

Original Paper

People of Advanced Age Who Have either Ceased Driving or Have Never Driven at all

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Octogenarian Group

Aim of this research is to evaluate continued driving by people of an advanced age.

This work is part of the LiLAC Cohort Study presently in New Zealand: - Ceased or Non-Driving.

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Abstract

Background: *A comparable number of advanced aged New Zealand Māori and non-Māori are either still driving, have decided to cease to drive or have never driven. However regardless of which ever group they may fall into there remains a high degree of independence.*

Method: *Under the Transport, Nottingham Extended Activities of Daily Living and Screen II, Neighbourhood subsections questions were directed towards whether the sample group had ever driven, when they stopped driving and why they had decided to cease driving; were they able to get in/out of their car, have any problems obtaining groceries and difficulties in going to their shops. Methods of analysis included binomial logistic regression, chi-square test for association, ordinal logistic regression analysis, Mann -Whitney U test, questionnaire and descriptive analysis.*

Results: *Participants totalled 931 with 421 New Zealand Māori and 510 New Zealand Māori non-Māori.*

New Zealand Māori: *New Zealand Māori aged between 83-86 years presented the highest figures for those found to be (still) driving. Overall New Zealand Māori females also had 1.028 times higher odds of having ever driven compared to that of New Zealand Māori males. Those that had ceased driving both New Zealand Māori males and females had made that decision more than twelve months ago*

(with the most notable number being 88 years of age). Despite a list of possible reasons for ceasing to drive it was personal motivation supplied by respondents that presented a more detailed/informative picture. Both male and female indicated that did get in and out of their car on the own or with difficulty. Of those that did not, it was New Zealand Māori females who made use of outside family members or external sources rather than close family/closer relations. New Zealand Māori males indicated that they either never or rarely had any problems in obtaining their groceries compared to the greater number of New Zealand Māori females. Primarily New Zealand Māori males and females indicated that transporting themselves to the shops was not a problem for them. New Zealand Māori males also walked, were as New Zealand Māori females obtained help. Reasons given for any complications New Zealand Māori males highlighted lack of public transport while New Zealand Māori females said it was due to their health.

New Zealand non-Māori: Similarly, the results of New Zealand non-Māori females also offered greater numbers in those who either continued or had ceased driving. Of those who had stopped driving both New Zealand non-Māori males and females had also made that decision more than twelve months ago. Likewise, with personal incentives being the prime cause behind their decision. New Zealand non-Māori also indicated that they could get in and out of their car on their own or with difficulty. However, some males did go on to say that they did utilise family or household members; whereas females made use of outside help. A lack of transport was particularly identified by the New Zealand non-Māori males when asked about problem in obtaining groceries. Both New Zealand non-Māori males and females expressed health concerns as being their prime reason for having difficulty in getting to their shops. However, females also indicated a feeling of being unsafe, inadequate footpaths and or public transport.

Conclusion: Ceasing to drive primarily resulted through personal motivation with the decision being made generally more than twelve months ago. Continued transportation of themselves to required destinations was not a problem but respondents did indicate possible consequences such as health, lack of public transport facilities, inadequate amenities and unsafe environment.

1. Introduction

Mobility is an essential factor in a person's mental and physical framework. It enables a person to maintain their connections, being a supporting implement both for oneself and others; as well as sustaining personal growth. Whether it had been using a vehicle, or now public transport, taxi, a wheelchair, cycling or walking, mobility, no matter in what form still exists. Recognition therefore of the role continued movement has as part of an older people's life is imperative (Stacey & Kendig, 1997; Ball, Owsley, Stavey, Roenker, Sloanel & Graves, 1998; O'Connor, Edwards, Wadley & Crowe, 2010; Webber, Porterl & Menec, 2010; Kulikov, 2011; Haustein & Siren, 2015; Shergold, Lyonsl & Hubers, 2015; Stav, 2015; Berg, 2016; and Pristavec, 2016).

Cessation

It is essential that before evaluation of possible predictors that may be associated with older drivers' decision to either cease, or to continue driving some broader understanding of the nature of driving should first be addressed. Driving is commonly associated with vision and physical movement. Identifying a driver's ability to, for example, turn the wheel appropriately; move their head and upper body, transfer themselves in and out of their vehicle and whether they have an appropriate eyesight level. Driving instead needs to be recognised rather from a multifaceted skill base, employing a more comprehensive model, one that marries a sensory baseline, motor skills, physical functioning variables and a driver's cognitive capability. Correspondingly, influences on a driver decision to cease driving are similarly multifactorial in makeup (Davey, 2004; Anstey, Lord, & Walker, 2005; Wood, Anstey, Kerr, Lacherez, & Lord, 2008; Hoffman & Mc Dowd, 2010; Adrian, Postal, Moessinger, Rascele, & Charles, 2011; Clapp, Olsen, Danoff-Burg, Houston-Hagewood, Hickling, Hwang, & Gayle-Beck, 2011; and Uc, Rizzo, Johnson, Emerson, Liu, Mills, ... Dawson, 2011).

Dependence / Self-Efficacy

One of the primary aspects associated with a driver's decision to cease driving is the possible change their role within both themselves and their encompassing environment, whether this as an independent individual, their position within their family or as a contributing member of the broader community. Because of such a change in role, drivers may become more dependent upon external sources of support including family, friends, their local community, use of public transport, taxis' or professional services; walking or cycling. Also, this may result in a reduction in a driver's encircling life cycle with possible negative consequences (Finestone, Marshall, Rozenberg, Moussa, Hunt, & Greene-Finestone, 2009; and Freeman, Gange, Munoz, & West, 2006).

