	26	69	47	17
	65-74 years	87	83	32	73	70	35	71	52	17
Male	75+ years	87	83	14	73	70	33	66	53	19
	65-74 years	86	82	27	71	68	35	67	54	18
New Zealand										
All Drivers	75+ years	89	86	34	78	75	15	71	34	11
	65-74 years	88	85	29	76	74	20	71	37	12
Female	75+ years	90	87	37	79	77	10	73	29	10
	65-74 years	89	86	31	77	74	16	72	33	10
Male	75+ years	89	86	31	77	74	19	70	39	13
	65-74 years	88	85	28	76	73	23	70	41	13

5.7 2011 COST OF POPULAR AND SCENARIO VEHICLES

Table 20 displays the new purchase price of the seven most popular vehicles amongst older drivers in Australia and New Zealand. Table 21 displays the new purchase price of some of the vehicles used in scenarios 1 through 3. These tables provide a guide to the current difference between costs of the most crashworthy Scenario 1-3 vehicles to purchase new and the cost of the most popular vehicles purchased new. The displayed costs were obtained from the RedBook online database (Redbook, 2011).

Table 20: 2011 cost ranges of the top 7 ranked vehicles crashed by older drivers in Australia and New Zealand during the years 2005-2009 by age group

Vehicle model	Cost range		Australia		New Zealand	
			75+ years rank	65-74 years rank	75+ years rank	65-74 years rank
TOYOTA CAMRY >=98	25,350	49,350	*1*	*3*		
TOYOTA COROLLA 94-98 / NOVA 95 on	19,990	32,740	*2*	*10*	*1*	*4*
TOYOTA COROLLA 120 SERIES	19,750	31,990	*3*	*4*	*7*	*1*
TOYOTA COROLLA 90-93 / NOVA 88-93	14,350	29,035	*4*	15		
TOYOTA CAMRY/APOLLO 93-97	24,270	39,562	*5*	14		
TOYOTA CAMRY/APOLLO 88-92	16,385	31,761	*6*	*8*		
HOLDEN COMMODORE VS/VR 93-97	20,800	45,700	*7*	*7*		
FORD FALCON EF/EL 94-98	26,332	69,500	*8*	*1*		
HOLDEN COMMODORE VT/VX 97-02	22,180	49,490	*9*	*5*		
FORD FALCON AU 98-02	29,226	51,050	13	*2*		
FORD FALCON BA 02-08	32,885	54,990	32	*6*		
NISSAN PULSAR >=96	18,775	33,090			*2*	*3*
HONDA JAZZ 02-08	15,390	25,920			*2*	*7*
TOYOTA ECHO 99-05	14,490	21,990			*4*	*9*
MAZDA 323 /LASER 82-88	5,486	29,310			*5*	14
SUZUKI SWIFT/BARINA >= 89	10,950	24,490			*6*	38
NISSAN BLUEBIRD NEW 93-97	29,490	38,680			*10*	*2*
NISSAN PULSAR 92-95	20,820	34,200			11	7
MAZDA 626/MX6 / TELSTAR 88-91	17,758	23,636			21	*5*
FORD MONDEO 95-01	23,654	34,799			37	*5*
All 7 Model Range			14-49 K	20-70K	5-33K	15-39

Table 21: 2011 cost ranges of some of the vehicles from Scenarios 1a, 1b, 2a and 3a

Vehicle model	Cost range	
1a Kia Carnival 06-09	29,990	37,690
1b Mercedes Benz E Class W211 02-09	*	*
2b **06-09** Kia Carnival 06-09	29,990	37,690
02-05 Mercedes Benz E Class W211 02-09	*	*
01 BMW X5 01-08	79,750	107,850
99-00 Honda S2000 99-09	68,450	69,950
95-02 Landrover Range Rover 95-02	79,950	155,900
90-94 Lexus LS400/ Celsior 90-00	109,200	152,000
86-89 Saab 9000 86-97	52,500	85,00
84-85 Volvo 700/900 84-92	29,240	43,695
3a. Large Mercedes Benz E-Class W211 02-09	*	*
Medium Jaguar X-Type 02-09	52,990	86,00
Small Honda S2000 99-09	68,450	74,590

*Unknown.

When carrying out comparisons of the purchase price of the most crashworthy vehicle from the matching year of manufacture (scenario 2a) of the popular vehicles crashed by older drivers, the most crashworthy vehicles are likely to exceed the price point for many consumers.

6.0 DISCUSSION:

Based on the three study aims as specified in Section 1.2 the key findings were that when compared to crash-involved drivers aged 35-54 years:

- Compared to younger drivers, older drivers were more likely to be injured in a crash and the injury was more likely to be serious, and older female drivers were more likely to be injured or seriously injured than older male drivers.

- The vehicles crashed by older drivers most commonly fell into the following Vehicle Market Groups: Small, Large, Medium, and then Light for Australia and Small, Light, Medium and Large for New Zealand.
- Crash-involved vehicles driven by older drivers tended to have poorer average crashworthiness but superior average aggressivity compared to vehicles driven by younger drivers. The poorer average crashworthiness is particularly evident among the 75+ age group of crash-involved drivers.
- Crash-involved older drivers tend crash in vehicles which were purchased new or only a few years old and they retain these vehicles for long periods, possibly until they no longer wish to drive anymore.
- Older drivers were over represented in crashes in rural areas, in lower speed zones, on sealed dry roads, on straight roads, at uncontrolled intersections, in collisions with hit objects and parked vehicles.
- Optimising safe vehicle choice by older drivers has the potential to result in serious injury and fatal crash reductions of up to 90% if vehicle cost was not a factor. When optimum safe vehicle choices were restricted to popular (affordable) models of at least a year 2000 manufacture, fatal and serious injury crash reductions of up to 37% could be achieved. When choices were further restricted to match the market group of choice, serious injury and fatal crash reductions up to 19% could be achieved.

The secondary safety provided by vehicles crashed by older drivers was poor when compared to the secondary safety provided by vehicles crashed by drivers aged 35-54. The results indicate that the older the crash-involved driver, the poorer on average their vehicle's crashworthiness. As drivers reach 65 years of age and in particular as they exceed 75 years of age their age-related physical decline means that their vehicle should provide the best possible CWR so that in the event of a crash their risk of injury or fatality is minimised. The findings of this study indicate that crash-involved drivers aged 75 years or above were driving the poorest vehicles in terms of average CWR and that crashes involving this age group are most likely to result in serious injury or fatality. As a result it may be most effective to develop initiatives that focus on the improved vehicle choice of drivers aged 75 years or over. The findings also indicate that older drivers are more likely to be crashing light vehicles, which suggests that initiatives to improve vehicle choice could include discouraging the older driver to drive light vehicles.

Older drivers tend to drive vehicles which were purchased new or only a few years old and they retain the vehicles for long periods, possibly until they no longer wish to drive anymore. It may very well be their last vehicle purchase, so to prevent technology passing them by, it is vital that older drivers buy the safest vehicle with the most advanced relevant safety technology. The features contained in their purchase need to be relevant for years to come. In this report, forward collision avoidance technology with automatic braking across

all speeds was identified as the optional advanced safety technology which best matched the crash types and driving behaviour of older drivers. It was found to be associated with expected injury crash reductions for older drivers of about 10-23%.

In this study older drivers were over-represented at crashes occurring at uncontrolled intersections. Negotiating uncontrolled intersections is a driving situation that some older drivers actively avoid (OECD, 2001). Previous research confirms the difficulties that older drivers experience when negotiating intersections. For older drivers, intersection crashes often result from failure to yield the right-of-way (Aizenberg & McKenzie, 1997), when turning across traffic (Chandraratn, Mitchell & Stamatiadis, 2002), when traveling straight (Preusser, Williams, Ferguson, Ulmer, & Weinstein, 1998), at T-intersections (Braitman, Kirley, Ferguson, Chaudhary, 2007), or when evaluating the gaps between their vehicles and other vehicles (Oxley, Fildes, Corben, & Langford, 2006).

Gap selection, a key part of negotiating uncontrolled intersections, is an inherently complex driving task, requiring the integration of distance and velocity information with time (Candappa, Corben, & Fotheringham, 2008). Due to age-related decline in functional abilities associated with driving performance the task of selecting appropriate gaps in traffic is likely to become increasingly difficult when negotiating complex intersections, and at high-speeds, or on roads with multi-lane carriageways, or with high traffic volumes. Emerging vehicle safety technologies do not specifically target the prevention of uncontrolled intersection crashes, however, intersection crashes generally are broadly sensitive to forward collision and unprotected road user detection technology (Anderson et al., 2010). The technology for vehicle to vehicle communication is likely to be more appropriate for addressing the issue of uncontrolled intersection crashes however this is an emerging technology and has not yet been evaluated (Rakotonirainy & Steinhardt, 2009).

Stage 3 of this study found that road trauma reductions of between 19-90% could be achieved through improved vehicle choice among older drivers. Whilst this demonstrates that there is scope to improve to older driver's vehicle choices, vehicle choice optimisation initiatives must ensure that the suggested alternate vehicles do not significantly exceed the consumer's budget. The average purchase price of the vehicles that were used in the vehicle choice optimisation scenarios which are displayed in Table 21 (average $72K) are likely to exceed the budget of most older drivers, based on the fact that the new purchase price of the most common crashed vehicles (displayed in Table 20) averages $29K.

Further work is required to develop initiatives that encourage older drivers to purchase vehicles that have the latest in-vehicle safety technology within their budget. The vehicles listed in Table 21 are likely to exceed the consumer's budget, however further work should be carried out that for each vehicle market group identifies the most crashworthy vehicle within the price range of the average older driver (e.g. ~$30K). The fact that older drivers retain their vehicles for longer indicates that they are unwilling to change their vehicle which may be due range of reasons, including financial constraints, resistance to adapt to a new vehicle due to anticipating issues with the usability of the vehicle, an assumption that their current vehicle is safe, or because they are uncertain how their health may impact on their ability to drive in the future. Each of these issues may be addressed through the development of initiatives targeted at educating older drivers.

The financial constraint issue could be addressed using a similar approach to the young driver initiative of The First Car List. That is, developing resources for older drivers that demonstrate how their choice of vehicle could be improved from their current vehicle or to a vehicle they are considering buying, by allowing them to compare popular choices of

vehicles against safer alternatives. Potentially, the initiative could also provide a total vehicle cost, including running costs, to provide the consumer with an overall understanding of how much the vehicle is likely to cost. Whereas determining when to expose young novice drivers to such resources is fairly straightforward due to the distinct licensing phases of the Graduated Driver Licensing System (GDLS) it is less clear when vehicle choice optimisation resources should be provided to older drivers because of the variability in time of vehicle purchase. Initiatives should provide recommendations with some understanding of how older driver's lifestyle, SES, and the presence of health-related conditions might influence their choice of vehicle. Therefore, further work in profiling the needs of the older driver may be necessary, and this profiling may inform the most appropriate timing for providing such resource. For example, the requirements and purchase timing (e.g. upon retirement, 10-years pre-retirement, 10-years post-retirement) of a vehicle driven by an older driver who has chronic illness requiring regular trips to physicians for medical treatment compared to an older driver whom requires a vehicle for the purposes of recreational tours and has no medical issues are likely to be distinct. Vehicle choice initiatives should acknowledge these individual differences to the best extent possible. Other financial incentives to improve vehicle choice could include reduced insurance premiums for vehicles with particular safety features or safety rating.

In addition to improvements in vehicle design, overcoming the anticipated issues with the usability of a new vehicle could be achieved by inviting older drivers with a newly acquired vehicle to a vehicle demonstration session designed to ease the transition between their old and new vehicle. This might be offered through motoring clubs or by the specific vehicle manufacturers. By overcoming issues with usability may lead older drivers embracing the notion of upgrading their vehicle more often. It has been recommended that test dummies that model the effects of older adults be incorporated into vehicle testing (OCED, 2001). It has been reported that engineers being trained by some vehicle manufacturers are asked to wear a "third-age" suit which provides insight into age-related driving performance problems by making the wearer feel 30 years older through restricted body movement, inability to turn the head, stiff fingers and joints and increased sensitivity to glare (Roach, 2000, cited in OECD, 2001).

Overcoming older driver's assumptions that their vehicle is safe suggests that older drivers are misinformed about the relative safety offered by their vehicle. Charlton et al. (2002) conducted focus groups with older drivers and reported that many participants were misinformed about vehicle structure and modern crumple zones and specific safety technologies such as airbags. Females were generally less informed than males and none of the participants nominated vehicle appearance and vehicle make or model as important. This indicates that there is scope for educating older drivers, particularly older females, and that generally speaking a vehicle's image is not likely to pose a barrier when encouraging older drivers to consider alternate vehicle choices. Older females could be considered a priority area based on this study's finding that they were over-represented in serious injuries and fatalities and the trend that older females are more likely to hold their license for longer compared with previous generations (OECD, 2001)

Due to the aging population, the proportion of older drivers is expected to similarly increase. By 2056, a quarter of passenger vehicle drivers are expected to be older drivers, doubling the 2009 rate of 13%. On the basis of Police-reported crash data used in the current study it was estimated that older driver crashes could double by the year 2056, representing 7.0% and 8.7% Police-reported crashes in Australia and New Zealand to 14% and 17% respectively. Therefore if the ongoing mobility and safety of older adults is not addressed there will be a serious future impact to society. This report relates to several of

the OECD (2001) priority areas, in particular safe vehicles for older drivers, support for older adults to continue to drive safely, and educational campaigns for older adults that promote mobility and safety.

7.0 SUMMARY AND RECOMMENDATIONS

Within the context of ageing and transport, the provision of safe vehicles for older drivers is a particularly important area, because the motor vehicle represents the transport mode of choice for older drivers, the estimated rapid increase in the number of older adults in the coming decades, and older adult's vulnerability to injury or death in a motor vehicle crash due to their frailty. The findings of the study demonstrate that there is scope to significantly reduce road trauma by improving older driver's choice of vehicle.

The following recommendations are made on the basis of the key findings and discussion points:

- Prioritise areas of investigation within the area of safe vehicles for older drivers, similar to the priorities assigned to the area of ageing and transport in the OECD (2001) report. For example, focusing initiatives on older females and drivers aged 75 years or above.

- Develop a strategy to encourage safer vehicle choices including developing initiatives similar to 'The First Car List' for young novice drivers to encourage purchase of safer vehicles among older drivers. Key differences between The First Car List and a list for older drivers would be the available budget and a greater focus on newer vehicles. Within this initiative older drivers would ideally be discouraged from driving light cars and encouraged to take up specific vehicle technologies.

- Investigate the feasibility of developing financial incentives for older drivers to purchase safer vehicles e.g. reduced insurance premium if not a light vehicle or if has specified technologies.

- Conduct further research that aims to understand broad profiles of older drivers based on their lifestyle, SES, and the presence of health-related conditions, and how these factors might influence their choice of vehicle.

- Increase public awareness that older driver's vehicle choice could be improved and that such improvements might lead to reduced road trauma.

- Encourage vehicle manufacturers through public awareness campaigns to design vehicles that take into account age-related declines in performance and ability so that inappropriate designs are not a barrier to safer vehicle choices among a fast-growing cohort of the population.

- Consider other avenues for encouraging older drivers to purchase safe vehicles, including the potential effectiveness of involving their adult children in the vehicle purchase process.

- Consider vehicle-to-vehicle communication technology, and other safety technologies that would benefit older drivers, and develop policy so that older drivers can access these technologies rapidly.

- Investigate improved intersection design that enables older drivers to safely negotiate intersections including consideration of how new vehicle designs and safety technology might interact with these improved infrastructure designs.

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APPENDIX A – TABLES

Table 22: Numbers and percentages of drivers of passenger vehicles involved in crashes during the years 2005-2009 by age group, sex and Australian state

	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
Driver Sex	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Queensland														
UNKNOWN	.	.	.	.	.	.	5	0.01	5	0.01	4,488	91.1	4,498	4.2
FEMALE	1,186	36.5	1,885	39.2	4,047	41.5	15,699	46.9	21,000	40.2	61	1.2	43,878	40.5
MALE	2,067	63.5	2,924	60.8	5,695	58.5	17,753	53.1	31,255	59.8	379	7.7	60,073	55.4
Total	3,253	100	4,809	100	9,742	100	33,457	100	52,260	100	4,928	100	108,449	100
Western Australia														
UNKNOWN	69	1.2	108	1.1	232	1.0	718	1.0	846	0.8	6,078	14.2	8,051	3.0
FEMALE	2,066	35.2	3,900	38.1	9,439	42.3	35,161	46.7	46,648	43.2	13,245	31.0	110,459	41.8
MALE	3,733	63.6	6,214	60.8	12,630	56.6	39,349	52.3	60,567	56.0	23,404	54.8	145,897	55.2
Total	5,868	100	10,222	100	22,301	100	75,228	100	108,061	100	42,727	100	264,407	100

...continued

Driver Sex	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
South Australia														
UNKNOWN	4	0.1	7	0.09	11	0.1	91	0.2	139	0.2	8,888	50.2	9,140	5.3
FEMALE	1,920	34.4	2,602	34.7	6,012	38.2	22,489	42.0	28,675	39.3	2,719	15.3	64,417	37.2
MALE	3,662	65.6	4,889	65.2	9,707	61.7	30,897	57.8	44,160	60.5	6,105	34.5	99,420	57.5
Total	5,586	100	7,498	100	15,730	100	53,477	100	72,974	100	17,712	100	172,977	100

Table 23: Distribution of drivers of passenger vehicles involved in the complete sample of crashes in New South Wales, Victoria, Queensland, South Australia and Western Australia during the years 2005-2009 across age groups, by sex

Driver Sex	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
UNKNOWN	81	0.3	127	0.3	285	0.3	956	0.3	1,189	0.3	47,255	46.1	49,893	5.0
FEMALE	9,699	35.4	14,807	36.0	33,874	39.3	130,568	43.5	172,506	40.1	19,431	19.0	380,885	38.6
MALE	17,618	64.3	26,207	63.7	52,006	60.4	168,543	56.2	256,800	59.6	35,692	34.9	556,866	56.4
Total (% of Total)	27398	***2.8***	41,141	***4.2***	86,165	***8.7***	300,067	***30.4***	430,495	***43.6***	102,378	***10.4***	987,644	100

Table 24: Distribution of drivers of passenger vehicles involved in the complete sample of crashes in New Zealand during the years 2005-2009 across age groups, by sex

Driver Sex	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
UNKNOWN	3	0.1	3	0.1	1	0.02	14	0.07	27	0.08	586	37.2	634	1.0
FEMALE	1,219	45.2	1,232	40.5	2,337	42.9	8,773	44.8	13,079	38.8	325	20.7	26,965	40.8
MALE	1,478	54.7	1,804	59.4	3,112	57.1	10,794	55.1	20,628	61.2	663	42.1	38,479	58.2
Total (% of Total)	2,700	***4.1***	3,039	***4.6***	5,450	***8.2***	19,581	***29.6***	33,734	***51.1***	1,574	***2.4***	66,078	100

Table 25: Distribution of drivers of passenger vehicles involved in the complete sample of crashes in New South Wales, Victoria, Queensland, South Australia and Western Australia during the years 2005-2009 across age groups, by injury risk