Health

Health research into subsequent effects of driving cessation has identified reduced access and use of health care services, increased levels of depression, greater risk of entry to nursing homes and a decrease in out-of-home activity (Freeman et al., 2006; Bartley & O'Neill, 2010; and Clapp et al., 2011). According to Freeman et al. (2006) such consequential effects could be used as a marker in health conditions and severity levels in relation to driving cessation. Outcomes from their research into the association between driver and non-driver probable entry into long-term care (LTC) indicated that even with adjustment being made for daily living activities, help, number of co-morbidities, depression symptoms and cognitive impairment association between driving and LTC entry remained. However, once a person's driving status was entered the framework, the connection with activities of daily living help was found to be no longer significant and the hazard ratios were moderated for other health variables. Similarly, it was also felt that driving cessation may act as an intervening variable delaying entry into LTC (Dodge, Kita, Takechi, Hayakawa, Ganguli, & Ueshima, 2008).

Social / External

The act of driving to many is an expression of one's own autonomy and with that, also contributes to

quality of life (QoL). By ceasing to drive this may in turn place hardships upon older people as an adult. Social isolation being linked with many negative outcomes including depression, a person's self-esteem, reduced community group interaction and declined physical health levels. Dependence upon family, friends and possible linked service mechanisms can similarly place demands both upon the non-driver and their closer social environment (Davey, 2004; Bartley & O'Neill, 2010; Yazdan-Ashoori & ten Hove, 2010; Finestone et al., 2009; and Freeman et al., 2006).

Non-Drivers

In using the term non-drivers', we are classifying this group as those who have never driven a vehicle. However, this does not mean that they also are not a significant cog in the transportation wheel along with continued societal development. In recognising non-drivers', it is therefore important to understand their associated contribution and requirements of transportation (Chin & Menon, 2015). Illustrations of the non-driver's transportation character may come in the form of an individual and/or couple, use of differing forms of transport, maintaining role in community and governmental policy. Examples of this include: the maintenance of independency and correspondingly possible dependency upon others; preservation of ones' health and social contacts; and whether they live in a rural or urban environment. Use of differing forms of transportation and their associated facilities such as footpaths, pedestrian crossings, barriers-free locations, cycle tracks, buses, taxis or trains. Enabling them to maintain their role within society resulting from continued social interaction with family, friends or membership of a service group; use of local facilities such as the library, social get togethers such as for dancing, going to the theatre or movie; or having continued employment. Moreover, the design and implementation of governmental policy that recognises non-drivers as being part of the transportation cycle as well as their continued contribution towards society and its growth (Stacey & Kendig, 1997; Dahan-Oliel, Mazer, Gđinas, Dobbs, & Lefebvre, 2010; Olawole & Aloba, 2014; Chin & Menon, 2015; Haustein & Siren, 2015; and Marin-Lamellet & Haustein, 2015).

Therefore, in continued recognition of the older population, along with their important role they have in the economic, social community and environment consideration must be made from three notable standpoints. Firstly, to evaluate those possible forecasting factors that may have had upon this decision to cease driving, Secondly, that non-drivers are also part of the 'transport philosophy' and thirdly to improve in our understanding of those processes employed by older people when making their own decisions regarding ceasing to drive or not; continued use of varying forms of transport and associated road safety issues.

This is the second piece of analysis of the LiLAC study results involving continued driving by an older New Zealand Māori and non-Māori aged between 75 to 95 years of age. Research here examines those who have either decided to cease to drive or have never driven at any stage in their life. Although all transport related questions taken from the LiLAC study were chosen from not only the Everyday Interests & Activities – Transport section but also the Physical Health – Nottingham Extended Activities of Daily Living (mobility) and Nutrition (obtaining of groceries) sections of the study The

LiLAC Study New Zealand, Te Pu äwaitanga o Ng ä Tapuwae Kia Ora Tonu. (2010); (Dyall, Kēpa, Hayman, The, Moyes, Broad, & Kerse, 2013; Dyall & Kerse, 2010).

2. Method

The LiLAC study is both a quantitative and longitudinal cohort study that considers the lives of advanced aged Māori and non-Māori New Zealanders.

<i>Number</i>	<i>Question</i>
JB3	Have you ever driven a car? (Summary)
JB3a	When did you stop driving?
JB3b	Why did you stop driving? (if ex-driver)

Recruitment of participants

Participants were recruited from both the Bay of Plenty District Health Board and Lakes District Health Board regions. All those New Zealand Māori were aged between 80-90 (born between 1st January 1920 and 31st December 1930), while all the non-Māori New Zealanders were aged 85 years, having been born in the calendar year of 1925. This group was identified through the use of multiple overlapping strategies including the general and Māori electoral roll, primary care databases, word of mouth, Māori tribal networks; and from these sources contacted and invited to participate.

By the time the first wave was run numbers had reduced slightly to 421 (45.22%) New Zealand Māori and 510 (54.78%) New Zealand non-Māori totaling 931 subjects involved in the study.

Measures

Five methods of statistical analysis were used in assessment of the results: (i) Binomial Logistic Regression, (ii) Chi-Square Test for Association, (iii) Ordinal Logistic Regression, (iv) Mann-Whitney U Test and (v) Descriptive Analysis. Results from this analysis will be presented in either tabular or graphical format along with written assessment. IBM Statistical Package for the Social Sciences 20 (SPSS) was used to generate descriptive statistics and post-hoc comparative analysis.

3. Results

Question JB3 *Have you ever driven*

A summary of the results from question JB3 indicated that for both New Zealand Māori and non-Māori females they presented the highest number in both those who had either 'ever driven' and had 'not having driven'. In looking more closely at these results from within the two categories female New Zealand Māori had higher odds of having ever driven a car compared to New Zealand Māori male. Whereas for both male and female New Zealand Māori as age increased there was a similar likelihood in reduction of both gender having ever driven a car.

New Zealand non-Māori males also observed a frequency lower than that expected for not having ever driven and somewhat greater than that expected for those who had ever driven. In comparison, female

New Zealand non-Māori results indicated that those not driving was greater than those expected to be driving.

Complete results may be found in Article 1 Driving of the LiLAC Cohort Study.

Question JB3a *When did you stop driving?*

New Zealand Māori

In asking New Zealand Māori when they had stopped driving they were provided with three options to choose from: (i) less than six months ago, between 6-12 months or (iii) more than twelve months. Of the 24 New Zealand Māori males who answered question JB3a most had done this more than twelve months ago, with the highest number being those aged 83 followed by 85-year old's. A higher number of New Zealand Māori females responded with 46 in total who similarly also stopped driving more than twelve months ago, but unlike the males the majority were aged 88 years, closely followed by 83-year olds and then those aged 87-years (refer to Figures 1a and 1b).

These variables did not statistically significantly predict when New Zealand Māori did stop driving, $F(2, 66) = 0.159, p > 0.189, R^2 = 0.049$. Similarly, with the gender and age variables that did not add statistical significance to the prediction of $p > 0.05$ (refer to Figure 1 and Table 1).

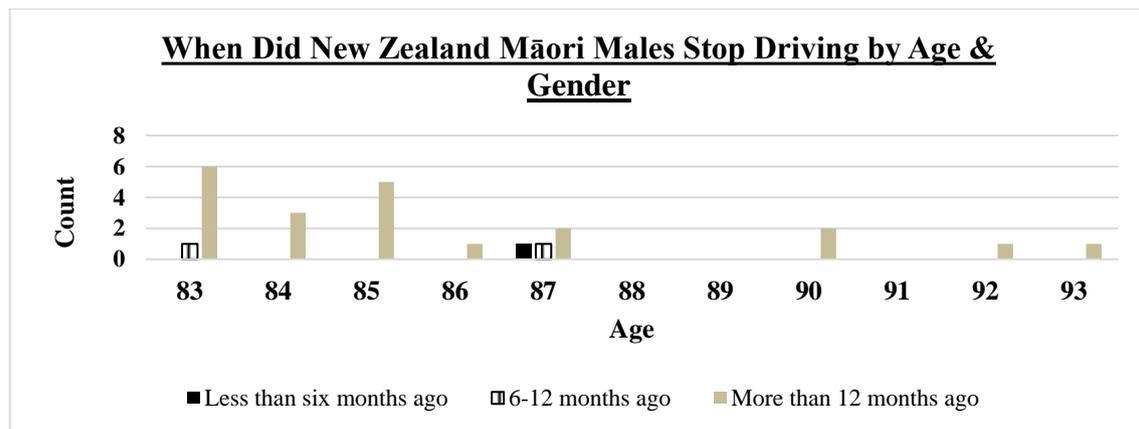


Figure 1a

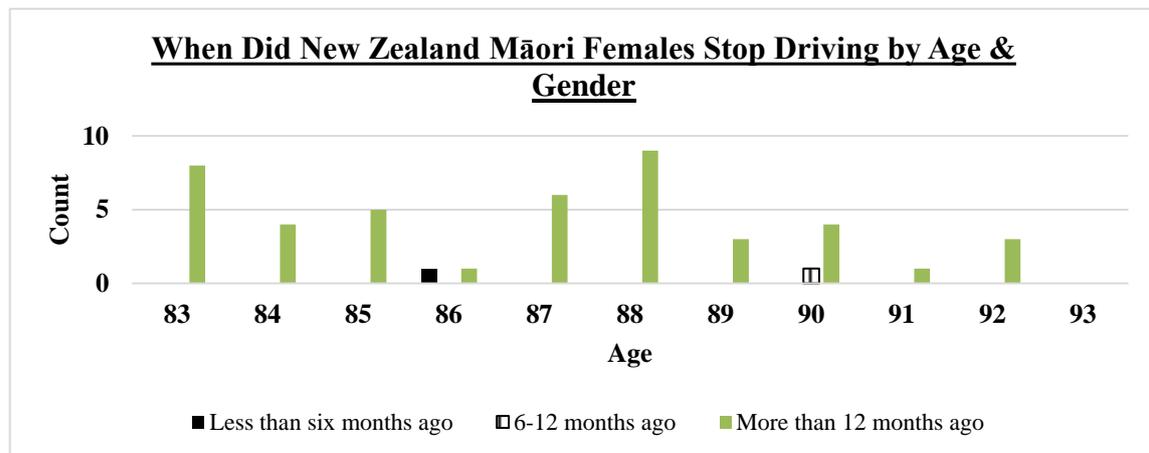


Figure 1b

Table 1.

		Unstandardized		Standardized		95.0% Confidence		
		Coefficients		Coefficients		Interval for B		
Model		B	Std.Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	4.024	1.493		2.695	0.009	1.043	7.005
	Māori Gender	0.178	0.104	0.207	1.707	0.093	-0.03	0.386
	Māori Age	-0.017	0.017	-0.116	-0.954	0.343	-0.051	0.018

a. Dependent Variable: When Did You Stop Driving?

Question JB3a *When did you stop driving?*

New Zealand non-Māori

A very small percentage of New Zealand non-Māori (19.45%) decided to answer question JB3a asking when they did stop driving. Results for both male and female New Zealand non-Māori were very similar in the less than six months and between six-twelve-month categories. However, just over double the number of New Zealand non-Māori females indicated that they had stopped driving more than twelve months ago, this presents an interesting result when only 33 more female New Zealand non-Māori are involved in the study (refer to Figure 2).