	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
Injury Risk	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	19,539	71.3	31,452	76.4	66,631	77.3	231160	77.0	329223	76.5	99,321	97.0	777,326	78.7
INJURED	7,859	28.7	9,689	23.6	19,534	22. 7	68,907	23.0	101272	23.5	3,057	3.0	210,318	21.3
Total	27,398	100	41,141	100	86,165	100	300,067	100	430,495	100	102,378	100	987,644	100

Table 26: Distribution of drivers of passenger vehicles involved in the complete sample of crashes in New Zealand during the years 2005-2009 across age groups, by injury risk

	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
Injury Risk	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	969	35.89	1,354	44.55	2,571	47.17	9,483	48.43	14,266	42.29	1,154	73.32	29,797	45.09
INJURED	1,731	64.11	1,685	55.45	2,879	52.83	10,098	51.57	19,468	57.71	420	26.68	36,281	54.91
Total	2,700		3,039		5,450		19,581		33,734		1,574		66,078	

Table 27: Injury risk by age grouping for older drivers - Australia

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	19,539	71.32	31,452	76.45	66,631	77.33	231160	77.04	329223	76.48	99,321	97.01	777326	78.71
INJURED	7,859	28.68	9,689	23.55	19,534	22.67	68,907	22.96	101272	23.52	3,057	2.99	210318	21.29
Total	27,398	100.00	41,141	100.00	86,165	100.00	300067	100.00	430495	100.00	102378	100.00	987644	100.00

Table 28: Injury risk by age grouping for older drivers and by sex - Australia Female

NOT INJURED	6,441	66.41	10,273	69.38	23,797	70.25	92,625	70.94	119886	69.50	18,209	93.71	271231	71.21
INJURED	3,258	33.59	4,534	30.62	10,077	29.75	37,943	29.06	52,620	30.50	1,222	6.29	109654	28.79
Total	9,699	100.00	14,807	100.00	33,874	100.00	130568	100.00	172506	100.00	19,431	100.00	380885	100.00

Table 29: Injury risk by age grouping for older drivers by sex - Australia Male

NOT INJURED	13,027	73.94	21,069	80.39	42,580	81.88	137677	81.69	208286	81.11	34,434	96.48	457073	82.08
INJURED	4,591	26.06	5,138	19.61	9,426	18.12	30,866	18.31	48,514	18.89	1,258	3.52	99,793	17.92
Total	17,615	100.00	26,207	100.00	52,006	100.00	168543	100.00	256800	100.00	35,692	100.00	556866	100.00

Table 30: Injury risk by age grouping for older drivers - New Zealand

	Age group												**Total**	
	75+ years		**65-74 years**		**55-64 years**		**35-54 years**		**0-34 years**		**Unknown**			
Injury Risk	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
NOT INJURED	969	35.89	1,354	44.55	2,571	47.17	9,483	48.43	14,266	42.29	1,154	73.32	29,797	45.09
INJURED	1,731	64.11	1,685	55.45	2,879	52.83	10,098	51.57	19,468	57.71	420	26.68	36,281	54.91
Total	2,700	100.00	3,039	100.00	5,450	100.00	19,581	100.00	33,734	100.00	1,574	100.00	66,078	100.00

Table 31: Injury risk by age grouping for older drivers and by sex - New Zealand Female

NOT INJURED	375	30.76	448	36.36	862	36.88	3,717	42.37	4,889	37.38	189	58.15	10,480	38.87
INJURED	844	69.24	784	63.64	1,475	63.12	5,056	57.63	8,190	62.62	136	41.85	16,485	61.13
Total	1,219	100.00	1,232	100.00	2,337	100.00	8,773	100.00	13,079	100.00	325	100.00	26,965	100.00

Table 32: Injury risk by age grouping for older drivers and by sex - New Zealand Male

NOT INJURED	592	40.05	906	50.22	1,708	54.88	5,758	53.34	9,363	45.39	470	70.89	18,797	48.85
INJURED	886	59.95	898	49.78	1,404	45.12	5,036	46.66	11,265	54.61	193	29.11	19,682	51.15
Total	1,478	100.0	1,804	100.00	3,112	100.00	10,794	100.00	20,628	100.00	663	100.00	38,479	100.00

Table 33: Injury risk by age grouping for older drivers - New South Wales

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	6,680	70.89	10,844	76.68	23,135	78.60	84,444	79.31	123729	79.94	32,838	95.65	281670	80.80
INJURED	2,743	29.11	3,298	23.32	6,299	21.40	22,028	20.69	31,049	20.06	1,494	4.35	66,911	19.20
Total	9,423	100.00	14,142	100.00	29,434	100.00	106472	100.00	154778	100.00	34,332	100.00	348581	100.00

Table 34: Injury risk by age grouping for older drivers - Victoria

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	1,266	38.74	2,205	49.33	4,749	53.01	16,965	53.97	20,817	49.07	1,792	66.89	47,794	51.26
INJURED	2,002	61.26	2,265	50.67	4,209	46.99	14,468	46.03	21,605	50.93	887	33.11	45,436	48.74
Total	3,268	100.00	4,470	100.00	8,958	100.00	31,433	100.00	42,422	100.00	2,679	100.00	93,230	100.00

Table 35: Injury risk by age grouping for older drivers - Queensland

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	1,939	59.61	3,112	64.71	6,318	64.85	21,915	65.50	34,660	66.32	4,864	98.70	72,808	67.14
INJURED	1,314	40.39	1,697	35.29	3,424	35.15	11,542	34.50	17,600	33.68	64	1.30	35,641	32.86
Total	3,253	100.00	4,809	100.00	9,742	100.00	33,457	100.00	52,260	100.00	4,928	100.00	108449	100.00

Table 36: Injury risk by age grouping for older drivers - Western Australia

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	4,998	85.17	8,777	85.86	18,752	84.09	61,581	81.86	87,730	81.19	42,288	98.97	224126	84.77
INJURED	870	14.83	1,445	14.14	3,549	15.91	13,647	18.14	20,331	18.81	439	1.03	40,281	15.23
Total	5,868	100.00	10,222	100.00	22,301	100.00	75,228	100.00	108061	100.00	42,727	100.00	264407	100.00

Table 37: Injury risk by age grouping for older drivers - South Australia

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	4,656	83.35	6,514	86.88	13,677	86.95	46,255	86.50	62,287	85.36	17,539	99.02	150928	87.25
INJURED	930	16.65	984	13.12	2,053	13.05	7,222	13.50	10,687	14.64	173	0.98	22,049	12.75
Total	5,586	100.00	7,498	100.00	15,730	100.00	53,477	100.00	72,974	100.00	17,712	100.00	172977	100.00

Table 38: Injury risk by age grouping for older drivers and by sex - New South Wales Female

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	2,217	66.42	3,363	70.30	7,754	71.11	31,889	73.47	43,028	73.18	2,195	76.75	90,446	72.89
INJURED	1,121	33.58	1,421	29.70	3,150	28.89	11,518	26.53	15,772	26.82	665	23.25	33,647	27.11
Total	3,338	100.00	4,784	100.00	10,904	100.00	43,407	100.00	58,800	100.00	2,860	100.00	124093	100.00

Table 39: Injury risk by age grouping for older drivers and by sex - New South Wales Male

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	4,462	73.34	7,476	79.93	15,356	82.98	52,449	83.31	80,578	84.07	4,344	86.64	164665	83.26
INJURED	1,622	26.66	1,877	20.07	3,149	17.02	10,510	16.69	15,273	15.93	670	13.36	33,101	16.74
Total	6,084	100.00	9,353	100.00	18,505	100.00	62,959	100.00	95,851	100.00	5,014	100.00	197766	100.00

Table 40: Injury risk by age grouping for older drivers and by sex - Victoria Female

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	340	28.60	570	34.84	1,354	39.00	6,072	43.96	6,729	38.71	262	47.99	15,327	40.29
INJURED	849	71.40	1,066	65.16	2,118	61.00	7,740	56.04	10,654	61.29	284	52.01	22,711	59.71
Total	1,189	100.00	1,636	100.00	3,472	100.00	13,812	100.00	17,383	100.00	546	100.00	38,038	100.00

Table 41: Injury risk by age grouping for older drivers and by sex - Victoria Male

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	926	44.69	1,634	57.80	3,385	61.89	10,873	61.83	14,049	56.27	539	68.23	31,406	58.47
INJURED	1,146	55.31	1,193	42.20	2,084	38.11	6,712	38.17	10,918	43.73	251	31.77	22,304	41.53
Total	2,072	100.00	2,827	100.00	5,469	100.00	17,585	100.00	24,967	100.00	790	100.00	53,710	100.00

Table 42: Injury risk by age grouping for older drivers and by sex - Queensland Female

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	618	52.11	1,046	55.49	2,246	55.50	9,164	58.37	12,099	57.61	56	91.80	25,229	57.50
INJURED	568	47.89	839	44.51	1,801	44.50	6,535	41.63	8,901	42.39	5	8.20	18,649	42.50
Total	1,186	100.00	1,885	100.00	4,047	100.00	15,699	100.00	21,000	100.00	61	100.00	43,878	100.00

Table 43: Injury risk by age grouping for older drivers and by sex - Queensland Male

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	1,321	63.91	2,066	70.66	4,072	71.50	12,747	71.80	22,556	72.17	360	94.99	43,122	71.78
INJURED	746	36.09	858	29.34	1,623	28.50	5,006	28.20	8,699	27.83	19	5.01	16,951	28.22
Total	2,067	100.00	2,924	100.00	5,695	100.00	17,753	100.00	31,255	100.00	379	100.00	60,073	100.00

Table 44: Injury risk by age grouping for older drivers and by sex - Western Australia Female

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	1,713	82.91	3,168	81.23	7,508	79.54	27,091	77.05	35,076	75.19	13,042	98.47	87,598	79.30
INJURED	353	17.09	732	18.77	1,931	20.46	8,070	22.95	11,572	24.81	203	1.53	22,861	20.70
Total	2,066	100.00	3,900	100.00	9,439	100.00	35,161	100.00	46,648	100.00	13,245	100.00	110459	100.00

Table 45: Injury risk by age grouping for older drivers and by sex - Western Australia Male

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	3,219	86.23	5,512	88.70	11,036	87.38	33,853	86.03	51,908	85.70	23,183	99.06	128711	88.22
INJURED	514	13.77	702	11.30	1,594	12.62	5,496	13.97	8,659	14.30	221	0.94	17,186	11.78
Total	3,733	100.00	6,214	100.00	12,630	100.00	39,349	100.00	60,567	100.00	23,404	100.00	145897	100.00

Table 46: Injury risk by age grouping for older drivers and by sex - South Australia Female

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	1,553	80.89	2,126	81.71	4,935	82.09	18,409	81.86	22,954	80.05	2,654	97.61	52,631	81.70
INJURED	367	19.11	476	18.29	1,077	17.91	4,080	18.14	5,721	19.95	65	2.39	11,786	18.30
Total	1,920	100.00	2,602	100.00	6,012	100.00	22,489	100.00	28,675	100.00	2,719	100.00	64,417	100.00

Table 47: Injury risk by age grouping for older drivers and by sex - South Australia Male

Injury Risk	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
NOT INJURED	3,099	84.63	4,381	89.61	8,731	89.95	27,755	89.83	39,195	88.76	6,008	98.41	89,169	89.69
INJURED	563	15.37	508	10.39	976	10.05	3,142	10.17	4,965	11.24	97	1.59	10,251	10.31
Total	3,662	100.00	4,889	100.00	9,707	100.00	30,897	100.00	44,160	100.00	6,105	100.00	99,420	100.00

Table 48: Injury severity by age grouping for older drivers - Australia

Injury Severity	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
INJURED but not admitted	3,026	59.16	4,364	68.3	9,905	74.84	36,501	77.86	52,854	75.27	1,252	80.1	107902	75.24
KILLED OR SERIOUSLY INJURED	2,089	40.84	2,027	31.7	3,330	25.16	10,378	22.14	17,369	24.73	312	20.0	35,505	24.76
Total	5,115	100	6,391	100	13,235	100	46,879	100	70,223	100	1,564	100	143407	100.00

Table 49: Injury severity by age grouping for older drivers and by sex - Australia Female

INJURED	1,237	57.88	2,165	69.55	5,319	76.79	21,274	80.51	29,216	79.29	459	82.4	59,670	78.51
KILLED OR SERIOUSLY INJURED	900	42.12	948	30.45	1,608	23.21	5,151	19.49	7,632	20.71	98	17.6	16,337	21.49
Total	2,137	100	3,113	100	6,927	100	26,425	100	36,848	100	557	100	76,007	100

Table 50: Injury severity by age grouping for older drivers and by sex - Australia Male

INJURED	1,783	60.07	2,186	67.03	4,560	72.65	15,140	74.38	23,528	70.78	463	78.6	47,660	71.46
KILLED OR SERIOUSLY INJURED	1,185	39.93	1,075	32.97	1,717	27.35	5,216	25.62	9,713	29.22	126	21.4	19,032	28.54
Total	2,968	100	3,261	100	6,277	100	20,356	100	33,241	100	589	100	66,692	100

Table 51: Injury severity by age grouping for older drivers - New Zealand

	Age group												**Total**	
	75+ years		**65-74 years**		**55-64 years**		**35-54 years**		**0-34 years**		**Unknown**			
Injury Severity	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
INJURED	1,374	79.38	1,408	83.56	2,441	84.79	8,650	85.66	16,590	85.22	350	83.33	30,813	84.93
KILLED OR SERIOUSLY INJURED	357	20.62	277	16.44	438	15.21	1,448	14.34	2,878	14.78	70	16.67	5,468	15.07
Total	1,731	100	1,685	100	2,879	100	10,098	100	19,468	100	420	100	36,281	100

Table 52: Injury severity by age grouping for older drivers and by sex - New Zealand Female

INJURED	684	81.04	677	86.4	1,258	85.3	4,458	88.17	7,252	88.55	117	86.03	14,446	87.63
KILLED OR SERIOUSLY INJURED	160	18.96	107	13.6	217	14.7	598	11.83	938	11.45	19	13.97	2,039	12.37
Total	844	100	784	100	1,475	100	5,056	100	8,190	100	136	100	16,485	100

Table 53: Injury severity by age grouping for older drivers and by sex - New Zealand Male

INJURED	689	77.77	729	81.18	1,183	84.26	4,187	83.14	9,327	82.80	151	78.24	16,266	82.64
KILLED OR SERIOUSLY INJURED	197	22.23	169	18.82	221	15.74	849	16.86	1,938	17.20	42	21.76	3,416	17.36
Total	886	100	898	100	1,404	100	5,036	100	11,265	100	193	100	19,682	100

Table 54: Injury severity by age grouping for older drivers - Victoria

Injury Severity	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
INJURED	948	47.35	1,281	56.56	2,668	63.39	9,736	67.29	13,831	64.02	686	77.34	29,150	64.16
KILLED OR SERIOUSLY INJURED	1,054	52.65	984	43.44	1,541	36.61	4,732	32.71	7,774	35.98	201	22.66	16,286	35.84
Total	2,002	100.00	2,265	100.00	4,209	100.00	14,468	100.00	21,605	100.00	887	100.00	45,436	100.00

Table 55: Injury severity by age grouping for older drivers and by sex - Victoria Female

INJURED	373	43.93	610	57.22	1,376	64.97	5,397	69.73	7,245	68.00	225	79.23	15,226	67.04
KILLED OR SERIOUSLY INJURED	476	56.07	456	42.78	742	35.03	2,343	30.27	3,409	32.00	59	20.77	7,485	32.96
Total	849	100.00	1,066	100.00	2,118	100.00	7,740	100.00	10,654	100.00	284	100.00	22,711	100.00

Table 56: Injury severity by age grouping for older drivers and by sex - Victoria Male

INJURED	572	49.91	668	55.99	1,289	61.85	4,328	64.48	6,565	60.13	188	74.90	13,610	61.02
KILLED OR SERIOUSLY INJURED	574	50.09	525	44.01	795	38.15	2,384	35.52	4,353	39.87	63	25.10	8,694	38.98
Total	1,146	100.00	1,193	100.00	2,084	100.00	6,712	100.00	10,918	100.00	251	100.00	22,304	100.00

Table 57: Injury severity by age grouping for older drivers - Queensland

	Age group												**Total**	
	75+ years		**65-74 years**		**55-64 years**		**35-54 years**		**0-34 years**		**Unknown**			
Injury Severity	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
INJURED	753	57.31	1,111	65.47	2,414	70.50	8,430	73.04	12,449	70.73	55	85.94	25,212	70.74
KILLED OR SERIOUSLY INJURED	561	42.69	586	34.53	1,010	29.50	3,112	26.96	5,151	29.27	9	14.06	10,429	29.26
Total	1,314	100.00	1,697	100.00	3,424	100.00	11,542	100.00	17,600	100.00	64	100.00	35,641	100.00

Table 58: Injury severity by age grouping for older drivers and by sex - Queensland Female

INJURED	326	57.39	552	65.79	1,283	71.24	4,898	74.95	6,501	73.04	5	100.00	13,565	72.74
KILLED OR SERIOUSLY INJURED	242	42.61	287	34.21	518	28.76	1,637	25.05	2,400	26.96	.	.	5,084	27.26
Total	568	100.00	839	100.00	1,801	100.00	6,535	100.00	8,901	100.00	5	100.00	18,649	100.00

Table 59: Injury severity by age grouping for older drivers and by sex - Queensland Male

INJURED	427	57.24	559	65.15	1,131	69.69	3,531	70.54	5,948	68.38	14	73.68	11,610	68.49
KILLED OR SERIOUSLY INJURED	319	42.76	299	34.85	492	30.31	1,475	29.46	2,751	31.62	5	26.32	5,341	31.51
Total	746	100.00	858	100.00	1,623	100.00	5,006	100.00	8,699	100.00	19	100.00	16,951	100.00

Table 60: Injury severity by age grouping for older drivers - Western Australia

Injury Severity	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
INJURED	617	70.92	1,159	80.21	3,042	85.71	11,993	87.88	17,422	85.69	370	84.28	34,603	85.90
KILLED OR SERIOUSLY INJURED	253	29.08	286	19.79	507	14.29	1,654	12.12	2,909	14.31	69	15.72	5,678	14.10
Total	870	100.00	1,445	100.00	3,549	100.00	13,647	100.00	20,331	100.00	439	100.00	40,281	100.00

Table 61: Injury severity by age grouping for older drivers and by sex - Western Australia Female

INJURED	254	71.95	597	81.56	1,688	87.42	7,250	89.84	10,313	89.12	173	85.22	20,275	88.69
KILLED OR SERIOUSLY INJURED	99	28.05	135	18.44	243	12.58	820	10.16	1,259	10.88	30	14.78	2,586	11.31
Total	353	100.00	732	100.00	1,931	100.00	8,070	100.00	11,572	100.00	203	100.00	22,861	100.00

Table 62: Injury severity by age grouping for older drivers and by sex - Western Australia Male

INJURED	360	70.04	552	78.63	1,331	83.50	4,668	84.93	7,021	81.08	186	84.16	14,118	82.15
KILLED OR SERIOUSLY INJURED	154	29.96	150	21.37	263	16.50	828	15.07	1,638	18.92	35	15.84	3,068	17.85
Total	514	100.00	702	100.00	1,594	100.00	5,496	100.00	8,659	100.00	221	100.00	17,186	100.00