Median score for those who have stopped driving between New Zealand non-Māori was not statistically significant between New Zealand non-Māori males (3.00) and New Zealand non-Māori females (3.00), $z = 1.492$, $p = 0.136$ (refer to Table 2).

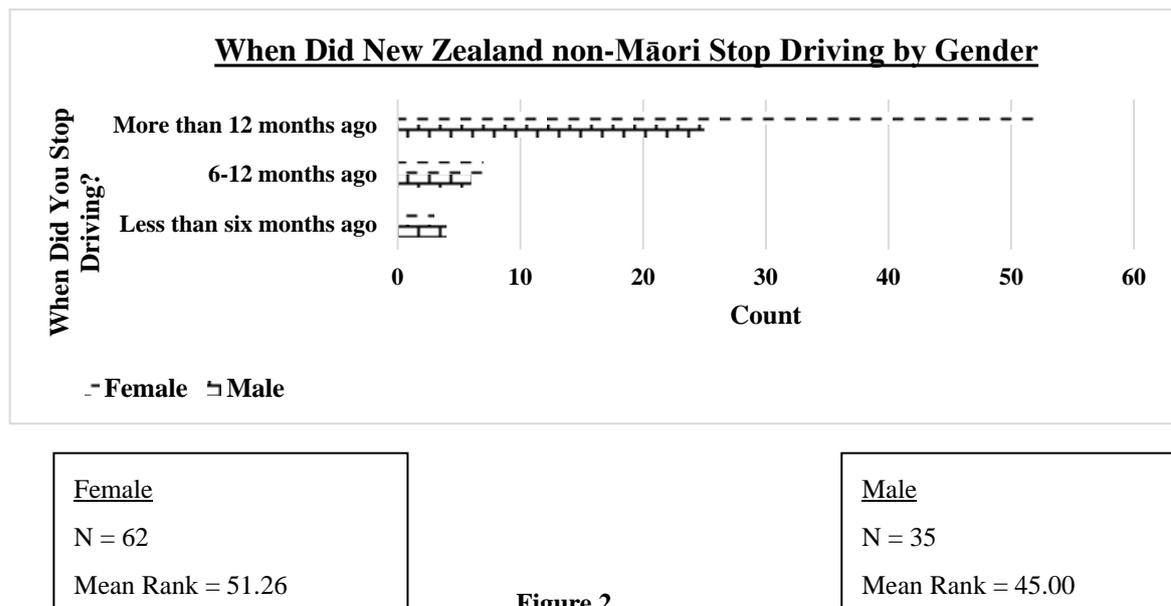


Figure 2.

Table 2.

Standard Error	93.854
Standardized Test Statistic	1.492
Asymptotic Sig. (2-sided test)	0.136

JB3b Why did you stop driving?

In answering question JB3b respondents are provided with six options. If however, they decided that none of these met their requirements they were then able to record their own response in the seventh option: Other Reason (refer to Figure 3).

On viewing initial results, the researcher noticed that many respondents both Māori and non-Māori had chosen to give their own thoughts/decision as to why they had stopped driving rather than just ticking one of the offered options.

- | |
|--|
| <ol style="list-style-type: none"> 1. Vision 2. Illness or Physical Disability 3. Age 4. Loss of Confidence 5. Others Decided 6. Didn't Pass Driving Test 7. Other Reason |
|--|

Figure 3.

Consequently, due to this possible content of material available the researcher has decided to divide the analysis into three sections:

- (i) Analysis of results as they initially stand,
- (ii) Analysis of the content offered only from the seventh option, 'other reason', and then
- (iii) Compiling results from (i) and (ii) and completing a final analysis.

New Zealand Māori

Only 7.28% of New Zealand Māori answered question JB3b with over 90% of the total number of dependent variable cells having a zero frequency

Within that sample nearly 50% were from New Zealand Māori males (42) in comparison to Zealand Māori females (26) (refer to Table 3).

Table 3.

Why Did You Stop Driving? By Gender		
	Male	Female
New Zealand Māori	42	26

Of the first six given causes results indicated that for most New Zealand Māori males they had stopped driving due to an illness or physical disability (11). Followed this the next most significant influencing factors behind the decision made by New Zealand Māori males was vision (6), loss of confidence (6). In comparison for New Zealand Māori females their answers to the identified causes were primarily more evenly distributed between illness or physical disability (6), and loss of confidence (6). Age for both New Zealand Māori males and females was identified but not as a primary cause (refer to Table 4 and Figure 4).

Other Reason for both male and female New Zealand Māori was a significant option with it being the highest number for New Zealand Māori (12) and presenting an equal share between two other options for New Zealand Māori females (6)

Table 4.

Why Did You Stop Driving? - Summary

	New Zealand Māori Males	New Zealand Māori Females
Vision	6	2
Illness or Physical Disability	11	6
Age	5	4
Loss of Confidence	6	6
Others Decided	1	2
Don't Pass Driving Test	1	0
Other Reason	12	6



Figure 4.

Due to the high response rate results from the Other Reason category will be independently examined and then together the results will be re-analysed with those including the first six categories.

JB3b Other Reason - Why did you stop driving?

In reviewing the detail of the answers given the researcher identified nine themes. These included issues commonly associated with older drivers' decision to stop driving, e.g., accident, vision, license, and the influence of family; as well the introduction of other potential causes existing behind older people resolve in ceasing driving e.g. cost, husband, personal choice, still driving and there being no need.

In comparing the responses given by New Zealand Māori and non-Māori the results indicated no difference between the two groups, with similar issues arising in both New Zealand Māori and non-Māori.

It should be noticed when reviewing the original information obtained from everyone some of their responses may be found under more than one heading. This is because the researcher believed that in places cross referencing was applicable. When this had occurred the secondary placement of any statement has been done in *italics*.

Examples of answers given under the nine headings

Accident: Vehicle written off because of an accident, vision or attack.

Cost: Cost of either driving/owning a vehicle, buying a car, or vehicle still requiring servicing

Family: Their children did not like them driving or others drove them around.

Government Legislation: Imposed no choice.

Health: Dementia had begun, medical side effect or GP advised.

Husband: Sold the car, did the driving, refused the car, put them off driving or preferred husband driving

License: No license held or lapsed.

No-Need: No need to drive, no need for a car; and gave vehicle to daughter.

Personal Choice: Personal choice to stop driving, could not be bothered, sold vehicle, didn't like driving, amenities within close distance or car in garage.

Still Driving: Use of another vehicle or still driving,

JB3b Other Reason - Why did you stop driving?

New Zealand Māori

Although eighteen New Zealand Māori males and females (12:6) were recorded as having marked the other reason option some did not necessarily go on to provide a written response. Therefore, the final number of New Zealand Māori who did give a personal reason reduced to eight, with two males and six females making up the final total.

Of the two responses given by New Zealand Māori males in this section one was still driving many different types of vehicle; while the other had no license. The remaining ten just ticked the box but did not provide a reason.

For the predominance of New Zealand Māori females, they had made their own decision to stop driving (personal choice), whereas for the others it was due to their health, the feeling that they had no choice because to government legislation and the use of their family to drive on their behalf even though they still have their license (refer to Table 5).

Table 5.

New Zealand Māori – Female	
Dementia started	Health
Didn't like driving	Personal Choice
Didn't want to drive a car	Personal Choice
Govt. policy imposed - no choice	Government Legislation
Just didn't bother	Personal Choice
Others drive me-still have driver's license	Family (<i>Licence</i>)
New Zealand Māori – Male	
No license	License
Only push & motor bikes & tractor	Still Driving

JB3b Why did you stop driving? (Combining JB3b and Other Reason Results)

New Zealand Māori

Two of the results from New Zealand Māori females were incorporated into previous options provided in the LiLAC study. Health was moved into 'illness and physical disability'; and family was moved into 'others decided'. Otherwise the remaining four results continue under one of the new choice headings provided.

Further reasons given by New Zealand Māori included government legislation, license, personal choice and one informed the researcher that they were still driving.

The age of those who supplied some written response for New Zealand Māori males covered nearly the entire age span (84 to 93 years), whereas remarks coming from New Zealand Māori females were only from those aged 86 and 88 years (refer to Table 6 and Figure 5).

Table 6.

Why Did You Stop Driving?		
New Zealand Māori	Male	Female
Vision	6	2
Illness or Physical Disability	11	7
Age	5	4
Loss of Confidence	6	6

Others Decided	1	3
Don't Pass Driving Test	1	0
Other Reason	10	(-)
Accident	0	0
Cost	0	0
Family	0	*
Government Legislation	0	1
Health	0	*
Husband	0	0
Licence	1	0
No-Need	0	0
Personal Choice	0	3
Still Driving	1	0