Table 63: Injury severity by age grouping for older drivers - South Australia

	Age group												**Total**	
	75+ years		**65-74 years**		**55-64 years**		**35-54 years**		**0-34 years**		**Unknown**			
Injury Severity	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
INJURED	708	76.13	813	82.62	1,781	86.75	6,342	87.82	9,152	85.64	141	81.50	18,937	85.89
KILLED OR SERIOUSLY INJURED	222	23.87	171	17.38	272	13.25	880	12.18	1,535	14.36	32	18.50	3,112	14.11
Total	930	100.00	984	100.00	2,053	100.00	7,222	100.00	10,687	100.00	173	100.00	22,049	100.00

Table 64: Injury severity by age grouping for older drivers and by sex - South Australia Female

INJURED	284	77.38	406	85.29	972	90.25	3,729	91.40	5,157	90.14	56	86.15	10,604	89.97
KILLED OR SERIOUSLY INJURED	83	22.62	70	14.71	105	9.75	351	8.60	564	9.86	9	13.85	1,182	10.03
Total	367	100.00	476	100.00	1,077	100.00	4,080	100.00	5,721	100.00	65	100.00	11,786	100.00

Table 65: Injury severity by age grouping for older drivers and by sex - South Australia Male

INJURED	424	75.31	407	80.12	809	82.89	2,613	83.16	3,994	80.44	75	77.32	8,322	81.18
KILLED OR SERIOUSLY INJURED	139	24.69	101	19.88	167	17.11	529	16.84	971	19.56	22	22.68	1,929	18.82
Total	563	100.00	508	100.00	976	100.00	3,142	100.00	4,965	100.00	97	100.00	10,251	100.00

Table 66: Vehicle age groups by age grouping for older drivers- Australia

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	2,957	10.80	5,823	14.16	16,179	18.79	60,332	20.12	59,473	13.82	15,869	15.53	160633	16.28
3 to 5 years	2,961	10.81	5,404	13.14	12,469	14.48	42,634	14.22	48,510	11.27	11,907	11.65	123885	12.55
6 to 10 years	8,656	31.61	14,912	36.26	31,141	36.16	105749	35.26	142482	33.12	32,492	31.80	335432	33.99
11 to 15 years	6,377	23.29	8,329	20.25	15,430	17.92	53,731	17.92	102197	23.75	22,165	21.69	208229	21.10
16 years and over	6,434	23.49	6,659	16.19	10,898	12.65	37,448	12.49	77,585	18.03	19,745	19.32	158769	16.09
Total	27,385	100.00	41,127	100.00	86,117	100.00	299894	100.00	430247	100.00	102178	100.00	986948	100.00

Table 67: Vehicle age groups by age grouping for older drivers and by sex- Australia Female

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	1,044	10.77	2,166	14.63	6,009	17.75	24,969	19.13	26,178	15.18	3,227	16.62	63,593	16.70
3 to 5 years	1,056	10.89	2,039	13.77	4,939	14.59	19,405	14.87	20,629	11.96	2,556	13.16	50,624	13.30
6 to 10 years	3,192	32.93	5,554	37.52	13,192	38.97	50,115	38.40	61,788	35.84	6,869	35.37	140710	36.96
11 to 15 years	2,270	23.42	2,977	20.11	6,304	18.62	23,243	17.81	38,941	22.58	4,107	21.15	77,842	20.45
16 years and over	2,132	21.99	2,067	13.96	3,412	10.08	12,773	9.79	24,886	14.43	2,661	13.70	47,931	12.59
Total	9,694	100.00	14,803	100.00	33,856	100.00	130505	100.00	172422	100.00	19,420	100.00	380700	100.00

Table 68: Vehicle age groups by age grouping for older drivers and by sex- Australia Male

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	1,904	10.81	3,636	13.88	10,116	19.46	35,152	20.87	33,102	12.90	5,602	15.70	89,512	16.08
3 to 5 years	1,898	10.78	3,342	12.76	7,493	14.42	23,096	13.71	27,740	10.81	4,021	11.27	67,590	12.15
6 to 10 years	5,437	30.87	9,316	35.56	17,843	34.33	55,305	32.84	80,288	31.28	10,612	29.75	178801	32.13
11 to 15 years	4,081	23.17	5,330	20.35	9,074	17.46	30,325	18.00	63,001	24.55	7,729	21.67	119540	21.48
16 years and over	4,290	24.36	4,573	17.46	7,450	14.33	24,555	14.58	52,505	20.46	7,708	21.61	101081	18.16
Total	17,610	100.00	26,197	100.00	51,976	100.00	168433	100.00	256636	100.00	35,672	100.00	556524	100.00

Table 69: Vehicle age groups by age grouping for older drivers- New Zealand

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	227	8.41	302	9.94	577	10.59	1,739	8.89	1,119	3.32	105	6.67	4,069	6.16
3 to 5 years	203	7.52	237	7.80	442	8.11	1,311	6.70	871	2.58	113	7.18	3,177	4.81
6 to 10 years	804	29.80	997	32.82	1,738	31.90	5,831	29.80	7,445	22.07	364	23.13	17,179	26.01
11 to 15 years	820	30.39	904	29.76	1,786	32.78	7,022	35.89	13,669	40.53	527	33.48	24,728	37.43
16 years and over	644	23.87	598	19.68	906	16.63	3,665	18.73	10,625	31.50	465	29.54	16,903	25.59
Total	2,698	100.00	3,038	100.00	5,449	100.00	19,568	100.00	33,729	100.00	1,574	100.00	66,056	100.00

Table 70: Vehicle age groups by age grouping for older drivers and by sex- New Zealand Female

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	87	7.14	104	8.45	188	8.05	609	6.95	370	2.83	20	6.15	1,378	5.11
3 to 5 years	91	7.47	91	7.39	196	8.39	582	6.64	323	2.47	14	4.31	1,297	4.81
6 to 10 years	393	32.24	437	35.50	786	33.65	2,863	32.66	3,057	23.38	114	35.08	7,650	28.38
11 to 15 years	351	28.79	385	31.28	823	35.23	3,315	37.82	5,657	43.26	114	35.08	10,645	39.49
16 years and over	297	24.36	214	17.38	343	14.68	1,397	15.94	3,670	28.06	63	19.38	5,984	22.20
Total	1,219	100.00	1,231	100.00	2,336	100.00	8,766	100.00	13,077	100.00	325	100.00	26,954	100.00

Table 71: Vehicle age groups by age grouping for older drivers and by sex- New Zealand Male

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	139	9.42	198	10.98	389	12.50	1,130	10.47	747	3.62	63	9.50	2,666	6.93
3 to 5 years	112	7.59	146	8.09	246	7.90	729	6.76	547	2.65	42	6.33	1,822	4.74
6 to 10 years	409	27.71	559	30.99	951	30.56	2,962	27.46	4,377	21.22	132	19.91	9,390	24.41
11 to 15 years	469	31.78	518	28.71	963	30.94	3,700	34.30	8,003	38.80	228	34.39	13,881	36.08
16 years and over	347	23.51	383	21.23	563	18.09	2,267	21.01	6,951	33.70	198	29.86	10,709	27.84
Total	1,476	100.00	1,804	100.00	3,112	100.00	10,788	100.00	20,625	100.00	663	100.00	38,468	100.00

Table 72: Vehicle age groups by age grouping for older drivers- New South Wales

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	964	10.24	1,949	13.80	5,168	17.59	20,316	19.11	21,882	14.16	5,192	15.21	55,471	15.95
3 to 5 years	1,024	10.88	1,824	12.91	4,329	14.73	15,712	14.78	17,933	11.60	4,164	12.20	44,986	12.93
6 to 10 years	3,018	32.07	5,250	37.16	11,039	37.57	39,169	36.85	53,556	34.66	11,560	33.87	123592	35.53
11 to 15 years	2,306	24.51	2,979	21.09	5,422	18.45	19,408	18.26	36,941	23.91	7,433	21.78	74,489	21.41
16 years and over	2,098	22.30	2,126	15.05	3,428	11.67	11,694	11.00	24,218	15.67	5,783	16.94	49,347	14.18
Total	9,410	100.00	14,128	100.00	29,386	100.00	106299	100.00	154530	100.00	34,132	100.00	347885	100.00

Table 73: Vehicle age groups by age grouping for older drivers- Victoria

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	295	9.03	529	11.83	1,530	17.08	5,703	18.14	5,118	12.06	639	23.85	13,814	14.82
3 to 5 years	339	10.37	532	11.90	1,209	13.50	4,190	13.33	4,608	10.86	261	9.74	11,139	11.95
6 to 10 years	1,034	31.64	1,561	34.92	3,178	35.48	10,966	34.89	13,525	31.88	727	27.14	30,991	33.24
11 to 15 years	733	22.43	951	21.28	1,673	18.68	5,730	18.23	10,102	23.81	518	19.34	19,707	21.14
16 years and over	867	26.53	897	20.07	1,368	15.27	4,844	15.41	9,069	21.38	534	19.93	17,579	18.86
Total	3,268	100.00	4,470	100.00	8,958	100.00	31,433	100.00	42,422	100.00	2,679	100.00	93,230	100.00

Table 74: Vehicle age groups by age grouping for older drivers- Queensland

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	388	11.93	756	15.72	1,908	19.59	6,971	20.84	7,264	13.90	731	14.83	18,018	16.61
3 to 5 years	339	10.42	676	14.06	1,386	14.23	4,680	13.99	5,719	10.94	551	11.18	13,351	12.31
6 to 10 years	1,006	30.93	1,717	35.70	3,394	34.84	11,382	34.02	16,747	32.05	1,506	30.56	35,752	32.97
11 to 15 years	741	22.78	887	18.44	1,697	17.42	5,906	17.65	12,501	23.92	1,058	21.47	22,790	21.01
16 years and over	779	23.95	773	16.07	1,357	13.93	4,518	13.50	10,029	19.19	1,082	21.96	18,538	17.09
Total	3,253	100.00	4,809	100.00	9,742	100.00	33,457	100.00	52,260	100.00	4,928	100.00	108449	100.00

Table 75: Vehicle age groups by age grouping for older drivers- Western Australia

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	801	13.65	1,706	16.69	4,854	21.77	18,098	24.06	17,685	16.37	7,021	16.43	50,165	18.97
3 to 5 years	721	12.29	1,421	13.90	3,349	15.02	11,001	14.62	13,126	12.15	5,082	11.89	34,700	13.12
6 to 10 years	1,953	33.28	3,788	37.06	8,090	36.28	26,201	34.83	36,347	33.64	13,418	31.40	89,797	33.96
11 to 15 years	1,302	22.19	1,971	19.28	3,715	16.66	12,230	16.26	24,673	22.83	9,378	21.95	53,269	20.15
16 years and over	1,091	18.59	1,336	13.07	2,293	10.28	7,698	10.23	16,230	15.02	7,828	18.32	36,476	13.80
Total	5,868	100.00	10,222	100.00	22,301	100.00	75,228	100.00	108061	100.00	42,727	100.00	264407	100.00

Table 76: Vehicle age groups by age grouping for older drivers- South Australia

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	509	9.11	883	11.78	2,719	17.29	9,244	17.29	7,524	10.31	2,286	12.91	23,165	13.39
3 to 5 years	538	9.63	951	12.68	2,196	13.96	7,051	13.19	7,124	9.76	1,849	10.44	19,709	11.39
6 to 10 years	1,645	29.45	2,596	34.62	5,440	34.58	18,031	33.72	22,307	30.57	5,281	29.82	55,300	31.97
11 to 15 years	1,295	23.18	1,541	20.55	2,923	18.58	10,457	19.55	17,980	24.64	3,778	21.33	37,974	21.95
16 years and over	1,599	28.63	1,527	20.37	2,452	15.59	8,694	16.26	18,039	24.72	4,518	25.51	36,829	21.29
Total	5,586	100.00	7,498	100.00	15,730	100.00	53,477	100.00	72,974	100.00	17,712	100.00	172977	100.00

Table 77: Vehicle age groups by age grouping for older drivers and by sex- New South Wales Female

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	361	10.83	711	14.87	1,763	16.20	7,975	18.40	9,033	15.38	502	17.62	20,345	16.42
3 to 5 years	347	10.41	622	13.01	1,625	14.93	6,507	15.01	7,262	12.37	414	14.53	16,777	13.54
6 to 10 years	1,108	33.24	1,856	38.83	4,408	40.49	17,352	40.03	21,863	37.24	1,071	37.59	47,658	38.46
11 to 15 years	804	24.12	978	20.46	2,124	19.51	7,762	17.91	13,414	22.85	560	19.66	25,642	20.69
16 years and over	713	21.39	613	12.82	966	8.87	3,748	8.65	7,144	12.17	302	10.60	13,486	10.88
Total	3,333	100.00	4,780	100.00	10,886	100.00	43,344	100.00	58,716	100.00	2,849	100.00	123908	100.00

Table 78: Vehicle age groups by age grouping for older drivers and by sex- Victoria Female

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	102	8.58	198	12.10	572	16.47	2,250	16.29	2,268	13.05	86	15.75	5,476	14.40
3 to 5 years	126	10.60	205	12.53	475	13.68	1,922	13.92	1,941	11.17	71	13.00	4,740	12.46
6 to 10 years	387	32.55	586	35.82	1,315	37.87	5,293	38.32	6,032	34.70	201	36.81	13,814	36.32
11 to 15 years	279	23.47	355	21.70	669	19.27	2,598	18.81	3,960	22.78	116	21.25	7,977	20.97
16 years and over	295	24.81	292	17.85	441	12.70	1,749	12.66	3,182	18.31	72	13.19	6,031	15.86
Total	1,189	100.00	1,636	100.00	3,472	100.00	13,812	100.00	17,383	100.00	546	100.00	38,038	100.00

Table 79: Vehicle age groups by age grouping for older drivers and by sex- Queensland Female

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	126	10.62	289	15.33	727	17.96	3,041	19.37	3,310	15.76	16	26.23	7,509	17.11
3 to 5 years	135	11.38	285	15.12	586	14.48	2,377	15.14	2,426	11.55	2	3.28	5,811	13.24
6 to 10 years	396	33.39	665	35.28	1,526	37.71	5,832	37.15	7,247	34.51	10	16.39	15,676	35.73
11 to 15 years	263	22.18	368	19.52	724	17.89	2,751	17.52	4,784	22.78	14	22.95	8,904	20.29
16 years and over	266	22.43	278	14.75	484	11.96	1,698	10.82	3,233	15.40	19	31.15	5,978	13.62
Total	1,186	100.00	1,885	100.00	4,047	100.00	15,699	100.00	21,000	100.00	61	100.00	43,878	100.00

Table 80: Vehicle age groups by age grouping for older drivers and by sex-West Australia Female

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	285	13.79	667	17.10	1,973	20.90	8,059	22.92	8,345	17.89	2,256	17.03	21,585	19.54
3 to 5 years	268	12.97	589	15.10	1,434	15.19	5,453	15.51	6,171	13.23	1,740	13.14	15,655	14.17
6 to 10 years	702	33.98	1,497	38.38	3,683	39.02	13,306	37.84	16,895	36.22	4,711	35.57	40,794	36.93
11 to 15 years	466	22.56	724	18.56	1,589	16.83	5,634	16.02	9,938	21.30	2,827	21.34	21,178	19.17
16 years and over	345	16.70	423	10.85	760	8.05	2,709	7.70	5,299	11.36	1,711	12.92	11,247	10.18
Total	2,066	100.00	3,900	100.00	9,439	100.00	35,161	100.00	46,648	100.00	13,245	100.00	110459	100.00

Table 81: Vehicle age groups by age grouping for older drivers and by sex-South Australia Female

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	170	8.85	301	11.57	974	16.20	3,644	16.20	3,222	11.24	367	13.50	8,678	13.47
3 to 5 years	180	9.38	338	12.99	819	13.62	3,146	13.99	2,829	9.87	329	12.10	7,641	11.86
6 to 10 years	599	31.20	950	36.51	2,260	37.59	8,332	37.05	9,751	34.01	876	32.22	22,768	35.34
11 to 15 years	458	23.85	552	21.21	1,198	19.93	4,498	20.00	6,845	23.87	590	21.70	14,141	21.95
16 years and over	513	26.72	461	17.72	761	12.66	2,869	12.76	6,028	21.02	557	20.49	11,189	17.37
Total	1,920	100.00	2,602	100.00	6,012	100.00	22,489	100.00	28,675	100.00	2,719	100.00	64,417	100.00

Table 82: Vehicle age groups by age grouping for older drivers and by sex-New South Wales Male

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	603	9.92	1,238	13.25	3,403	18.42	12,331	19.62	12,838	13.42	854	17.10	31,267	15.84
3 to 5 years	677	11.14	1,202	12.87	2,699	14.61	9,194	14.63	10,658	11.14	640	12.82	25,070	12.70
6 to 10 years	1,910	31.44	3,392	36.31	6,625	35.86	21,775	34.65	31,651	33.08	1,676	33.56	67,029	33.95
11 to 15 years	1,501	24.70	1,999	21.40	3,292	17.82	11,625	18.50	23,487	24.55	1,026	20.54	42,930	21.75
16 years and over	1,385	22.79	1,512	16.18	2,456	13.29	7,924	12.61	17,053	17.82	798	15.98	31,128	15.77
Total	6,076	100.00	9,343	100.00	18,475	100.00	62,849	100.00	95,687	100.00	4,994	100.00	197424	100.00

Table 83: Vehicle age groups by age grouping for older drivers and by sex- Victoria Male

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	192	9.27	331	11.71	955	17.46	3,445	19.59	2,837	11.36	112	14.18	7,872	14.66
3 to 5 years	213	10.28	326	11.53	733	13.40	2,259	12.85	2,655	10.63	80	10.13	6,266	11.67
6 to 10 years	644	31.08	972	34.38	1,857	33.96	5,660	32.19	7,475	29.94	228	28.86	16,836	31.35
11 to 15 years	451	21.77	595	21.05	999	18.27	3,127	17.78	6,130	24.55	193	24.43	11,495	21.40
16 years and over	572	27.61	603	21.33	925	16.91	3,094	17.59	5,870	23.51	177	22.41	11,241	20.93
Total	2,072	100.00	2,827	100.00	5,469	100.00	17,585	100.00	24,967	100.00	790	100.00	53,710	100.00

Table 84: Vehicle age groups by age grouping for older drivers and by sex- Queensland Male

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	262	12.68	467	15.97	1,181	20.74	3,930	22.14	3,953	12.65	42	11.08	9,835	16.37
3 to 5 years	204	9.87	391	13.37	800	14.05	2,303	12.97	3,293	10.54	30	7.92	7,021	11.69
6 to 10 years	610	29.51	1,052	35.98	1,868	32.80	5,549	31.26	9,498	30.39	91	24.01	18,668	31.08
11 to 15 years	478	23.13	519	17.75	973	17.09	3,153	17.76	7,716	24.69	88	23.22	12,927	21.52
16 years and over	513	24.82	495	16.93	873	15.33	2,818	15.87	6,795	21.74	128	33.77	11,622	19.35
Total	2,067	100.00	2,924	100.00	5,695	100.00	17,753	100.00	31,255	100.00	379	100.00	60,073	100.00

Table 85: Vehicle age groups by age grouping for older drivers and by sex- Western Australia Male