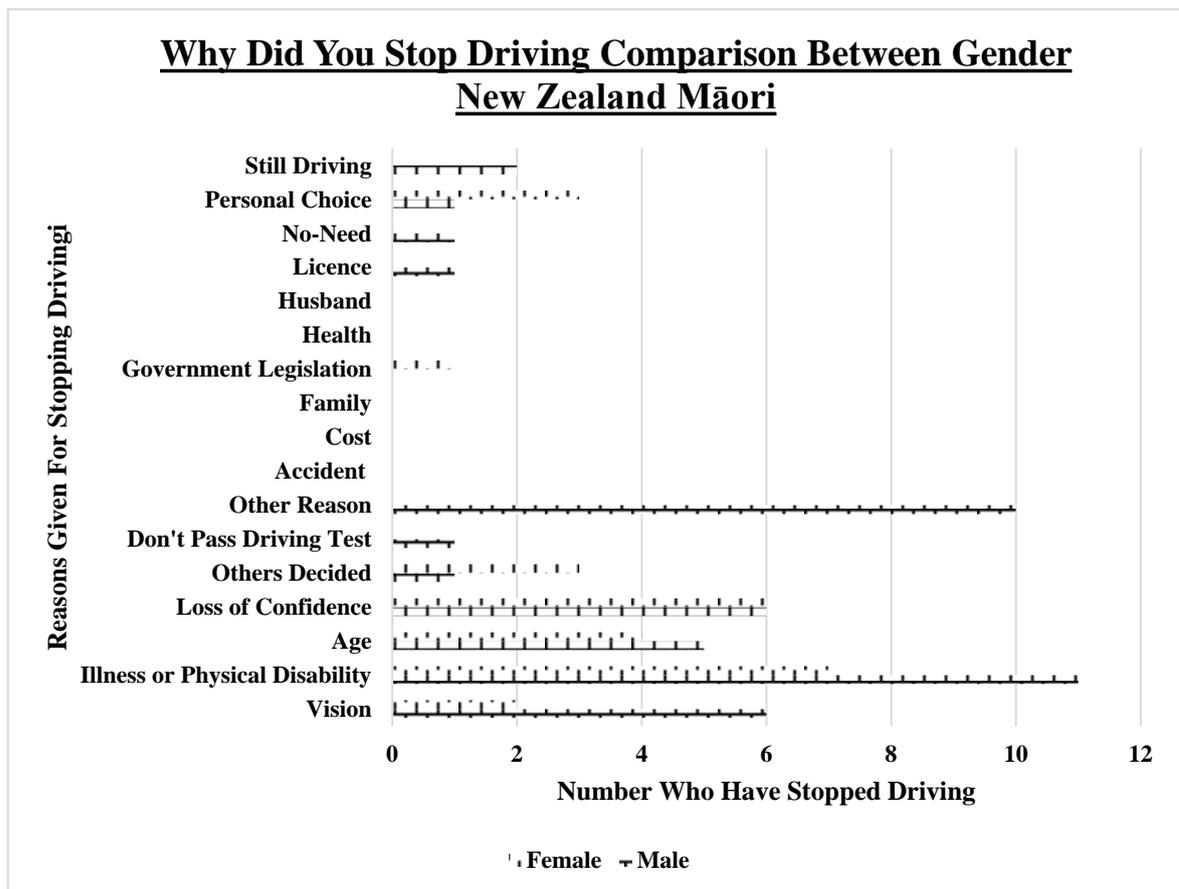


Figure 5.

JB3b Why did you stop driving?***New Zealand non-Māori***

Similarly, to New Zealand Māori a small percentage of New Zealand non-Māori answered question JB3b (85). Only 9.11% of New Zealand non-Māori answered question JB3b with just over 90% of the total number of dependent variable cells having a zero frequency.

Recognising the slightly larger non-Māori female population number 63.5% gave answer to this question (refer to Table 7).

Table 7.

Why Did You Stop Driving?		
	Male	Female
New Zealand non-Māori	31	54

Like New Zealand Māori males, New Zealand non-Māori males identified illness or physical disability as their most influential factor upon their decision to cease driving. Following this vision was the only other notable aspect (5) likely to influence their decision.

Although illness and physical disability (19) presented the highest total for New Zealand Māori females this was also closely followed by vision (13) and then loss of confidence (7).

As with New Zealand Māori, New Zealand non-Māori also decided that they wanted to be able to provide their own reason as to why they had decided to stop driving.

Table 8.

Case Summaries		
Why Did You Stop Driving?	New Zealand non-Māori Males	New Zealand non-Māori Females
Vision	5	13
Illness or Physical Disability	12	19
Age	1	0
Loss of Confidence	2	7
Others Decided	1	3
Don't Pass Driving Test	2	1
Other Reason	8	11

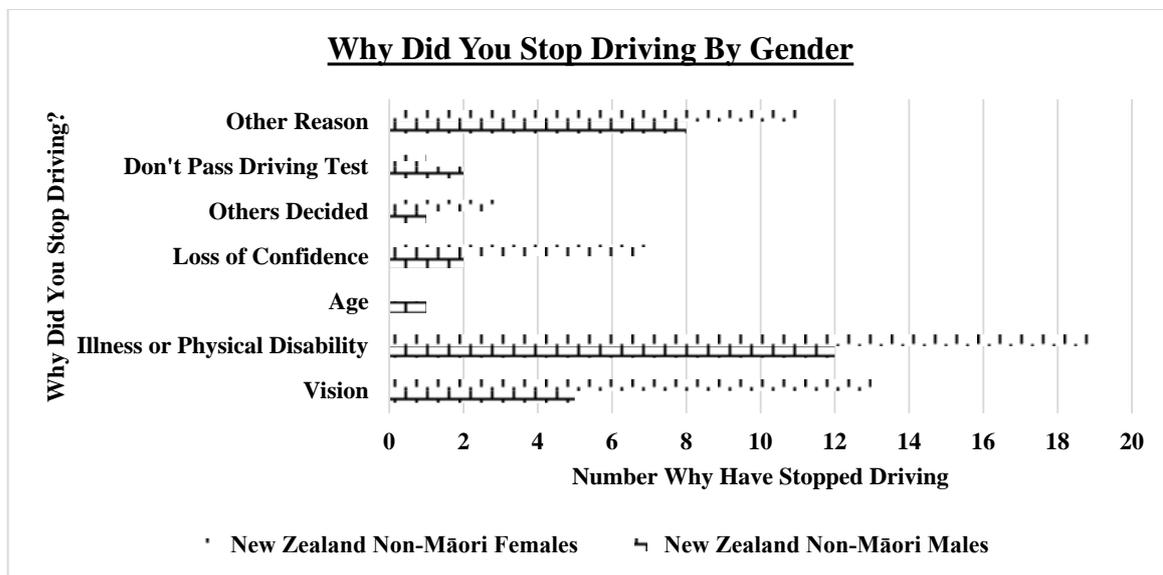


Figure 6.

Due to the high response rate results from the Other Reason category will be independently examined and then together the results will be re-analysed with those including the first six categories (refer to Table 8 and Figure 6).

JB3b Other Reason - Why did you stop driving?

New Zealand non-Māori

Although only 19 New Zealand non-Māori were recorded as having ticked the Other Reason option, 34 in total also provided some written response. Of these 67.6% were from female New Zealand non-Māori.

Reasons given by New Zealand non-Māori covered quite a wide range with both males and females offering six different of reasoning behind their decision. Although in saying similarity in choice was only found in categories: no-need, personal choice and family.

Other influences identified by males included financial aspects and their health.

Females decision making in comparison were also affected by then having experienced an accident, the influence of their husband and licence lapsing (refer to Table 9).

Table 9.

New Zealand non-Māori Female	
Accident/Attack	Accident (<i>Health</i>)
Car accident because of vision	Accident (<i>Vision</i>)
Car written off in an accident	Accident
Couldn't be bothered	Personal choice
Didn't need to	No-need

Didn't need to drive	No-need
Didn't need to give car to daughter	No-need (<i>Family</i>)
Husband believed he could do everything	Husband
Husband did the driving	Husband
Husband died sold the car	Husband
Husband put me off going for my test	Husband
Husband refused the car	Husband
Husband retired	Husband
Husband sold the car	Husband
Just didn't drive; Husband did	Personal choice (<i>Husband</i>)
Kids don't like her driving	Family
Left driving to husband	Husband
My license lapsed while overseas; never renewed	License
No car	Personal choice
No need for a car	No-need
Personal choice	Personal choice
Preferred husband to drive & health	Husband (<i>Health</i>)
Time to give up	Personal choice
New Zealand non-Māori Male	
Amenities in walking distance; Decided to stop	No-need (<i>Personal choice</i>)
Cost of driving/owning a vehicle	Cost
Couldn't afford it	Cost
Daughter said so	Family
Felt that didn't need to	No-need
Garage had car	Personal choice
GP advised to stop driving	Health
Thought 80 was a good time to stop	Personal choice

JB3b Why did you stop driving? Combining JB3b and Other Reason Results

Some of the initial categories remain (illness or disability and others decided); while certain newly introduced reasons (health and family) have been incorporated in with these same classifications; However, more recent reasoning given ('no-need' for them to stop driving, their own personal choice and that some were 'still driving) have been now included in with the analysis.

New Zealand non-Māori female results highlighted the choice 'others decided' with the incorporation of their family and husband specification under this category.

Further reasons given by New Zealand non-Māori included license, no-need, personal choice and one informed the researcher that they were still driving (refer to Table 10 and Figure 7).

Table 10.

Why Did You Stop Driving?		
New Zealand non-Māori	Male	Female
Vision	5	13
Illness or Physical Disability	13	19
Age	1	0
Loss of Confidence	2	7
Others Decided	2	11
Don't Pass Driving Test	2	1
Other Reason	8	11
Accident	0	3
Cost	3	0
Family	*	*
Government Legislation	0	0
Health	*	0
Husband	0	*
Licence	0	1
No-Need	2	4
Personal Choice	2	5
Still Driving	1	0

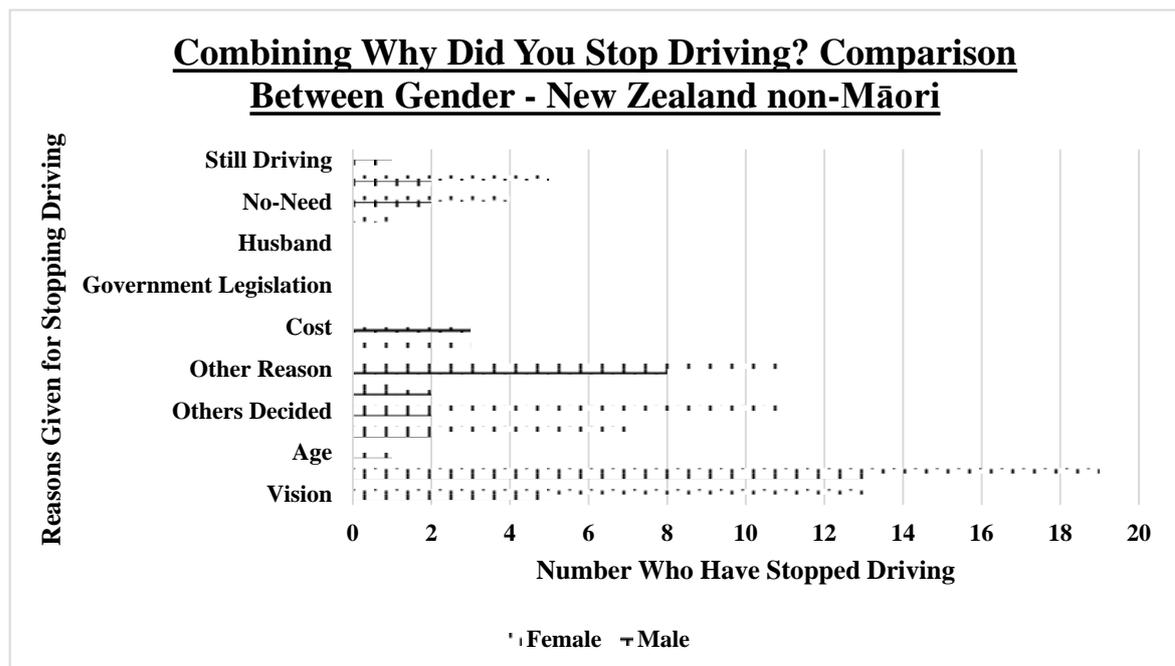


Figure 7.

JB3b Overall Summary of ‘Why did you stop driving?’

After reviewing the content of the first six options offered in question JB3b along with the detail of the written response obtained from the Other category the researcher decided to combine the two. This is because although, for example the family and husband related factors could have been put under the ‘others decided’ the researcher does not feel that this provides enough detail and understanding in older drivers’ decision to stop driving and as to why they did (or did not).

Aside from the six choices initially offered in the LiLAC Questionnaire New Zealand Māori also introduced another six factors that had some influence upon their behaviour (family, legislation, health, licence and personal choice). Behaviour that included a continuation of driving and/or holding of their licence (refer to Table 11).

New Zealand Māori**Table 11.**

Why Did You Stop Driving?		
New Zealand Māori	Male	Female
Vision	6	2
Illness or Physical Disability	11	6
Age	5	4
Loss of Confidence	6	6
Others Decided	1	2
Don’t Pass Driving Test	1	0
Other Reason	12	6
Accident	0	0
Cost	0	0
Family	0	1
Government Legislation	0	1
Health	0	1
Husband	0	0
Licence	1	0
No-Need	1	0
Personal Choice	1	3
Still Driving	2	0

New Zealand non-Māori

New Zealand non-Māori introduced another three factors, involvement in an accident, costs associated with keeping a car and non-Māori females’ decision being influenced by their husbands’ contribution (refer to Table 12).