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	510	13.66	1,019	16.40	2,834	22.44	9,861	25.06	9,196	15.18	3,842	16.42	27,262	18.69
3 to 5 years	446	11.95	811	13.05	1,886	14.93	5,446	13.84	6,849	11.31	2,658	11.36	18,096	12.40
6 to 10 years	1,229	32.92	2,256	36.31	4,317	34.18	12,654	32.16	19,150	31.62	6,929	29.61	46,535	31.90
11 to 15 years	814	21.81	1,229	19.78	2,086	16.52	6,483	16.48	14,568	24.05	5,157	22.03	30,337	20.79
16 years and over	734	19.66	899	14.47	1,507	11.93	4,905	12.47	10,804	17.84	4,818	20.59	23,667	16.22
Total	3,733	100.00	6,214	100.00	12,630	100.00	39,349	100.00	60,567	100.00	23,404	100.00	145897	100.00

Table 86: Vehicle age groups by age grouping for older drivers and by sex- South Australia Male

Vehicle Age Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Less than 3 years	337	9.20	581	11.88	1,743	17.96	5,585	18.08	4,278	9.69	752	12.32	13,276	13.35
3 to 5 years	358	9.78	612	12.52	1,375	14.17	3,894	12.60	4,285	9.70	613	10.04	11,137	11.20
6 to 10 years	1,044	28.51	1,644	33.63	3,176	32.72	9,667	31.29	12,514	28.34	1,688	27.65	29,733	29.91
11 to 15 years	837	22.86	988	20.21	1,724	17.76	5,937	19.22	11,100	25.14	1,265	20.72	21,851	21.98
16 years and over	1,086	29.66	1,064	21.76	1,689	17.40	5,814	18.82	11,983	27.14	1,787	29.27	23,423	23.56
Total	3,662	100.00	4,889	100.00	9,707	100.00	30,897	100.00	44,160	100.00	6,105	100.00	99,420	100.00

Table 87: Market group by age grouping for older drivers - Australia

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	6,659	24.30	9,082	22.08	19,216	22.30	66,268	22.08	104,760	24.33	20,714	20.23	226,699	22.95
Commercial - Ute	597	2.18	1,851	4.50	5,629	6.53	22,164	7.39	30,806	7.16	8,115	7.93	69,162	7.00
Commercial - Van	147	0.54	457	1.11	1,592	1.85	5,127	1.71	4,434	1.03	1,742	1.70	13,499	1.37
Large	5,922	21.61	10,893	26.48	21,988	25.52	79,057	26.35	98,214	22.81	26,432	25.82	242,506	24.55
Medium	3,200	11.68	4,219	10.25	8,258	9.58	26,102	8.70	35,064	8.15	9,465	9.25	86,308	8.74
People Mover	76	0.28	273	0.66	926	1.07	5,684	1.89	2,877	0.67	1,361	1.33	11,197	1.13
Small	7,477	27.29	8,663	21.06	15,975	18.54	48,602	16.20	99,836	23.19	19,112	18.67	199,665	20.22
Light	2,297	8.38	2,359	5.73	4,481	5.20	13,930	4.64	29,716	6.90	5,520	5.39	58,303	5.90
SUV - Compact	491	1.79	1,340	3.26	3,080	3.57	12,421	4.14	11,064	2.57	3,196	3.12	31,592	3.20
SUV - Large	325	1.19	1,196	2.91	2,982	3.46	10,988	3.66	8,044	1.87	4,003	3.91	27,538	2.79
SUV - Medium	207	0.76	808	1.96	2,038	2.37	9,724	3.24	5,680	1.32	2,718	2.65	21,175	2.14
Total	29,009	100.00	41,275	100.00	86,545	100.00	301,216	100.00	432,415	100.00	108,307	100.00	998,767	100.00

Table 88: Market group by age grouping for older drivers and by sex - Australia Female

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	2,313	23.85	2,866	19.36	6,193	18.28	23,781	18.21	36,889	21.38	2,315	11.91	74,357	19.52
Commercial - Ute	49	0.51	152	1.03	552	1.63	2,782	2.13	3,616	2.10	494	2.54	7,645	2.01
Commercial - Van	22	0.23	38	0.26	146	0.43	588	0.45	412	0.24	103	0.53	1,309	0.34
Large	1,135	11.70	2,860	19.32	7,326	21.63	32,400	24.81	30,254	17.54	4,687	24.12	78,662	20.65
Medium	1,030	10.62	1,671	11.29	3,962	11.70	13,042	9.99	13,657	7.92	1,999	10.29	35,361	9.28
People Mover	10	0.10	44	0.30	222	0.66	2,885	2.21	1,083	0.63	275	1.42	4,519	1.19
Small	3,612	37.24	4,885	32.99	9,942	29.35	30,534	23.39	55,780	32.34	5,621	28.93	110,374	28.98
Light	1,344	13.86	1,504	10.16	2,917	8.61	8,865	6.79	19,740	11.44	1,753	9.02	36,123	9.48
SUV - Compact	129	1.33	487	3.29	1,463	4.32	7,507	5.75	6,431	3.73	938	4.83	16,955	4.45
SUV - Large	28	0.29	154	1.04	590	1.74	3,677	2.82	2,150	1.25	615	3.17	7,214	1.89
SUV - Medium	27	0.28	146	0.99	561	1.66	4,507	3.45	2,494	1.45	631	3.25	8,366	2.20
Total	9,699	100.00	14,807	100.00	33,874	100.00	130,568	100.00	172,506	100.00	19,431	100.00	380,885	100.00

Table 89: Market group by age grouping for older drivers and by sex - Australia Male

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	4,335	24.61	6,197	23.65	12,979	24.96	42,335	25.12	67,664	26.35	6,594	18.47	140,104	25.16
Commercial - Ute	544	3.09	1,690	6.45	5,056	9.72	19,321	11.46	27,121	10.56	4,392	12.31	58,124	10.44
Commercial - Van	125	0.71	419	1.60	1,444	2.78	4,522	2.68	4,010	1.56	872	2.44	11,392	2.05
Large	4,771	27.08	7,998	30.52	14,591	28.06	46,400	27.53	67,677	26.35	10,222	28.64	151,659	27.23
Medium	2,165	12.29	2,530	9.65	4,267	8.20	12,946	7.68	21,278	8.29	3,000	8.41	46,186	8.29
People Mover	64	0.36	228	0.87	700	1.35	2,780	1.65	1,786	0.70	487	1.36	6,045	1.09
Small	3,833	21.76	3,757	14.34	5,964	11.47	17,899	10.62	43,791	17.05	4,891	13.70	80,135	14.39
Light	945	5.36	847	3.23	1,542	2.97	5,020	2.98	9,850	3.84	1,224	3.43	19,428	3.49
SUV - Compact	361	2.05	845	3.22	1,611	3.10	4,862	2.88	4,595	1.79	827	2.32	13,101	2.35
SUV - Large	296	1.68	1,037	3.96	2,381	4.58	7,273	4.32	5,866	2.28	2,098	5.88	18,951	3.40
SUV - Medium	179	1.02	659	2.51	1,471	2.83	5,185	3.08	3,162	1.23	1,085	3.04	11,741	2.11
Total	17,618	100.00	26,207	100.00	52,006	100.00	168,543	100.00	256,800	100.00	35,692	100.00	556,866	100.00

Table 90: Market group by age grouping for older drivers - New Zealand

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	873	32.33	976	32.12	1,781	32.68	6,662	34.02	12,091	35.84	523	33.23	22,906	34.67
Commercial - Ute	37	1.37	63	2.07	200	3.67	683	3.49	673	2.00	36	2.29	1,692	2.56
Commercial - Van	17	0.63	77	2.53	191	3.50	650	3.32	639	1.89	32	2.03	1,606	2.43
Large	182	6.74	345	11.35	800	14.68	2,980	15.22	3,599	10.67	316	20.08	8,222	12.44
Medium	321	11.89	516	16.98	892	16.37	3,496	17.85	6,437	19.08	266	16.90	11,928	18.05
People Mover	28	1.04	46	1.51	128	2.35	707	3.61	567	1.68	33	2.10	1,509	2.28
Small	754	27.93	621	20.43	975	17.89	3,072	15.69	7,871	23.33	273	17.34	13,566	20.53
Light	457	16.93	304	10.00	346	6.35	821	4.19	1,409	4.18	61	3.88	3,398	5.14
SUV - Compact	23	0.85	58	1.91	79	1.45	231	1.18	267	0.79	17	1.08	675	1.02
SUV - Large	2	0.07	10	0.33	22	0.40	97	0.50	57	0.17	6	0.38	194	0.29
SUV - Medium	6	0.22	23	0.76	36	0.66	182	0.93	124	0.37	11	0.70	382	0.58
Total	2,700	100.00	3,039	100.00	5,450	100.00	19,581	100.00	33,734	100.00	1,574	100.00	66,078	100.00

Table 91: Market group by age grouping for older drivers and by sex - New Zealand Female

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	401	32.90	403	32.71	771	32.99	3,028	34.51	4,950	37.85	106	32.62	9,659	35.82
Commercial - Ute	4	0.33	9	0.73	19	0.81	103	1.17	96	0.73	2	0.62	233	0.86
Commercial - Van	2	0.16	9	0.73	32	1.37	143	1.63	110	0.84	3	0.92	299	1.11
Large	28	2.30	81	6.57	221	9.46	1,049	11.96	995	7.61	36	11.08	2,410	8.94
Medium	94	7.71	158	12.82	385	16.47	1,614	18.40	2,282	17.45	57	17.54	4,590	17.02
People Mover	8	0.66	10	0.81	37	1.58	335	3.82	201	1.54	6	1.85	597	2.21
Small	371	30.43	319	25.89	571	24.43	1,750	19.95	3,492	26.70	79	24.31	6,582	24.41
Light	303	24.86	201	16.31	250	10.70	525	5.98	762	5.83	26	8.00	2,067	7.67
SUV - Compact	7	0.57	32	2.60	41	1.75	126	1.44	131	1.00	6	1.85	343	1.27
SUV - Large	.	.	3	0.24	6	0.26	38	0.43	20	0.15	1	0.31	68	0.25
SUV - Medium	1	0.08	7	0.57	4	0.17	62	0.71	40	0.31	3	0.92	117	0.43
Total	1,219	100.00	1,232	100.00	2,337	100.00	8,773	100.00	13,079	100.00	325	100.00	26,965	100.00

Table 92: Market group by age grouping for older drivers and by sex - New Zealand Male

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	470	31.80	572	31.71	1,010	32.46	3,629	33.62	7,124	34.54	225	33.94	13,030	33.86
Commercial - Ute	33	2.23	54	2.99	181	5.82	580	5.37	577	2.80	24	3.62	1,449	3.77
Commercial - Van	15	1.01	68	3.77	159	5.11	507	4.70	529	2.56	19	2.87	1,297	3.37
Large	154	10.42	262	14.52	579	18.61	1,926	17.84	2,600	12.60	116	17.50	5,637	14.65
Medium	227	15.36	358	19.84	507	16.29	1,880	17.42	4,154	20.14	117	17.65	7,243	18.82
People Mover	20	1.35	36	2.00	91	2.92	370	3.43	366	1.77	12	1.81	895	2.33
Small	382	25.85	302	16.74	404	12.98	1,322	12.25	4,374	21.20	118	17.80	6,902	17.94
Light	154	10.42	103	5.71	95	3.05	296	2.74	647	3.14	21	3.17	1,316	3.42
SUV - Compact	16	1.08	26	1.44	38	1.22	105	0.97	136	0.66	2	0.30	323	0.84
SUV - Large	2	0.14	7	0.39	16	0.51	59	0.55	37	0.18	3	0.45	124	0.32
SUV - Medium	5	0.34	16	0.89	32	1.03	120	1.11	84	0.41	6	0.90	263	0.68
Total	1,478	100.00	1,804	100.00	3,112	100.00	10,794	100.00	20,628	100.00	663	100.00	38,479	100.00

Table 93: Market group by age grouping for older drivers - New South Wales

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	2,323	24.65	3,426	24.23	7,167	24.35	25,893	24.32	43,771	28.28	9,195	26.78	91,775	26.33
Commercial - Ute	182	1.93	600	4.24	1,756	5.97	7,115	6.68	9,919	6.41	2,024	5.90	21,596	6.20
Commercial - Van	47	0.50	175	1.24	583	1.98	2,120	1.99	1,934	1.25	571	1.66	5,430	1.56
Large	1,970	20.91	3,667	25.93	7,251	24.63	26,221	24.63	28,700	18.54	7,524	21.92	75,333	21.61
Medium	1,183	12.55	1,533	10.84	2,991	10.16	10,121	9.51	13,510	8.73	3,431	9.99	32,769	9.40
People Mover	20	0.21	97	0.69	353	1.20	2,433	2.29	1,207	0.78	480	1.40	4,590	1.32
Small	2,665	28.28	2,946	20.83	5,419	18.41	16,932	15.90	37,416	24.17	6,643	19.35	72,021	20.66
Light	741	7.86	721	5.10	1,438	4.89	4,622	4.34	10,561	6.82	1,941	5.65	20,024	5.74
SUV - Compact	172	1.83	453	3.20	1,111	3.77	4,723	4.44	4,207	2.72	1,139	3.32	11,805	3.39
SUV - Large	75	0.80	293	2.07	764	2.60	2,933	2.75	1,814	1.17	701	2.04	6,580	1.89
SUV - Medium	45	0.48	231	1.63	601	2.04	3,359	3.15	1,739	1.12	683	1.99	6,658	1.91
Total	9,423	100.00	14,142	100.00	29,434	100.00	106,472	100.00	154,778	100.00	34,332	100.00	348,581	100.00

Table 94: Market group by age grouping for older drivers - Victoria

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	1,714	52.45	2,100	46.98	3,966	44.27	13,456	42.81	20,833	49.11	980	36.58	43,049	46.18
Commercial - Ute	39	1.19	124	2.77	367	4.10	1,458	4.64	1,684	3.97	151	5.64	3,823	4.10
Commercial - Van	18	0.55	45	1.01	183	2.04	562	1.79	419	0.99	32	1.19	1,259	1.35
Large	504	15.42	958	21.43	1,825	20.37	6,842	21.77	8,013	18.89	645	24.08	18,787	20.15
Medium	272	8.32	328	7.34	697	7.78	2,071	6.59	2,373	5.59	205	7.65	5,946	6.38
People Mover	8	0.24	11	0.25	44	0.49	394	1.25	185	0.44	18	0.67	660	0.71
Small	508	15.54	546	12.21	1,084	12.10	3,283	10.44	5,831	13.75	401	14.97	11,653	12.50
Light	143	4.38	146	3.27	260	2.90	809	2.57	1,529	3.60	94	3.51	2,981	3.20
SUV - Compact	30	0.92	80	1.79	190	2.12	880	2.80	703	1.66	73	2.72	1,956	2.10
SUV - Large	16	0.49	85	1.90	203	2.27	891	2.83	476	1.12	47	1.75	1,718	1.84
SUV - Medium	16	0.49	47	1.05	139	1.55	787	2.50	376	0.89	33	1.23	1,398	1.50
Total	3,268	100.00	4,470	100.00	8,958	100.00	31,433	100.00	42,422	100.00	2,679	100.00	93,230	100.00

Table 95: Market group by age grouping for older drivers - Queensland

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	892	27.42	1,095	22.77	2,232	22.91	7,424	22.19	12,721	24.34	1,225	24.86	25,589	23.60
Commercial - Ute	131	4.03	354	7.36	1,031	10.58	3,983	11.90	6,146	11.76	530	10.75	12,175	11.23
Commercial - Van	18	0.55	40	0.83	133	1.37	359	1.07	355	0.68	63	1.28	968	0.89
Large	651	20.01	1,225	25.47	2,560	26.28	8,726	26.08	12,478	23.88	1,228	24.92	26,868	24.77
Medium	385	11.84	480	9.98	849	8.71	2,658	7.94	4,115	7.87	446	9.05	8,933	8.24
People Mover	9	0.28	20	0.42	67	0.69	450	1.35	211	0.40	39	0.79	796	0.73
Small	764	23.49	858	17.84	1,422	14.60	4,520	13.51	9,160	17.53	755	15.32	17,479	16.12
Light	261	8.02	254	5.28	481	4.94	1,464	4.38	3,600	6.89	268	5.44	6,328	5.84
SUV - Compact	62	1.91	196	4.08	349	3.58	1,356	4.05	1,353	2.59	129	2.62	3,445	3.18
SUV - Large	53	1.63	202	4.20	437	4.49	1,603	4.79	1,484	2.84	166	3.37	3,945	3.64
SUV - Medium	27	0.83	85	1.77	181	1.86	914	2.73	637	1.22	79	1.60	1,923	1.77
Total	3,253	100.00	4,809	100.00	9,742	100.00	33,457	100.00	52,260	100.00	4,928	100.00	108,449	100.00

Table 96: Market group by age grouping for older drivers - Western Australia

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	430	7.33	835	8.17	2,120	9.51	6,658	8.85	9,657	8.94	4,628	10.83	24,328	9.20
Commercial - Ute	157	2.68	526	5.15	1,601	7.18	6,374	8.47	9,260	8.57	4,386	10.27	22,304	8.44
Commercial - Van	38	0.65	125	1.22	375	1.68	1,236	1.64	969	0.90	834	1.95	3,577	1.35
Large	1,424	24.27	2,791	27.30	6,026	27.02	21,292	28.30	28,501	26.37	11,859	27.76	71,893	27.19
Medium	723	12.32	1,130	11.05	2,268	10.17	6,967	9.26	9,209	8.52	3,869	9.06	24,166	9.14
People Mover	26	0.44	100	0.98	314	1.41	1,629	2.17	850	0.79	634	1.48	3,553	1.34
Small	2,046	34.87	2,772	27.12	5,295	23.74	15,647	20.80	31,558	29.20	8,441	19.76	65,759	24.87
Light	662	11.28	781	7.64	1,504	6.74	4,538	6.03	9,011	8.34	2,340	5.48	18,836	7.12
SUV - Compact	150	2.56	426	4.17	928	4.16	3,681	4.89	3,398	3.14	1,431	3.35	10,014	3.79
SUV - Large	126	2.15	428	4.19	1,123	5.04	4,041	5.37	3,457	3.20	2,718	6.36	11,893	4.50
SUV - Medium	86	1.47	308	3.01	747	3.35	3,165	4.21	2,191	2.03	1,587	3.71	8,084	3.06
Total	5,868	100.00	10,222	100.00	22,301	100.00	75,228	100.00	108,061	100.00	42,727	100.00	264,407	100.00

Table 97: Market group by age grouping for older drivers - South Australia

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	1,300	23.27	1,626	21.69	3,731	23.72	12,837	24.00	17,778	24.36	4,686	26.46	41,958	24.26
Commercial - Ute	88	1.58	247	3.29	874	5.56	3,234	6.05	3,797	5.20	1,024	5.78	9,264	5.36
Commercial - Van	26	0.47	72	0.96	318	2.02	850	1.59	757	1.04	242	1.37	2,265	1.31
Large	1,373	24.58	2,252	30.03	4,326	27.50	15,976	29.87	20,522	28.12	5,176	29.22	49,625	28.69
Medium	637	11.40	748	9.98	1,453	9.24	4,285	8.01	5,857	8.03	1,514	8.55	14,494	8.38
People Mover	13	0.23	45	0.60	148	0.94	778	1.45	424	0.58	190	1.07	1,598	0.92
Small	1,494	26.75	1,541	20.55	2,755	17.51	8,220	15.37	15,871	21.75	2,872	16.21	32,753	18.93
Light	490	8.77	457	6.09	798	5.07	2,497	4.67	5,015	6.87	877	4.95	10,134	5.86
SUV - Compact	77	1.38	185	2.47	502	3.19	1,781	3.33	1,403	1.92	424	2.39	4,372	2.53
SUV - Large	55	0.98	188	2.51	455	2.89	1,520	2.84	813	1.11	371	2.09	3,402	1.97
SUV - Medium	33	0.59	137	1.83	370	2.35	1,499	2.80	737	1.01	336	1.90	3,112	1.80
Total	5,586	100.00	7,498	100.00	15,730	100.00	53,477	100.00	72,974	100.00	17,712	100.00	172,977	100.00

Table 98: Market group by age grouping for older drivers and by sex - New South Wales Female

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	781	23.40	1,003	20.97	2,226	20.41	8,983	20.69	14,756	25.10	651	22.76	28,400	22.89
Commercial - Ute	11	0.33	44	0.92	159	1.46	783	1.80	945	1.61	43	1.50	1,985	1.60
Commercial - Van	8	0.24	16	0.33	48	0.44	195	0.45	125	0.21	13	0.45	405	0.33
Large	387	11.59	878	18.35	2,163	19.84	9,638	22.20	8,707	14.81	564	19.72	22,337	18.00
Medium	361	10.81	550	11.50	1,313	12.04	4,588	10.57	4,844	8.24	304	10.63	11,960	9.64
People Mover	3	0.09	14	0.29	95	0.87	1,197	2.76	460	0.78	43	1.50	1,812	1.46
Small	1,273	38.14	1,600	33.44	3,173	29.10	9,948	22.92	18,720	31.84	773	27.03	35,487	28.60
Light	447	13.39	452	9.45	919	8.43	2,726	6.28	6,569	11.17	236	8.25	11,349	9.15
SUV - Compact	50	1.50	155	3.24	494	4.53	2,751	6.34	2,315	3.94	138	4.83	5,903	4.76
SUV - Large	10	0.30	30	0.63	154	1.41	1,068	2.46	576	0.98	40	1.40	1,878	1.51
SUV - Medium	7	0.21	42	0.88	160	1.47	1,530	3.52	783	1.33	55	1.92	2,577	2.08
Total	3,338	100.00	4,784	100.00	10,904	100.00	43,407	100.00	58,800	100.00	2,860	100.00	124,093	100.00

Table 99: Market group by age grouping for older drivers and by sex - Victoria Female

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	637	53.57	759	46.39	1,445	41.62	5,404	39.13	7,989	45.96	115	21.06	16,349	42.98
Commercial - Ute	2	0.17	8	0.49	31	0.89	172	1.25	196	1.13	5	0.92	414	1.09
Commercial - Van	1	0.08	3	0.18	12	0.35	67	0.49	44	0.25	2	0.37	129	0.34
Large	102	8.58	246	15.04	611	17.60	2,888	20.91	2,478	14.26	105	19.23	6,430	16.90
Medium	89	7.49	128	7.82	315	9.07	1,084	7.85	1,042	5.99	51	9.34	2,709	7.12
People Mover	1	0.08	3	0.18	10	0.29	214	1.55	71	0.41	6	1.10	305	0.80
Small	268	22.54	340	20.78	710	20.45	2,167	15.69	3,695	21.26	180	32.97	7,360	19.35
Light	81	6.81	106	6.48	169	4.87	545	3.95	1,111	6.39	47	8.61	2,059	5.41
SUV - Compact	7	0.59	29	1.77	87	2.51	554	4.01	445	2.56	23	4.21	1,145	3.01
SUV - Large	.	.	5	0.31	43	1.24	335	2.43	138	0.79	7	1.28	528	1.39
SUV - Medium	1	0.08	9	0.55	39	1.12	382	2.77	174	1.00	5	0.92	610	1.60
Total	1,189	100.00	1,636	100.00	3,472	100.00	13,812	100.00	17,383	100.00	546	100.00	38,038	100.00

Table 100: Market group by age grouping for older drivers and by sex - Queensland Female

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	317	26.73	412	21.86	920	22.73	3,557	22.66	5,491	26.15	23	37.70	10,720	24.43
Commercial - Ute	10	0.84	37	1.96	105	2.59	538	3.43	784	3.73	5	8.20	1,479	3.37
Commercial - Van	1	0.08	5	0.27	11	0.27	47	0.30	28	0.13	.	.	92	0.21
Large	140	11.80	360	19.10	921	22.76	3,878	24.70	3,929	18.71	14	22.95	9,242	21.06
Medium	128	10.79	227	12.04	472	11.66	1,471	9.37	1,658	7.90	2	3.28	3,958	9.02
People Mover	1	0.08	3	0.16	21	0.52	272	1.73	106	0.50	.	.	403	0.92
Small	410	34.57	523	27.75	953	23.55	3,036	19.34	5,051	24.05	10	16.39	9,983	22.75
Light	154	12.98	168	8.91	327	8.08	1,002	6.38	2,483	11.82	5	8.20	4,139	9.43
SUV - Compact	12	1.01	93	4.93	184	4.55	874	5.57	819	3.90	1	1.64	1,983	4.52
SUV - Large	6	0.51	33	1.75	78	1.93	545	3.47	360	1.71	.	.	1,022	2.33
SUV - Medium	7	0.59	24	1.27	55	1.36	479	3.05	291	1.39	1	1.64	857	1.95
Total	1,186	100.00	1,885	100.00	4,047	100.00	15,699	100.00	21,000	100.00	61	100.00	43,878	100.00

Table 101: Market group by age grouping for older drivers and by sex - Western Australia Female

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	144	6.97	259	6.64	682	7.23	2,414	6.87	3,416	7.32	1,091	8.24	8,006	7.25
Commercial - Ute	16	0.77	48	1.23	173	1.83	901	2.56	1,279	2.74	387	2.92	2,804	2.54
Commercial - Van	4	0.19	10	0.26	40	0.42	192	0.55	134	0.29	74	0.56	454	0.41
Large	254	12.29	796	20.41	2,132	22.59	9,256	26.32	8,960	19.21	3,241	24.47	24,639	22.31
Medium	248	12.00	467	11.97	1,129	11.96	3,670	10.44	3,808	8.16	1,377	10.40	10,699	9.69
People Mover	4	0.19	18	0.46	66	0.70	830	2.36	307	0.66	195	1.47	1,420	1.29
Small	964	46.66	1,567	40.18	3,335	35.33	9,983	28.39	18,852	40.41	3,940	29.75	38,641	34.98
Light	378	18.30	476	12.21	982	10.40	2,914	8.29	6,115	13.11	1,235	9.32	12,100	10.95
SUV - Compact	38	1.84	148	3.79	462	4.89	2,232	6.35	1,989	4.26	666	5.03	5,535	5.01
SUV - Large	6	0.29	61	1.56	220	2.33	1,296	3.69	851	1.82	528	3.99	2,962	2.68
SUV - Medium	10	0.48	50	1.28	218	2.31	1,473	4.19	937	2.01	511	3.86	3,199	2.90
Total	2,066	100.00	3,900	100.00	9,439	100.00	35,161	100.00	46,648	100.00	13,245	100.00	110,459	100.00

Table 102: Market group by age grouping for older drivers and by sex - South Australia Female

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	434	22.60	433	16.64	920	15.30	3,423	15.22	5,237	18.26	435	16.00	10,882	16.89
Commercial - Ute	10	0.52	15	0.58	84	1.40	388	1.73	412	1.44	54	1.99	963	1.49
Commercial - Van	8	0.42	4	0.15	35	0.58	87	0.39	81	0.28	14	0.51	229	0.36
Large	252	13.13	580	22.29	1,499	24.93	6,740	29.97	6,180	21.55	763	28.06	16,014	24.86
Medium	204	10.63	299	11.49	733	12.19	2,229	9.91	2,305	8.04	265	9.75	6,035	9.37
People Mover	1	0.05	6	0.23	30	0.50	372	1.65	139	0.48	31	1.14	579	0.90
Small	697	36.30	855	32.86	1,771	29.46	5,400	24.01	9,462	33.00	718	26.41	18,903	29.34
Light	284	14.79	302	11.61	520	8.65	1,678	7.46	3,462	12.07	230	8.46	6,476	10.05
SUV - Compact	22	1.15	62	2.38	236	3.93	1,096	4.87	863	3.01	110	4.05	2,389	3.71
SUV - Large	6	0.31	25	0.96	95	1.58	433	1.93	225	0.78	40	1.47	824	1.28
SUV - Medium	2	0.10	21	0.81	89	1.48	643	2.86	309	1.08	59	2.17	1,123	1.74
Total	1,920	100.00	2,602	100.00	6,012	100.00	22,489	100.00	28,675	100.00	2,719	100.00	64,417	100.00

Table 103: Market group by age grouping for older drivers and by sex - New South Wales Male

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	1,542	25.35	2,423	25.91	4,937	26.68	16,888	26.82	28,986	30.24	1,431	28.54	56,207	28.42
Commercial - Ute	171	2.81	556	5.94	1,596	8.62	6,328	10.05	8,970	9.36	433	8.64	18,054	9.13
Commercial - Van	39	0.64	159	1.70	535	2.89	1,923	3.05	1,809	1.89	119	2.37	4,584	2.32
Large	1,582	26.00	2,786	29.79	5,080	27.45	16,555	26.29	19,959	20.82	1,253	24.99	47,215	23.87
Medium	822	13.51	982	10.50	1,675	9.05	5,515	8.76	8,651	9.03	459	9.15	18,104	9.15
People Mover	17	0.28	83	0.89	258	1.39	1,234	1.96	745	0.78	63	1.26	2,400	1.21
Small	1,392	22.88	1,345	14.38	2,241	12.11	6,966	11.06	18,675	19.48	708	14.12	31,327	15.84
Light	294	4.83	269	2.88	515	2.78	1,893	3.01	3,980	4.15	198	3.95	7,149	3.61
SUV - Compact	122	2.01	298	3.19	617	3.33	1,967	3.12	1,887	1.97	129	2.57	5,020	2.54
SUV - Large	65	1.07	263	2.81	610	3.30	1,864	2.96	1,234	1.29	121	2.41	4,157	2.10
SUV - Medium	38	0.62	189	2.02	441	2.38	1,826	2.90	955	1.00	100	1.99	3,549	1.79
Total	6,084	100.00	9,353	100.00	18,505	100.00	62,959	100.00	95,851	100.00	5,014	100.00	197,766	100.00

Table 104: Market group by age grouping for older drivers and by sex - Victoria Male

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	1,076	51.93	1,339	47.36	2,518	46.04	8,038	45.71	12,813	51.32	263	33.29	26,047	48.50
Commercial - Ute	37	1.79	116	4.10	335	6.13	1,284	7.30	1,486	5.95	66	8.35	3,324	6.19
Commercial - Van	17	0.82	42	1.49	170	3.11	495	2.81	374	1.50	13	1.65	1,111	2.07
Large	400	19.31	711	25.15	1,212	22.16	3,943	22.42	5,519	22.11	225	28.48	12,010	22.36
Medium	183	8.83	198	7.00	381	6.97	986	5.61	1,326	5.31	73	9.24	3,147	5.86
People Mover	7	0.34	8	0.28	34	0.62	180	1.02	114	0.46	5	0.63	348	0.65
Small	236	11.39	205	7.25	365	6.67	1,113	6.33	2,125	8.51	85	10.76	4,129	7.69
Light	62	2.99	39	1.38	91	1.66	264	1.50	415	1.66	12	1.52	883	1.64
SUV - Compact	23	1.11	51	1.80	103	1.88	325	1.85	257	1.03	18	2.28	777	1.45
SUV - Large	16	0.77	80	2.83	160	2.93	554	3.15	337	1.35	20	2.53	1,167	2.17
SUV - Medium	15	0.72	38	1.34	100	1.83	403	2.29	201	0.81	10	1.27	767	1.43
Total	2,072	100.00	2,827	100.00	5,469	100.00	17,585	100.00	24,967	100.00	790	100.00	53,710	100.00

Table 105: Market group by age grouping for older drivers and by sex - Queensland Male

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	575	27.82	683	23.36	1,312	23.04	3,865	21.77	7,229	23.13	88	23.22	13,752	22.89
Commercial - Ute	121	5.85	317	10.84	926	16.26	3,444	19.40	5,362	17.16	52	13.72	10,222	17.02
Commercial - Van	17	0.82	35	1.20	122	2.14	312	1.76	327	1.05	4	1.06	817	1.36
Large	511	24.72	865	29.58	1,639	28.78	4,847	27.30	8,547	27.35	135	35.62	16,544	27.54
Medium	257	12.43	253	8.65	377	6.62	1,186	6.68	2,456	7.86	33	8.71	4,562	7.59
People Mover	8	0.39	17	0.58	46	0.81	178	1.00	105	0.34	2	0.53	356	0.59
Small	354	17.13	335	11.46	469	8.24	1,484	8.36	4,108	13.14	26	6.86	6,776	11.28
Light	107	5.18	86	2.94	154	2.70	462	2.60	1,117	3.57	15	3.96	1,941	3.23
SUV - Compact	50	2.42	103	3.52	165	2.90	482	2.72	534	1.71	.	.	1,334	2.22
SUV - Large	47	2.27	169	5.78	359	6.30	1,058	5.96	1,124	3.60	19	5.01	2,776	4.62
SUV - Medium	20	0.97	61	2.09	126	2.21	435	2.45	346	1.11	5	1.32	993	1.65
Total	2,067	100.00	2,924	100.00	5,695	100.00	17,753	100.00	31,255	100.00	379	100.00	60,073	100.00

Table 106: Market group by age grouping for older drivers and by sex - Western Australia Male

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	280	7.50	563	9.06	1,405	11.12	4,159	10.57	6,147	10.15	2,773	11.85	15,327	10.51
Commercial - Ute	137	3.67	469	7.55	1,410	11.16	5,423	13.78	7,920	13.08	3,371	14.40	18,730	12.84
Commercial - Van	34	0.91	115	1.85	334	2.64	1,029	2.62	824	1.36	626	2.67	2,962	2.03
Large	1,157	30.99	1,965	31.62	3,835	30.36	11,841	30.09	19,348	31.94	6,779	28.97	44,925	30.79
Medium	470	12.59	649	10.44	1,114	8.82	3,215	8.17	5,304	8.76	1,980	8.46	12,732	8.73
People Mover	20	0.54	81	1.30	244	1.93	784	1.99	538	0.89	341	1.46	2,008	1.38
Small	1,054	28.23	1,187	19.10	1,909	15.11	5,534	14.06	12,494	20.63	3,477	14.86	25,655	17.58
Light	276	7.39	298	4.80	504	3.99	1,582	4.02	2,794	4.61	817	3.49	6,271	4.30
SUV - Compact	111	2.97	270	4.35	460	3.64	1,406	3.57	1,377	2.27	582	2.49	4,206	2.88
SUV - Large	119	3.19	362	5.83	892	7.06	2,711	6.89	2,587	4.27	1,792	7.66	8,463	5.80
SUV - Medium	75	2.01	255	4.10	523	4.14	1,665	4.23	1,234	2.04	866	3.70	4,618	3.17
Total	3,733	100.00	6,214	100.00	12,630	100.00	39,349	100.00	60,567	100.00	23,404	100.00	145,897	100.00

Table 107: Market group by age grouping for older drivers and by sex - South Australia Male

Market Group	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unknown	862	23.54	1,189	24.32	2,807	28.92	9,385	30.38	12,489	28.28	2,039	33.40	28,771	28.94
Commercial - Ute	78	2.13	232	4.75	789	8.13	2,842	9.20	3,383	7.66	470	7.70	7,794	7.84
Commercial - Van	18	0.49	68	1.39	283	2.92	763	2.47	676	1.53	110	1.80	1,918	1.93
Large	1,121	30.61	1,671	34.18	2,825	29.10	9,214	29.82	14,304	32.39	1,830	29.98	30,965	31.15
Medium	433	11.82	448	9.16	720	7.42	2,044	6.62	3,541	8.02	455	7.45	7,641	7.69
People Mover	12	0.33	39	0.80	118	1.22	404	1.31	284	0.64	76	1.24	933	0.94
Small	797	21.76	685	14.01	980	10.10	2,802	9.07	6,389	14.47	595	9.75	12,248	12.32
Light	206	5.63	155	3.17	278	2.86	819	2.65	1,544	3.50	182	2.98	3,184	3.20
SUV - Compact	55	1.50	123	2.52	266	2.74	682	2.21	540	1.22	98	1.61	1,764	1.77
SUV - Large	49	1.34	163	3.33	360	3.71	1,086	3.51	584	1.32	146	2.39	2,388	2.40
SUV - Medium	31	0.85	116	2.37	281	2.89	856	2.77	426	0.96	104	1.70	1,814	1.82
Total	3,662	100.00	4,889	100.00	9,707	100.00	30,897	100.00	44,160	100.00	6,105	100.00	99,420	100.00

Table 108: Average CWR by age grouping for older drivers and by sex and by vehicle age - Australia

	Older driver age groupings					
	75+ years	65-74 years	55-64 years	35-54 years	0-34 years	Unknown
Sex						
FEMALE	3.93%	3.64%	3.47%	3.37%	3.72%	3.63%
MALE	3.68%	3.39%	3.24%	3.23%	3.54%	3.49%
Vehicle Age Group						
Less than 3 years	2.96%	2.76%	2.66%	2.61%	2.76%	2.66%
3 to 5 years	3.20%	2.97%	2.93%	2.88%	3.03%	2.93%
6 to 10 years	3.51%	3.29%	3.21%	3.18%	3.42%	3.28%
11 to 15 years	4.04%	3.90%	3.87%	3.85%	4.00%	3.94%
16 years and over	4.49%	4.39%	4.37%	4.38%	4.49%	4.48%

Table 109: Average CWR by age grouping for older drivers and by sex and by vehicle age - New Zealand

	Older driver age groupings					
	75+ years	65-74 years	55-64 years	35-54 years	0-34 years	Unknown
Sex						
NZ FEMALE	4.68%	4.31%	4.16%	4.09%	4.53%	4.21%
NZ MALE	4.29%	4.11%	3.96%	4.06%	4.50%	4.33%
Vehicle Age Group						
Less than 3 years	3.21%	3.02%	2.83%	2.77%	2.81%	2.86%
3 to 5 years	3.62%	3.23%	3.10%	3.01%	3.02%	3.07%
6 to 10 years	3.89%	3.68%	3.54%	3.54%	3.77%	3.57%
11 to 15 years	4.60%	4.46%	4.44%	4.37%	4.49%	4.42%
16 years and over	5.73%	5.60%	5.48%	5.35%	5.36%	5.67%

Table 110: Average CWR by age grouping for older drivers and by sex and vehicle age - Australia

	Older driver age groupings					
Vehicle Age Group	75+	65-74	55-64	35-54	0-34	Unknown
Female						
Less than 3 years	3.10%	2.94%	2.82%	2.73%	2.91%	2.87%
3 to 5 years	3.40%	3.15%	3.10%	2.99%	3.21%	3.12%
6 to 10 years	3.71%	3.52%	3.40%	3.30%	3.61%	3.49%
11 to 15 years	4.24%	4.10%	4.02%	3.93%	4.17%	4.13%
16 years and over	4.62%	4.51%	4.44%	4.46%	4.58%	4.64%
Male						
Less than 3 years	2.88%	2.65%	2.56%	2.53%	2.64%	2.61%
3 to 5 years	3.08%	2.86%	2.81%	2.79%	2.89%	2.86%
6 to 10 years	3.39%	3.16%	3.08%	3.07%	3.27%	3.18%
11 to 15 years	3.93%	3.79%	3.76%	3.79%	3.90%	3.88%
16 years and over	4.42%	4.34%	4.33%	4.34%	4.44%	4.49%

Table 111: Average CWR by age grouping for older drivers and by sex and vehicle age - New Zealand

	Older driver age groupings					
Vehicle Age Group	75+	65-74	55-64	35-54	0-34	Unknown
Female						
Less than 3 years	3.47%	3.20%	3.07%	2.87%	2.96%	2.97%
3 to 5 years	3.87%	3.39%	3.26%	3.10%	3.06%	3.13%
6 to 10 years	4.09%	3.87%	3.68%	3.60%	3.87%	3.58%
11 to 15 years	4.79%	4.54%	4.52%	4.39%	4.51%	4.50%
16 years and over	5.96%	5.73%	5.48%	5.30%	5.40%	5.44%
Male						
Less than 3 years	3.05%	2.93%	2.71%	2.72%	2.74%	2.85%
3 to 5 years	3.42%	3.12%	2.96%	2.94%	3.00%	2.97%
6 to 10 years	3.69%	3.53%	3.43%	3.49%	3.71%	3.58%
11 to 15 years	4.46%	4.41%	4.37%	4.34%	4.47%	4.44%
16 years and over	5.53%	5.53%	5.47%	5.39%	5.34%	5.44%

Table 112: Average AGG by age grouping for older drivers and by sex and by vehicle age - Australia

	Older driver age groupings					
	75+	65-74	55-64	35-54	0-34	Unknown
Sex						
AUS FEMALE	3.16%	3.31%	3.40%	3.56%	3.34%	3.52%
AUS MALE	3.56%	3.82%	3.94%	3.96%	3.79%	3.97%
Vehicle Age Group						
Less than 3 years	3.23%	3.41%	3.57%	3.64%	3.50%	3.62%
3 to 5 years	3.31%	3.59%	3.71%	3.78%	3.63%	3.77%
6 to 10 years	3.37%	3.62%	3.71%	3.80%	3.61%	3.76%
11 to 15 years	3.47%	3.69%	3.75%	3.80%	3.57%	3.76%
16 years and over	3.62%	3.85%	3.94%	3.91%	3.69%	3.89%

Table 113: Average AGG by age grouping for older drivers and by sex and by vehicle age - New Zealand

	Older driver age groupings					
	75+	65-74	55-64	35-54	0-34	Unknown
Sex						
NZ FEMALE	2.90%	3.09%	3.20%	3.38%	3.28%	3.28%
NZ MALE	3.20%	3.47%	3.70%	3.73%	3.54%	3.65%
Vehicle Age Group						
Less than 3 years	2.95%	3.17%	3.39%	3.50%	3.47%	3.46%
3 to 5 years	3.05%	3.21%	3.48%	3.67%	3.62%	4.12%
6 to 10 years	2.98%	3.30%	3.49%	3.58%	3.46%	3.54%
11 to 15 years	3.10%	3.37%	3.51%	3.57%	3.42%	3.56%
16 years and over	3.17%	3.41%	3.52%	3.57%	3.43%	3.55%

Table 114: Average AGG by age grouping for older drivers and by sex and vehicle age - Australia

	Older driver age groupings					
Vehicle Age Group	75+	65-74	55-64	35-54	0-34	Unknown
Female						
Less than 3 years	3.10%	3.20%	3.29%	3.39%	3.24%	3.38%
3 to 5 years	3.06%	3.30%	3.39%	3.55%	3.36%	3.54%
6 to 10 years	3.11%	3.28%	3.39%	3.59%	3.35%	3.55%
11 to 15 years	3.18%	3.38%	3.45%	3.61%	3.34%	3.53%
16 years and over	3.34%	3.48%	3.60%	3.65%	3.45%	3.62%
Male						
Less than 3 years	3.30%	3.55%	3.75%	3.83%	3.72%	3.82%
3 to 5 years	3.45%	3.78%	3.94%	3.98%	3.85%	4.02%
6 to 10 years	3.52%	3.83%	3.96%	4.00%	3.83%	4.01%
11 to 15 years	3.63%	3.88%	3.98%	3.96%	3.73%	3.94%
16 years and over	3.75%	4.02%	4.12%	4.06%	3.81%	4.06%

Table 115: Average AGG by age grouping for older drivers and by sex and vehicle age - New Zealand

	Older driver age groupings					
Vehicle Age Group	75+	65-74	55-64	35-54	0-34	Unknown
Female						
Less than 3 years	2.86%	2.95%	3.14%	3.20%	3.27%	3.08%
3 to 5 years	2.89%	2.87%	3.06%	3.41%	3.36%	3.36%
6 to 10 years	2.83%	3.07%	3.18%	3.38%	3.24%	3.28%
11 to 15 years	2.95%	3.21%	3.26%	3.41%	3.30%	3.23%
16 years and over	2.97%	3.15%	3.29%	3.38%	3.27%	3.40%
Male						
Less than 3 years	3.02%	3.29%	3.54%	3.66%	3.58%	3.61%
3 to 5 years	3.18%	3.44%	3.79%	3.88%	3.77%	4.04%
6 to 10 years	3.13%	3.48%	3.74%	3.77%	3.61%	3.71%
11 to 15 years	3.22%	3.49%	3.71%	3.71%	3.51%	3.58%
16 years and over	3.33%	3.57%	3.69%	3.68%	3.51%	3.56%

Table 116: Rank of top 25, frequency and percentage driven of passenger vehicle models involved in the sample of crashes in Australia during the years 2005-2009 by age group and over all ages

Vehicle model		Age group									Total		
		75+ years				65-74 years			35-54 years				
	% CWR‡	N	%	rank	N	%	rank	N	%	rank	N	%	rank
Total		27,398	100		41,141	100		300,067	100		987,644	100	
UNKNOWN MAKE/MODEL		4,916	18.00		6,390	15.53		45,063	15.02		154,357	15.63	
TOYOTA CAMRY >=98	3.20	640	2.34	*1*	903	2.20	*3*	4,399	1.47	7	11,564	1.17	13
TOYOTA COROLLA 94-98 / NOVA 95 on	4.34	627	2.29	*2*	562	1.37	*10*	2,173	0.72	21	8,536	0.86	19
TOYOTA COROLLA 120 SERIES	3.37	601	2.19	*3*	853	2.07	*4*	4,180	1.39	8	13,580	1.38	*8*
TOYOTA COROLLA 90-93 / NOVA 88-93	4.67	540	1.97	*4*	442	1.07	15	2,026	0.68	27	9,805	0.99	16
TOYOTA CAMRY/APOLLO 93-97	4.25	527	1.92	*5*	460	1.12	14	2,411	0.80	17	8,991	0.91	17
TOYOTA CAMRY/APOLLO 88-92	4.08	519	1.89	*6*	632	1.54	*8*	3,763	1.25	11	11,205	1.14	14
HOLDEN COMMODORE VS/VR	3.68	503	1.84	*7*	726	1.77	*7*	5,196	1.73	6	22,172	2.25	*2*
FORD FALCON EF/EL	3.40	479	1.75	*8*	941	2.29	*1*	5,664	1.89	5	17,831	1.81	*5*
HOLDEN COMMODORE VT/VX	3.17	396	1.45	*9*	850	2.07	*5*	9,333	3.11	1	30,322	3.07	*1*
HOLDEN COMM VN/VP	4.41	351	1.28	*10*	389	0.95	17	3,075	1.03	13	14,455	1.46	*7*
NISSAN PULSAR N16 00-05	3.83	336	1.23	*11*	435	1.06	16	2,070	0.69	23	7,251	0.73	22
MITSUBISHI OTHERS	Not ranked	335	1.22	12	495	1.20	12	4,069	1.36	9	13,416	1.36	*9*
FORD FALCON AU	3.03	333	1.22	13	930	2.26	*2*	6,669	2.22	4	17,125	1.73	*6*
MITSUBISHI MAGNA VERADA TE-TJ/KE-KJ	3.44	324	1.18	14	559	1.36	11	3,955	1.32	10	12,245	1.24	*11*
MITSUBISHI MAGNA/VERADA TR-TS/KR-KS		323	1.18	15	367	0.89	22	2,092	0.70	22	7,745	0.78	21
MAZDA 323 / LASER 99-03		318	1.16	16	383	0.93	19	1,510	0.50	33	5,528	0.56	33
TOYOTA CAMRY XK36	3.20	308	1.12	17	594	1.44	*9*	3,663	1.22	12	8,718	0.88	18
HYUNDAI EXCEL 95-98		306	1.12	18	373	0.91	20	2,591	0.86	16	11,876	1.20	12
FORD LASER/MET 91-94		285	1.04	19	242	0.59	34	944	0.32	53	4,841	0.49	42

‡ Crashworthiness Ratings for top 10 Older Driver Vehicles and top 10 ranked for all drivers.

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Vehicle model	Age group									Total		
		75+ years			65-74 years			35-54 years				
	% CWR	N	%	rank	N	%	rank	N	%	rank	N	%	rank
TOYOTA COROLLA 98-00		274	1.0	20	369	0.9	21	1,447	0.5	35	4,869	0.49	41
HOLDEN ASTRA TS		271	1.0	21	327	0.8	23	2,604	0.9	15	9,964	1.01	15
TOYOTA ECHO		267	1.0	22	300	0.7	26	1,668	0.6	31	6,296	0.64	27
FORD FESTIVA WB/WD/WH/WF 94-2000		263	1.0	23	279	0.7	28	1,469	0.5	34	6,389	0.65	25
FORD FALCON EA/EB S1		262	1.0	24	383	0.9	18	2,245	0.7	18	7,786	0.79	20
MITSUBISHI CE LANCER/MIRAGE >=96	4.50	240	0.9	25	313	0.8	24	2,029	0.7	26	13,091	1.33	*10*
FORD FALCON BA	2.47	178	0.7	32	749	1.8	*6*	8,613	2.9	2	21,067	2.13	*3*
HOLDEN COMMODORE VY/VZ	2.62	169	0.6	34	474	1.2	13	6,910	2.3	3	18,166	1.84	*4*
TOYOTA AVALON XH10		118	0.4	43	301	0.7	25	1,043	0.3	45	2,779	0.28	69
TOYOTA LANCRUISER >=98		46	0.2	110	271	0.7	29	2,741	0.9	14	6,303	0.64	26
TOYOTA LANCRUISER 90-97		67	0.2	82	234	0.6	35	2,233	0.7	19	5,850	0.59	32
HOLDEN COMMODORE VE		35	0.1	133	165	0.4	46	2,223	0.7	20	5,328	0.54	34
TOYOTA OTHERS		174	0.64	33	260	0.6	31	2,039	0.7	24	6,821	0.69	24
TOYOTA 4RUNNER/HILUX 89-97		96	0.35	58	256	0.6	32	2,036	0.7	25	7,213	0.73	23

‡ Crashworthiness Ratings for top 10 ranked Older Driver Vehicles and top 10 ranked for all drivers.

Table 117: Rank of top 25, frequency and percentage driven of passenger vehicle models involved in the sample of crashes in New Zealand during the years 2005-2009 by age group and over all ages

Vehicle model		Age group									Total		
	% CWR‡	75+ years			65-74 years			35-54 years					
		N	%	rank	N	%	rank	N	%	rank	N	%	rank
Total		2,700	100.0		3,039	100.0		19,581	100.0		66,078	100.0	
UNKNOWN MAKE/MODEL		611	22.6		699	23.0		4719	24.1		16080	24.3	
TOYOTA COROLLA 94-98 / NOVA 95 on	4.34	49	1.8	*1*	32	1.1	*4*	119	0.6	26	547	0.8	17
NISSAN PULSAR >=96	4.40	41	1.5	*2*	34	1.1	*3*	179	0.9	14	687	1.0	*7*
HONDA JAZZ	3.48	41	1.5	*2*	29	1.0	*7*	41	0.2	104	178	0.3	85
TOYOTA ECHO	4.35	40	1.5	*4*	28	0.9	*9*	72	0.4	60	243	0.4	63
MAZDA 323 /LASER 82-88	5.93	39	1.4	*5*	25	0.8	14	121	0.6	25	814	1.2	*2*
SUZUKI SWIFT/BARINA >= 89	5.90	38	1.4	*6*	16	0.5	38	58	0.3	75	223	0.3	67
TOYOTA COROLLA 120 SERIES	3.37	36	1.3	*7*	49	1.6	*1*	193	1.0	11	506	0.8	22
MITSUBISHI LANCER OTHERS	Unranked	34	1.3	8	15	0.5	40	89	0.5	48	490	0.7	25
TOYOTA CORONA	5.06	33	1.2	*9*	24	0.8	18	175	0.9	15	615	0.9	11
NISSAN BLUEBIRD NEW	3.31	32	1.2	*10*	45	1.5	*2*	230	1.2	6	734	1.1	*5*
NISSAN PULSAR 92-95	3.91	31	1.1	11	29	1.0	7	117	0.6	28	549	0.8	16
TOYOTA COROLLA 90-93 / NOVA 88-93		29	1.1	12	19	0.6	30	114	0.6	31	534	0.8	20
HONDA CIVIC OTHERS		29	1.1	12	10	0.3	66	72	0.4	60	459	0.7	28
DAIHATSU SIRION	4.55	28	1.0	14	26	0.9	*12*	38	0.2	111	148	0.2	97
TOYOTA COROLLA 98-00		28	1.0	14	21	0.7	24	76	0.4	57	234	0.4	65
FORD LASER/MET 91-94		28	1.0	14	20	0.7	26	70	0.4	62	382	0.6	38
MAZDA 323 90-93	4.30	26	1.0	17	26	0.9	*12*	103	0.5	39	716	1.1	*6*
TOYOTA COROLLA 85		23	0.9	18	25	0.8	14	95	0.5	43	399	0.6	33
MITSUBISHI GALANT OTHERS	Unranked	21	0.8	19	28	0.9	*9*	160	0.8	18	560	0.8	15
FORD FESTIVA WB/WD/WH/WF 94-2000		21	0.8	19	10	0.3	66	32	0.2	125	133	0.2	110

‡ Crashworthiness Ratings for top 10 ranked Older Driver Vehicles and top 10 ranked for all drivers.

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Vehicle model		Age group									Total		
	% CWR‡	75+ years			65-74 years			35-54 years					
		N	%	rank	N	%	rank	N	%	rank	N	%	rank
MAZDA 626/MX6 / TELSTAR 88-91	4.06	20	0.7	21	31	1.0	*5*	141	0.7	21	538	0.8	18
MITSUBISHI COLT	6.13	20	0.7	21	28	0.9	*9*	108	0.6	34	607	0.9	12
HONDA CIVIC 92-95		20	0.7	21	8	0.3	86	61	0.3	74	332	0.5	50
CHARADE 93-00		20	0.7	21	8	0.3	86	8	0.0	248	64	0.1	172
NISSAN PULSAR/VECTOR 88-90		20	0.7	21	7	0.2	101	68	0.3	64	367	0.6	42
MAZDA 121 94-96		20	0.7	21	7	0.2	101	23	0.1	161	92	0.1	138
MAZDA 323 95-98		18	0.7	29	25	0.8	14	118	0.6	27	431	0.7	29
MAZDA 323 89		18	0.7	29	22	0.7	22	83	0.4	54	538	0.8	18
HONDA CIVIC 88-91		18	0.7	29	13	0.4	49	77	0.4	56	530	0.8	21
FORD MONDEO	2.97	16	0.6	37	31	1.0	*5*	203	1.0	9	484	0.7	26
MAZDA 626/MX6 / TELSTAR 92-97		15	0.6	41	25	0.8	14	164	0.8	16	504	0.8	24
NISSAN MAXIMA 95-99		15	0.6	41	17	0.6	37	126	0.6	22	364	0.6	43
SUBARU LIBERTY <=94	3.83	13	0.5	47	11	0.4	58	124	0.6	23	641	1.0	*10*
HYUNDAI EXCEL 95-98		11	0.4	57	9	0.3	74	41	0.2	104	134	0.2	108
HONDA CIVIC 84-87		11	0.4	57	6	0.2	115	30	0.2	130	175	0.3	86
MITSUBISHI MAGNA/VERADA TR-TS/KR-KS	3.70	10	0.4	61	24	0.8	18	238	1.2	4	675	1.0	*8*
NISSAN MAXIMA 00-05		10	0.4	61	10	0.3	66	41	0.2	104	109	0.2	125
BMW 3 92-98		10	0.4	61	8	0.3	86	162	0.8	17	506	0.8	22
HOLDEN COMMODORE VT/VX		9	0.3	67	15	0.5	40	231	1.2	5	478	0.7	27
MAZDA 626/MX6 98-02		8	0.3	74	24	0.8	18	101	0.5	40	247	0.4	60
SUBARU LIBERTY 95-98	3.40	8	0.3	74	19	0.6	30	203	1.0	9	952	1.4	*1*
FORD FALCON AU		8	0.3	74	18	0.6	34	191	1.0	12	385	0.6	36

‡ Crashworthiness Ratings for top 10 ranked Older Driver Vehicles and top 10 ranked for all drivers.

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Vehicle model		Age group									Total		
	% CWR‡	75+ years			65-74 years			35-54 years					
		N	%	rank	N	%	rank	N	%	rank	N	%	rank
TOYOTA CAMRY >=98		7	0.3	82	23	0.8	21	142	0.7	20	293	0.4	54
HOLDEN COMMODORE VY/VZ		7	0.3	82	22	0.7	22	288	1.5	1	561	0.8	14
NISSAN PINTARA >=89		7	0.3	82	19	0.6	30	159	0.8	19	567	0.9	13
FORD FALCON EF/EL		6	0.2	95	13	0.4	49	183	0.9	13	383	0.6	37
TOYOTA HIACE/LITEACE 96-04	3.08	5	0.2	108	20	0.7	26	277	1.4	2	646	1.0	*9*
FORD FALCON BA		4	0.1	126	14	0.5	46	210	1.1	8	404	0.6	32
HONDA ODYSSEY 95-99		4	0.1	126	9	0.3	74	242	1.2	3	426	0.6	31
SUBARU IMPREZA 93-00	4.77	4	0.1	126	9	0.3	74	124	0.6	23	789	1.2	*3*
NISSAN SKYLINE	4.59	4	0.1	126	7	0.2	101	108	0.6	34	758	1.1	*4*
TOYOTA CAMRY XK36		3	0.1	152	21	0.7	24	95	0.5	43	189	0.3	78
TOYOTA TARAGO 90		3	0.1	152	5	0.2	129	226	1.2	7	376	0.6	40

‡ Crashworthiness Ratings for top 10 ranked Older Driver Vehicles and top 10 ranked for all drivers.

Table 118: Rank of top 10, frequency and percentage driven of LIGHT passenger vehicle models involved in the sample of crashes in Australia during the years 2005-2009 by age group and over all ages

Vehicle model	Age group									Total		
	75+ years			65-74 years			35-54 years					
	N	%	rank	N	%	rank	N	%	rank	N	%	rank
Total	2,297	100.0		2,359	100.0		13,930	100.0		58,303	100.0	
TOYOTA ECHO	267	11.6	1	300	12.7	1	1,668	12.0	1	6,296	10.8	2
FORD FESTIVA WB/WD/WH/WF 94-2000	263	11.5	2	279	11.8	2	1,469	10.6	2	6,389	11.0	1
HYUNDAI GETZ	223	9.7	3	206	8.7	3	1,190	8.5	3	4,519	7.8	4
SUZUKI SWIFT/BARINA >= 89	148	6.4	4	152	6.4	5	980	7.0	4	5,268	9.0	3
MAZDA 121 97-98	135	5.9	5	133	5.6	6	448	3.2	11	1,598	2.7	13
TOYOTA STARLET	113	4.9	6	100	4.2	10	505	3.6	9	2,184	3.8	8
TOYOTA YARIS	111	4.8	7	156	6.6	4	859	6.2	5	3,211	5.5	6
MAZDA 2	107	4.7	8	104	4.4	8	395	2.8	13	1,330	2.3	17
HOLDEN BARINA COMBO & EURO >=95	102	4.4	9	119	5.0	7	677	4.9	6	3,356	5.8	5
HOLDEN BARINA XC	95	4.1	10	88	3.7	12	670	4.8	7	3,009	5.2	7
HONDA JAZZ	83	3.6	11	101	4.3	9	556	4.0	8	1,922	3.3	11
MAZDA 121 82-93 / FORD FESTIVA WA	69	3.0	13	98	4.2	11	457	3.3	10	2,071	3.6	10
CHARADE 93-00	55	2.4	14	49	2.1	13	338	2.4	15	2,079	3.6	9

Table 119: Rank of top 10, frequency and percentage driven of SMALL passenger vehicle models involved in the sample of crashes in Australia during the years 2005-2009 by age group and over all ages

Vehicle model	Age group									Total		
	75+ years			65-74 years			35-54 years					
	N	%	rank	N	%	rank	N	%	rank	N	%	rank
Total	7,477	100.0		8,663	100.0		48,602	100.0		199,665	100.0	
TOYOTA COROLLA 94-98 / NOVA 95 on	627	8.4	1	562	6.5	2	2,173	4.5	4	8,536	4.3	6
TOYOTA COROLLA 120 SERIES	601	8.0	2	853	9.9	1	4,180	8.6	1	13,580	6.8	1
TOYOTA COROLLA 90-93 / NOVA 88-93	540	7.2	3	442	5.1	3	2,026	4.2	7	9,805	4.9	5
NISSAN PULSAR N16 00-05	336	4.5	4	435	5.0	4	2,070	4.3	5	7,251	3.6	7
MAZDA 323 / LASER 99-03	318	4.3	5	383	4.4	5	1,510	3.1	9	5,528	2.8	10
HYUNDAI EXCEL 95-98	306	4.1	6	373	4.3	6	2,591	5.3	3	11,876	6.0	3
FORD LASER/MET 91-94	285	3.8	7	242	2.8	12	944	1.9	16	4,841	2.4	13
TOYOTA COROLLA 98-00	274	3.7	8	369	4.3	7	1,447	3.0	10	4,869	2.4	12
HOLDEN ASTRA TS	271	3.6	9	327	3.8	8	2,604	5.4	2	9,964	5.0	4
MITSUBISHI CE LANCER/MIRAGE >=96	240	3.2	10	313	3.6	9	2,029	4.2	6	13,091	6.6	2
NISSAN PULSAR >=96	223	3.0	12	271	3.1	10	1,385	2.9	11	6,037	3.0	9
MAZDA 3	128	1.7	16	197	2.3	14	1,858	3.8	8	6,224	3.1	8

Table 120: Rank of top 10, frequency and percentage driven of MEDIUM passenger vehicle models involved in the sample of crashes in Australia during the years 2005-2009 by age group and over all ages

Vehicle model	Age group									Total		
	75+ years			65-74 years			35-54 years					
	N	%	rank	N	%	rank	N	%	rank	N	%	rank
Total	3,199	100.0		4,219	100.0		26,102	100.0		86,308	100.0	
TOYOTA CAMRY/APOLLO 93-97	527	16.5	1	460	10.9	2	2,411	9.2	2	8,991	10.4	2
TOYOTA CAMRY/APOLLO 88-92	519	16.2	2	632	15.0	1	3,763	14.4	1	11,205	13.0	1
NISSAN PINTARA >=89	138	4.3	3	119	2.8	8	448	1.7	15	2,128	2.5	11
MAZDA 626/MX6 / TELSTAR 88-91	131	4.1	4	141	3.3	4	689	2.6	9	2,661	3.1	4
HOLDEN VECTRA	116	3.6	5	109	2.6	9	698	2.7	8	2,513	2.9	7
SUBARU LIBERTY 99-03	85	2.7	6	177	4.2	3	965	3.7	5	2,737	3.2	3
SUBARU LIBERTY 95-98	83	2.6	7	75	1.8	16	354	1.4	18	1,331	1.5	18
SUBARU LIBERTY <=94	82	2.6	8	95	2.3	12	407	1.6	16	1,906	2.2	13
MAZDA 626/MX6 / TELSTAR 83-86	80	2.5	9	69	1.6	18	344	1.3	19	1,592	1.8	15
MAZDA 626/MX6 / TELSTAR 92-97	79	2.5	10	97	2.3	11	660	2.5	11	2,427	2.8	8
MAZDA 626/MX6 98-02	76	2.4	11	123	2.9	5	543	2.1	12	1,479	1.7	16
HONDA ACCORD US	60	1.9	14	102	2.4	10	355	1.4	17	986	1.1	22
SUBARU LIBERTY 03-09	56	1.8	15	81	1.9	13	825	3.2	6	2,133	2.5	10
MERCEDES C-CLASS W203	49	1.5	17	120	2.8	7	493	1.9	14	1,267	1.5	19
MAZDA 6	43	1.3	19	123	2.9	6	1,066	4.1	3	2,580	3.0	6
BMW 3 99-06	35	1.1	21	77	1.8	15	1,044	4.0	4	2,628	3.0	5
HONDA ACCORD EURO	27	0.8	29	64	1.5	20	770	3.0	7	1,953	2.3	12
BMW 3 92-98	26	0.8	31	53	1.3	23	670	2.6	10	2,215	2.6	9

Table 121: Rank of top 10, frequency and percentage driven of LIGHT passenger vehicle models involved in the sample of crashes in New Zealand during the years 2005-2009 by age group and over all ages

Vehicle model	Age group									Total		
	75+ years			65-74 years			35-54 years					
	N	%	rank	N	%	rank	N	%	rank	N	%	rank
Total	457	100.0		304	100.0		821	100.0		3,398	100.0	
HONDA JAZZ	41	9.0	1	29	9.5	1	41	5.0	5	178	5.2	5
TOYOTA ECHO	40	8.8	2	28	9.2	2	72	8.8	2	243	7.2	2
SUZUKI SWIFT/BARINA >= 89	38	8.3	3	16	5.3	5	58	7.1	3	223	6.6	3
DAIHATSU SIRION	28	6.1	4	26	8.6	4	38	4.6	6	148	4.4	6
FORD FESTIVA WB/WD/WH/WF 94-2000	21	4.6	5	10	3.3	8	32	3.9	8	133	3.9	8
MITSUBISHI COLT	20	4.4	6	28	9.2	3	108	13.2	1	607	17.9	1
CHARADE 93-00	20	4.4	7	8	2.6	11	8	1.0	27	64	1.9	19
MAZDA 121 94-96	20	4.4	8	7	2.3	16	23	2.8	14	92	2.7	11
HONDA CITY	19	4.2	9	8	2.6	12	32	3.9	9	139	4.1	7
TOYOTA STARLET	18	3.9	10	9	3.0	10	30	3.7	10	187	5.5	4
MAZDA 121 97-98	17	3.7	12	15	4.9	6	33	4.0	7	111	3.3	10
DAIHATSU MIRA	13	2.8	15	11	3.6	7	18	2.2	16	79	2.3	14
SUZUKI SWIFT RS415	11	2.4	17	10	3.3	9	46	5.6	4	116	3.4	9

Table 122: Rank of top 10, frequency and percentage driven of SMALL passenger vehicle models involved in the sample of crashes in New Zealand during the years 2005-2009 by age group and over all ages

Vehicle model	Age group									Total		
	75+ years			65-74 years			35-54 years					
	N	%	rank	N	%	rank	N	%	rank	N	%	rank
Total	754	100.0		621	100.0		3,072	100.0		13,566	100.0	
TOYOTA COROLLA 94-98 / NOVA 95 on	49	6.5	1	32	5.2	3	119	3.9	5	547	4.0	6
NISSAN PULSAR >=96	41	5.4	2	34	5.5	2	179	5.8	2	687	5.1	4
MAZDA 323 /LASER 82-88	39	5.2	3	25	4.0	6	121	3.9	4	814	6.0	1
TOYOTA COROLLA 120 SERIES	36	4.8	4	49	7.9	1	193	6.3	1	506	3.7	9
NISSAN PULSAR 92-95	31	4.1	5	29	4.7	4	117	3.8	7	549	4.1	5
TOYOTA COROLLA 90-93 / NOVA 88-93	29	3.9	6	19	3.1	10	114	3.7	8	534	3.9	7
TOYOTA COROLLA 98-00	28	3.7	7	21	3.4	8	76	2.5	11	234	1.7	19
FORD LASER/MET 91-94	28	3.7	8	20	3.2	9	70	2.3	12	382	2.8	11
MAZDA 323 90-93	26	3.5	9	26	4.2	5	103	3.4	9	716	5.3	3
HONDA CIVIC 92-95	20	2.7	10	8	1.3	25	61	2.0	17	332	2.5	15
MAZDA 323 95-98	18	2.4	13	25	4.0	7	118	3.8	6	431	3.2	10
HONDA CIVIC 88-91	18	2.4	14	13	2.1	13	77	2.5	10	530	3.9	8
SUBARU IMPREZA 93-00	4	0.5	45	9	1.5	24	124	4.0	3	789	5.8	2

Table 123: Rank of top 10, frequency and percentage driven of MEDIUM passenger vehicle models involved in the sample of crashes in New Zealand during the years 2005-2009 by age group and over all ages

Vehicle model	Age group									Total		
	75+ years			65-74 years			35-54 years					
	N	%	rank	N	%	rank	N	%	rank	N	%	rank
Total	321	100.0		516	100.0		3,496	100.0		11,928	100.0	
TOYOTA CORONA	33	10.3	1	24	4.7	5	175	5.0	4	615	5.2	4
NISSAN BLUEBIRD NEW	32	10.0	2	45	8.7	1	230	6.6	1	734	6.2	2
MAZDA 626/MX6 / TELSTAR 88-91	20	6.2	3	31	6.0	2	141	4.0	8	538	4.5	6
FORD MONDEO	16	5.0	4	31	6.0	3	203	5.8	2	484	4.1	9
MAZDA 626/MX6 / TELSTAR 92-97	15	4.7	5	25	4.8	4	164	4.7	5	504	4.2	8
HONDA ACCORD 94-98	13	4.1	6	20	3.9	7	117	3.4	10	398	3.3	11
SUBARU LIBERTY <=94	13	4.1	7	11	2.1	14	124	3.6	9	641	5.4	3
HONDA ACCORD 86-90	12	3.7	8	11	2.1	15	57	1.6	19	234	2.0	17
BMW 3 92-98	10	3.1	9	8	1.6	19	162	4.6	6	506	4.2	7
MITSUBISHI GALANT <= 88	9	2.8	10	11	2.1	16	95	2.7	14	431	3.6	10
MAZDA 626/MX6 98-02	8	2.5	11	24	4.7	6	101	2.9	12	247	2.1	15
SUBARU LIBERTY 95-98	8	2.5	12	19	3.7	8	203	5.8	3	952	8.0	1
NISSAN BLUEBIRD <=88	8	2.5	13	15	2.9	11	50	1.4	24	194	1.6	20
NISSAN PINTARA >=89	7	2.2	14	19	3.7	9	159	4.6	7	567	4.8	5
HOLDEN VECTRA	1	0.3	39	16	3.1	10	50	1.4	23	173	1.5	23

Table 124: Rank of CWR for most popular models amongst crash involved older drivers aged 75+ and aged 65-74 years within each market group, for Australia and New Zealand (within group ranking of model is included only for older driver groups)

			75+ years			65-74 years			35-54 years		All ages	
Market	Country, Make and Model	CWR	N	Within		N	Within		N	Within	N	Within
		%		%	Rank		%	Rank		%		%
Small	Australia											
	HOLDEN ASTRA TS 98-06	3.09%	271	3.6	9	327	3.8	8	2604	5.4	9964	5.0
	TOYOTA COROLLA 98-00	3.13%	274	3.7	8	369	4.3	7	1447	3.0	4869	2.4
	New Zealand											
	TOYOTA COROLLA 98-00	3.13%	28	3.7	7	21	3.4	8	76	2.5	234	1.7
Medium	Australia											
	SUBARU LIBERTY 99-03	2.41%	85	2.7	6	177	4.2	3	965	3.7	2,737	3.2
	HOLDEN VECTRA 97-03	3.03%	116	3.6	5	109	2.6	9	698	2.7	2,513	2.9
	New Zealand											
	FORD MONDEO 95-01	2.97%	16	5.0	4	31	6.0	3	203	5.8	484	4.1
Large	Australia											
	TOYOTA CAMRY XK36 02-06	2.57%	308	5.2	9	594	5.5	7	3663	4.6	8718	3.6
	FORD FALCON AU 98-02	3.03%	333	5.6	6	930	8.5	2	6669	8.4	17125	7.1
	HOLDEN COMMODORE VT/VX 97-02	3.17%	396	6.7	4	850	7.8	4	9333	11.8	30322	12.5
	TOYOTA CAMRY 98-02	3.20%	640	10.8	1	903	8.3	3	4399	5.6	11564	4.8
	FORD FALCON EF/EL 94-98	3.40%	479	8.1	3	941	8.6	1	5664	7.2	17831	7.4
	New Zealand											
	HOLDEN COMMODORE VY/VZ 02-07	2.62%	7	3.9	8	22	6.4	3	288	9.7	561	6.8
	FORD FALCON AU 98-02	3.03%	8	4.4	6	18	5.2	5	191	6.4	385	4.7
	HOLDEN COMMODORE VT/VX 97-02	3.17%	9	5.0	5	15	4.4	8	231	7.8	478	5.8
	TOYOTA CAMRY 98-02	3.20%	7	3.9	8	23	6.7	2	142	4.8	293	3.6

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Market group	Country, Make and Model	CWR	75+ years N	75+ years Within market group %	75+ years Rank	65-74 years N	65-74 years Within market group %	65-74 years Rank	35-54 years N	35-54 years Within market group %	All ages N	All ages Within market group %
SUV-compact	Australia											
	HONDA CRV 01 on	2.08%	27	5.5	7	100	7.5	4	1231	9.9	2550	8.1
	SUBARU FORESTER II 02-08	2.21%	69	14.1	1	167	12.5	2	981	7.9	2482	7.9
	HONDA CR-V 97-01	2.45%	31	6.3	6	89	6.6	7	1106	8.9	2461	7.8
	SUBARU FORESTER 97-02	2.52%	53	10.8	3	113	8.4	3	616	5.0	1707	5.4
	TOYOTA RAV4 2001 on	2.82%	51	10.4	4	91	6.8	6	1392	11.2	3500	11.1
	New Zealand											
	HONDA CRV 01 on	2.08%	1	4.4	8	5	8.6	4	10	4.3	23	3.4
	TOYOTA RAV4 2001 on	2.82%	2	8.7	4	5	8.6	4	8	3.5	30	4.4
SUV-medium	Australia											
	TOYOTA PRADO 120 SERIES 03-09	1.67%	12	5.8	7	84	10.4	1	1509	15.5	2950	13.9
	NISSAN PATHFINDER R50 95-05	2.01%	15	7.3	3	66	8.2	5	416	4.3	1045	4.9
	MITSUBISHI PAJERO NM / NP 00-06	2.25%	16	7.7	1	77	9.5	2	896	9.2	1802	8.5
	TOYOTA PRADO 95 SERIES 96-03	2.27%	12	5.8	7	71	8.8	3	806	8.3	1676	7.9
	FORD TERRITORY SX 04-09	2.37%	12	5.8	7	56	6.9	6	927	9.5	1864	8.8
	MITSUBISHI PAJERO 92-99	3.04%	16	7.7	1	69	8.5	4	901	9.3	1983	9.4
	New Zealand											
	TOYOTA PRADO 120 SERIES 03-09	1.67%	1	16.7	2	none			6	3.3	10	2.6
	NISSAN PATHFINDER R50 95-05	2.01%	none			5	21.7	2	20	11.0	37	9.7
SUV-large	Australia											
	NISSAN PATROL 98-09	2.18%	33	10.2	5	169	14.1	4	1859	16.9	4459	16.2
	NISSAN PATROL 88-97	2.63%	62	19.1	2	181	15.1	3	1077	9.8	3210	11.7
	TOYOTA LANCRUISER 98-07	2.44%	46	14.2	4	271	22.7	1	2741	25.0	6303	22.9
	LAND ROVER DISCOVERY 91-02	2.48%	22	6.8	6	72	6.0	6	470	4.3	1180	4.3
	TOYOTA LANCRUISER 90-97	3.04%	66	20.4	1	234	19.6	2	2233	20.3	5850	21.2
	New Zealand											
	NISSAN PATROL 98-09	2.18%	1	50.0	1	2	20.0	2	12	12.4	27	13.9
	NISSAN PATROL 88-97	2.63%	1	50.0	1	1	10.0	3	7	7.2	18	9.3

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Market group	Country, Make and Model	CWR	75+ years N	75+ years Within market group %	75+ years Within market group Rank	65-74 years N	65-74 years Within market group %	65-74 years Within market group Rank	35-54 years N	35-54 years Within market group %	All ages N	All ages Within market group %
Utility	Australia											
	TOYOTA 4RUNNER/HILUX 03-04	2.43%	23	3.9	7	60	3.2	10	965	4.4	2649	3.8
	NISSAN NAVARA 97-05	2.51%	22	3.7	10	81	4.4	7	1103	5.0	2894	4.2
	TOYOTA 4RUNNER/HILUX 98-02	2.81%	39	6.5	3	141	7.6	2	1762	8.0	5235	7.6
	New Zealand											
	HOLDEN RODEO RA 03-08	2.58%	1	2.7	10	4	6.4	5	36	5.3	86	5.1
	HOLDEN COMMODORE VY/VZ UTE 02-07	2.59%	2	5.4	4	3	4.8	6	56	8.2	95	5.6
	TOYOTA 4RUNNER/HILUX 98-02	2.81%	2	5.4	4	3	4.8	6	40	5.9	109	6.4
	MAZDA BRAVO / FORD COURIER 98-02	2.95%	1	2.7	10	10	15.9	1	52	7.6	136	8.0
Van	Australia											
	VOLKSWAGEN CARAVELLE/TRANSPORTER 95-04	1.81%	7	4.8	7	20	4.4	5	235	4.6	510	3.8
	TOYOTA HIACE/LITEACE 96-04	3.08%	24	16.3	1	101	22.1	1	1481	28.9	3881	28.8
	New Zealand											
	FORD TRANSIT 01-07	1.24%	3	17.7	2	8	10.4	4	47	7.2	122	7.6
	TOYOTA HIACE/LITEACE 96-04	3.08%	5	29.4	1	20	26.0	1	277	42.6	646	40.2
People Mover	Australia											
	TOYOTA TARAGO 00-06n	2.38%	3	4.0	8	18	6.6	6	620	10.9	1066	9.5
	KIA CARNIVAL 99-06	2.51%	4	5.3	6	16	5.9	7	625	11.0	1093	9.8
	New Zealand											
	HONDA ODYSSEY 95-99	2.42%	4	14.3	3	9	19.6	1	242	34.2	426	28.2

Table 125: Time of crash by age grouping for older drivers - Australia

Time of Day and Day of Week	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Weekend Night	356	1.30	854	2.08	2,524	2.93	12,486	4.17	37,658	8.76	9,811	9.61	63,689	6.46
Weekend Day	5,566	20.34	8,048	19.59	15,398	17.89	52,398	17.49	76,616	17.83	17,409	17.05	175435	17.79
Weekday Night	617	2.25	1,492	3.63	4,555	5.29	20,205	6.74	45,419	10.57	11,296	11.06	83,584	8.48
Weekday Day	20,826	76.10	30,681	74.70	63,577	73.88	214559	71.60	270104	62.84	63,600	62.28	663347	67.27
Total	27,365	100.00	41,075	100.00	86,054	100.00	299648	100.00	429797	100.00	102116	100.00	986055	100.00

Table 126: Time of crash by age grouping for older drivers and by sex - Australia Female

Time of Day and Day of Week	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Weekend Night	92	0.95	219	1.48	725	2.14	3,871	2.97	10,084	5.86	523	2.70	15,514	4.08
Weekend Day	1,917	19.80	2,772	18.76	5,911	17.47	21,952	16.84	30,544	17.74	3,294	16.99	66,390	17.46
Weekday Night	140	1.45	398	2.69	1,355	4.01	6,313	4.84	13,262	7.70	758	3.91	22,226	5.85
Weekday Day	7,534	77.81	11,389	77.07	25,837	76.38	98,232	75.35	118312	68.71	14,814	76.40	276118	72.62
Total	9,683	100.00	14,778	100.00	33,828	100.00	130368	100.00	172202	100.00	19,389	100.00	380248	100.00

Table 127: Time of crash by age grouping for older drivers and by sex - Australia Male

Time of Day and Day of Week	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Weekend Night	263	1.49	632	2.41	1,788	3.44	8,573	5.09	27,474	10.71	1,747	4.91	40,477	7.28
Weekend Day	3,637	20.66	5,255	20.08	9,441	18.18	30,267	17.98	45,881	17.89	6,170	17.33	100651	18.10
Weekday Night	473	2.69	1,092	4.17	3,181	6.12	13,831	8.22	32,028	12.49	2,121	5.96	52,726	9.48
Weekday Day	13,229	75.16	19,193	73.33	37,532	72.26	115657	68.71	151034	58.90	25,573	71.81	362218	65.14
Total	17,602	100.00	26,172	100.00	51,942	100.00	168328	100.00	256417	100.00	35,611	100.00	556072	100.00

Table 128: Time of crash by age grouping for older drivers - New Zealand

Time of Day and Day of Week	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Weekend Night	32	1.19	64	2.11	202	3.71	1,231	6.29	4,456	13.21	174	11.05	6,159	9.32
Weekend Day	565	20.93	639	21.03	1,133	20.79	3,668	18.73	6,460	19.15	274	17.41	12,739	19.28
Weekday Night	54	2.00	122	4.01	279	5.12	1,585	8.09	4,264	12.64	189	12.01	6,493	9.83
Weekday Day	2,023	74.93	2,183	71.83	3,795	69.63	12,940	66.08	18,261	54.13	906	57.56	40,108	60.70
Unknown time on Weekend	4	0.15	5	0.16	12	0.22	49	0.25	89	0.26	9	0.57	168	0.25
Unknown time on Weekday	22	0.81	26	0.86	29	0.53	108	0.55	204	0.60	22	1.40	411	0.62
Total	2,700	100.00	3,039	100.00	5,450	100.00	19,581	100.00	33,734	100.00	1,574	100.00	66,078	100.00

Table 129: Time of crash by age grouping for older drivers and by sex - New Zealand Female

Time of Day and Day of Week	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Weekend Night	12	0.98	18	1.46	61	2.61	385	4.39	1,106	8.46	12	3.69	1,594	5.91
Weekend Day	253	20.75	261	21.19	446	19.08	1,520	17.33	2,519	19.26	55	16.92	5,054	18.74
Weekday Night	14	1.15	33	2.68	94	4.02	551	6.28	1,272	9.73	22	6.77	1,986	7.37
Weekday Day	928	76.13	908	73.70	1,721	73.64	6,250	71.24	8,071	61.71	231	71.08	18,109	67.16
Unknown time on Weekend	2	0.16	4	0.32	6	0.26	15	0.17	28	0.21	.	.	55	0.20
Unknown time on Weekday	10	0.82	8	0.65	9	0.39	52	0.59	83	0.63	5	1.54	167	0.62
Total	1,219	100.00	1,232	100.00	2,337	100.00	8,773	100.00	13,079	100.00	325	100.00	26,965	100.00

Table 130: Time of crash by age grouping for older drivers and by sex - New Zealand Male

Time of Day and Day of Week	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Weekend Night	20	1.35	46	2.55	141	4.53	843	7.81	3,348	16.23	68	10.26	4,466	11.61
Weekend Day	312	21.11	377	20.90	687	22.08	2,145	19.87	3,936	19.08	120	18.10	7,577	19.69
Weekday Night	40	2.71	89	4.93	185	5.94	1,033	9.57	2,984	14.47	84	12.67	4,415	11.47
Weekday Day	1,092	73.88	1,273	70.57	2,073	66.61	6,684	61.92	10,178	49.34	377	56.86	21,677	56.33
Unknown time on Weekend	2	0.14	1	0.06	6	0.19	34	0.31	61	0.30	5	0.75	109	0.28
Unknown time on Weekday	12	0.81	18	1.00	20	0.64	55	0.51	121	0.59	9	1.36	235	0.61
Total	1,478	100.00	1,804	100.00	3,112	100.00	10,794	100.00	20,628	100.00	663	100.00	38,479	100.00

Table 131: Time of crash by age grouping for older drivers - New South Wales

Time of Day and Day of Week	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Weekend Night	126	1.34	334	2.4	922	3.13	4,675	4.4	13,030	8.42	4,723	13.8	23,810	6.83
Weekend Day	2,056	21.82	2,868	20.3	5,598	19.02	19,706	18.5	29,051	18.77	5,951	17.3	65,230	18.71
Weekday Night	230	2.44	652	4.6	1,878	6.38	8,556	8.0	17,872	11.55	5,876	17.1	35,064	10.06
Weekday Day	7,011	74.40	10,288	72.7	21,036	71.47	73,535	69.1	94,825	61.27	17,782	51.8	224477	64.40
Total	9,423	100.	14,142	100.	29,434	100.	106472	100.	154778	100.	34,332	100.	348581	100.

Table 132: Time of crash by age grouping for older drivers - Victoria

Weekend Night	55	1.68	106	2.4	310	3.5	1,636	5.20	4,592	10.82	261	9.74	6,960	7.47
Weekend Day	741	22.67	952	21.3	1,608	17.9	5,742	18.27	7,516	17.72	450	16.80	17,009	18.24
Weekday Night	75	2.29	205	4.6	581	6.5	2,348	7.47	5,510	12.99	325	12.13	9,044	9.70
Weekday Day	2,395	73.29	3,206	71.7	6,458	72.1	21701	69.04	24,797	58.45	1,643	61.33	60,200	64.57
Total	3,266	100.	4,469	100.	8,957	100.	31,427	100.	42,415	100.	2,679	100.	93,213	100.00

Table 133: Time of crash by age grouping for older drivers - Queensland

Time of Day and Day of Week	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Weekend Night	31	0.95	95	1.98	320	3.28	1,386	4.14	4,990	9.55	1,069	21.69	7,891	7.28
Weekend Day	599	18.41	906	18.84	1,773	18.20	5,802	17.34	9,377	17.94	818	16.60	19,275	17.77
Weekday Night	55	1.69	166	3.45	487	5.00	2,312	6.91	5,762	11.03	916	18.59	9,698	8.94
Weekday Day	2,568	78.94	3,642	75.73	7,162	73.52	23,957	71.61	32,131	61.48	2,125	43.12	71,585	66.01
Total	3,253	100.00	4,809	100.00	9,742	100.00	33,457	100.00	52,260	100.00	4,928	100.00	108449	100.00

Table 134: Time of Crash by age grouping for older drivers - Western Australia

Weekend Night	71	1.21	173	1.69	546	2.45	2,678	3.56	8,233	7.62	1,815	4.25	13,516	5.11
Weekend Day	1,123	19.14	1,930	18.88	3,802	17.05	12,623	16.78	18,596	17.21	7,280	17.04	45,354	17.15
Weekday Night	125	2.13	262	2.56	929	4.17	3,989	5.30	9,329	8.63	2,134	4.99	16,768	6.34
Weekday Day	4,518	76.99	7,792	76.23	16,914	75.84	55,525	73.81	71,212	65.90	31,236	73.11	187197	70.80
Total	5,837	100	10,157	100.	22,191	100	74,815	100	107370	100.	42,465	100.	262835	100

Table 135: Time of crash by age grouping for older drivers - South Australia

Time of Day and Day of Week	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Weekend Night	73	1.31	146	1.95	426	2.71	2,111	3.95	6,813	9.34	1,943	10.97	11,512	6.66
Weekend Day	1,047	18.74	1,392	18.56	2,617	16.64	8,525	15.94	12,076	16.55	2,910	16.43	28,567	16.51
Weekday Night	132	2.36	207	2.76	680	4.32	3,000	5.61	6,946	9.52	2,045	11.55	13,010	7.52
Weekday Day	4,334	77.59	5,753	76.73	12,007	76.33	39,841	74.50	47,139	64.60	10,814	61.05	119888	69.31
Total	5,586	100.00	7,498	100.00	15,730	100.00	53,477	100.00	72,974	100.00	17,712	100.00	172977	100.00

Table A.101: Numbers and percentages of drivers of passenger vehicles involved in crashes during the years 2005-2009 by age group, sex and Australian state.

	Age group												Total	
	75+ years		65-74 years		55-64 years		35-54 years		0-34 years		Unknown			
Driver Sex	N	%	N	%	N	%	N	%	N	%	N	%	N	%
New South Wales														
UNKNOWN	1	0.01	5	0.04	25	0.1	106	0.1	127	0.08	26,458	77.07	26,722	7.67
FEMALE	3,338	35.42	4,784	33.83	10,904	37.1	43,407	40.8	58,800	37.99	2,860	8.33	124,093	35.60
MALE	6,084	64.57	9,353	66.14	18,505	62.9	62,959	59.1	95,851	61.93	5,014	14.60	197,766	56.73
Total	9,423	100.	14,142	100.	29,434	100.	106,472	100.	154,778	100.	34,332	100.	348,581	100.0
Victoria														
UNKNOWN	7	0.2	7	0.2	17	0.2	36	0.1	72	0.2	1,343	50.1	1,482	1.6
FEMALE	1,189	36.4	1,636	36.6	3,472	38.8	13,812	43.9	17,383	41.0	546	20.4	38,038	40.8
MALE	2,072	63.4	2,827	63.2	5,469	61.0	17,585	55.9	24,967	58.8	790	29.5	53,710	57.6
Total	3,268	100	4,470	100	8,958	100	31,433	100	42,422	100	2,679	100	93,230	100

Table 136: Average CWR for each scenario, for combined Australian states, by sex and age group, calculated with and without the inclusion of NSW, using 2005-2009 passenger vehicle crash data crashes from 2005-2009

			Average Percent Crashworthiness ratios produced by Scenarios													
	Actual CWR		Top ranking			Avg of top ten		Best CWR by market group and year of manuf.		Best CWR by year of manufacture		Best CWR by market group		Best CWR by market group & popularity	
	incl. NSW	4 states	all	limited	Pop-ular	all	Lim-ited	incl. NSW	4 states	incl. NSW	4 states	incl. NSW	4 states	incl. NSW	4 states
Older driver age groupings															
All Drivers															
75+ years	3.77	3.78	0.48	0.61	3.17	0.99	1.10	2.61	2.62	1.23	1.24	1.83	1.85	3.07	3.08
65-74 years	3.48	3.50	0.48	0.61	2.47	0.99	1.10	2.28	2.28	1.10	1.10	1.64	1.63	2.88	2.88
55-64 years	3.33	3.34													
35-54 years	3.29	3.31													
0-34 years	3.61	3.65													
Unknown	3.52	3.55													
Female															
75+ years	3.93	3.95	0.48	0.61	3.17	0.99	1.10	2.90	2.92	1.21	1.22	2.05	2.08	3.26	3.27
65-74 years	3.64	3.66	0.48	0.61	2.47	0.99	1.10	2.39	2.40	1.05	1.06	1.74	1.74	3.04	3.04
55-64 years	3.47	3.49													
35-54 years	3.37	3.39													
0-34 years	3.72	3.77													
Unknown	3.63	3.66													
Male															
75+ years	3.68	3.69	0.48	0.61	3.17	0.99	1.10	2.46	2.45	1.25	1.26	1.71	1.73	2.96	2.97
65-74 years	3.39	3.40	0.48	0.61	2.47	0.99	1.10	2.22	2.21	1.12	1.13	1.58	1.56	2.79	2.79
55-64 years	3.24	3.24													
35-54 years	3.23	3.25													
0-34 years	3.54	3.56													
Unknown	3.49	3.51													

Table 137: Average CWR for each Scenario, for New Zealand, by sex and age group, using 2005-2009 passenger vehicle crash data crashes from 2005-2009

		Average Percent Crashworthiness ratios produced by Scenarios								
		Top ranking			Avg of top ten		Best CWR by market group and year of manuf.	Best CWR by year of manufacture	Best CWR by market group	Best CWR by market group & popularity
	Actual CWR	all	limited	Popular	all	Limited				
Older driver age groupings										
All Drivers										
75+ years	4.47%	0.48%	0.61%	2.97%	0.99%	1.10%	3.80%	1.28%	2.94%	3.97%
65-74 years	4.19%	0.48%	0.61%	2.97%	0.99%	1.10%	3.34%	1.22%	2.63%	3.70%
55-64 years	4.05%									
35-54 years	4.07%									
0-34 years	4.51%									
Unknown	4.39%									
Female										
75+ years	4.68%	0.48%	0.61%	2.97%	0.99%	1.10%	4.20%	1.28%	3.34%	4.23%
65-74 years	4.31%	0.48%	0.61%	2.97%	0.99%	1.10%	3.60%	1.19%	2.89%	3.88%
55-64 years	4.16%									
35-54 years	4.09%									
0-34 years	4.53%									
Unknown	4.21%									
Male										
75+ years	4.29%	0.48%	0.61%	2.97%	0.99%	1.10%	3.47%	1.28%	2.61%	3.75%
65-74 years	4.11%	0.48%	0.61%	2.97%	0.99%	1.10%	3.16%	1.23%	2.44%	3.57%
55-64 years	3.96%									
35-54 years	4.06%									
0-34 years	4.50%									
Unknown	4.33%									

Table 138: Counts of driver fatality and serious injury for each Scenario, for combined Australian states, by sex and age group, calculated without the inclusion of NSW, using 2005-2009 passenger vehicle crash data crashes from 2005-2009

		Counts of driver fatality and serious injury produced by Scenarios								
		From Top ranking CWR			From Avg of top ten CWR		From Best CWR by market group and year of manuf.	From Best CWR by year of manufacture	From Best CWR by market group	From Best CWR by market group & popularity
	Actual	all	limited	Popular	all	Limited				
Older driver age groupings										
All Drivers										
75+ years	2089	266	338	1749	546	607	1446	687	1022	1701
65-74 years	2027	280	355	1433	573	637	1322	639	946	1672
55-64 years	3330									
35-54 years	10378									
0-34 years	17369									
Unknown	312									
Female										
75+ years	900	110	140	721	225	250	665	277	473	745
65-74 years	948	125	159	640	256	285	620	274	451	788
55-64 years	1608									
35-54 years	5151									
0-34 years	7632									
Unknown	98									
Male										
75+ years	1185	155	197	1018	318	353	789	404	555	955
65-74 years	1075	153	194	782	313	348	700	357	495	882
55-64 years	1717									
35-54 years	5216									
0-34 years	9713									
Unknown	126									

Table 139: Counts of driver fatality and serious injury for each Scenario, for New Zealand, by sex and age group, using 2005-2009 passenger vehicle crash data crashes from 2005-2009

		Counts of driver fatality and serious injury produced by Scenarios								
		From Top ranking CWR			From Avg of top ten CWR		From Best CWR by market group and year of manuf.	From Best CWR by year of manufacture	From Best CWR by market group	From Best CWR by market group & popularity
	Actual	all	limited	Popular	all	Limited				
All Drivers										
75+ years	357	39	49	237	79	88	304	102	235	317
65-74 years	277	32	41	196	65	73	221	81	174	245
55-64 years	438									
35-54 years	1448									
0-34 years	2878									
Unknown	70									
Female										
75+ years	160	16	21	101	34	38	144	44	114	145
65-74 years	107	12	15	74	25	27	90	29	72	96
55-64 years	217									
35-54 years	598									
0-34 years	938									
Unknown	19									
Male										
75+ years	197	22	28	136	45	51	160	59	120	172
65-74 years	169	20	25	122	41	45	130	51	101	147
55-64 years	221									
35-54 years	849									
0-34 years	1938									
Unknown	42									

Table 140: Available information for calculations of percentage of all licensed drivers and percentage of older licensed drivers (car and all types) for Queensland, New South Wales and Western Australia for 2006 and 2009

	Western Australia				Queensland								New South Wales			
Year of data	2006		2009		2006				2009				2006		2009	
Licence and population data	65+	All Ages	65+	All Ages	60+	70+	65+	All Ages	60+	70+	65+	All Ages	65+	All Ages	65+	All Ages
Passenger Vehicle Licences in millions†				1.21									0.50	3.93	0.56	4.17
All Drivers Licenses in millions				1.69	0.52	0.21		2.83	0.63	0.25		3.05	0.62	4.90	0.71	5.20
Census Population in millions*	0.24	1.96					0.48	3.91					0.91	6.55	0.98	6.96
projected population in millions±			0.30	2.15							0.54	4.27				
% Population Licensed-Car				56									55	60	57	60
% Population Licensed-All				78				73				71	68	75	72	75

*(Australian Bureau of Statistics 2007), (Australian Bureau of Statistics 2007)
‡(Australian Bureau of Statistics 2008),

†(Department of Transport 2010), (Department of Transport and Main Roads 2010), (Transport Roads and Maritime Services 2011)