Table 12.

Why Did You Stop Driving?		
New Zealand non-Māori	Male	Female
Vision	5	13
Illness or Physical Disability	12	19
Age	1	0
Loss of Confidence	2	7
Others Decided	1	3
Don't Pass Driving Test	2	1
Other Reason	8	11
Accident	0	3
Cost	3	0
Family	1	1
Government Legislation	0	0
Health	1	0
Husband	0	7
Licence	0	1
No-Need	2	4
Personal Choice	2	5
Still Driving	1	0

4. Discussion

Research for this second article focused on those of the older New Zealand Māori and Non-Māori population group that presently still drive a vehicle and those who had either never driven at all or had decided to give-up driving. Questions this time were taken not only from the Transport category contained within the Everyday Interests and Activities section, but this time also from the Physical Health, Nutrition, Housing & Environment divisions. Here respondents were asked whether they had ever driven, when and why they stopped driving; whether they had any difficulty in getting in or out of a car, any problems in obtaining their groceries, and whether respondents had any troubles in transporting themselves to their shops.

New Zealand Māori

Within the New Zealand Māori population females overall presented the highest number in both those who had ever driven and those who had not driven at all. Though as both male and female New Zealand Māori aged results did indicate a reduction in those who had ever driven. Of those who had already stopped driving the majority had made this decision more than twelve months ago with a noticeable number in the 83 and 88-year age group for New Zealand Māori females. From the list

provided as to the causes behind their decision to stop driving New Zealand Māori males indicated that other reason closely followed by illness or physical disability. Whereas for New Zealand Māori females they equally chose illness or physically disability, loss of confidence and other reason. Within their personal listings provided by both New Zealand Māori and non-Māori; male or female there was little variation in their reasons. Under the collective headings were such issues as an accident, cost, family, government legislation, health, husband, license, no-need, personal choice and that they were still driving. In general, male and female New Zealand Māori results signified that they were still capable of getting in and out of their car, continued to shop and did not have any difficulty in going to the shops. To do this they primarily used the car although walking obtaining help from another member/source or catching a bus was correspondingly listed. However, in looking at these results it was apparent that having problems with the availability of public transport was equally identified by both male and female as a reason for them not being able to utilise their shops; along with health similarly presenting a comparable cause. New Zealand Māori female further indicated feelings of being unsafe and having problems with footpaths as other reasons.

New Zealand Non-Māori

As with New Zealand Māori females New Zealand non-Māori females similarly presented the highest figures in those that had ever driven and those who had not. Pre-twelve-month period was also the general timeframe in which both male and female New Zealand non-Māori had given up driving, but with females having the highest figures. Initially male and female New Zealand non-Māori indicated that they could enter or exit the car. However, with further investigation it was apparent that males did go on to make use of household members or family; while females were seen to also utilise other possible sources of help. Following use of car, New Zealand non-Māori males primarily walked and then obtained help; whereas New Zealand non-Māori females' data was in the reverse. As with New Zealand Māori lack of transport was again the prime reason behind them having problems in obtaining their groceries. New Zealand Māori and non-Māori females particularly noting such concern. Health was the main reason given by New Zealand non-Māori with feeling of being unsafe footpaths and bus timetables as further reasons given by female New Zealand non-Māori.

It is interesting when considering older drivers' ability to decide whether to cease driving or not, society expects them to be able to make an informed decision (Marottoli, Ostfeld, Merrill, et al., 1993). However, at the same time there is also a failure by society to recognise possible hardships that may have similarly arisen, whether they be internal and/or external in nature because of this decision (Freeman et al., 2006). Such a decision may have a multifactorial effect upon an older person's lifestyle: whether it is of themselves, their position inside their family grouping and their maintained inclusion within their community lifestyle.

Therefore, to understand older drivers and their decision to cease driving, reduce the time and circumstances in which they drive or to continue driving consideration needs to make both individual as well as their surrounding environment. Recognition therefore from two important standpoints. Firstly,

to evaluate those possible forecasting factors that may have an influence upon this decision as to whether to continue with their driving. Secondly, to improve our understanding of those processes employed by older drivers when making their own conclusion. While researching this second area it became apparent that to obtain an improved understanding of the older driver circumstances, licensing evaluation and associated legislation also needs to be recognised in conjunction with their decision.

Policy

In with that above argument on assessment for driver licence maintenance or cessation (Ott, Heindel, Papandonatos, Festa, Davis, Daiello, & Morris, 2008) in their study of drivers with Alzheimer's disease concluded that lack of national standards in the United States and deficient standardisation of cognitive testing that has been validated for driving skills, this presented a quandary for both neurologists and other professionals in the role of evaluation and treatment. This is an important issue when it comes to ensuring public road safety for the future as well as the 'the establishment' recognising the possible future impact of this growing mobile older population.

Results from a United Kingdom policy brief on legislation regarding older drivers indicated that there does not appear to be a self-restricted licensing system in place anywhere throughout the world (ILC-UK, 2011). Though systems do exist that impose some licence restrictions upon older drivers whether it be reducing the length of time an older driver's licence remains valid or placing restrictions on the circumstances in which they may drive. However, within that cycle (i) medical checks and/or (ii) driving assessment are the most commonly employed procedures.

The former approach generally adopted by European countries. In Denmark, the length of time covered by a licence gradually decreases from four to one year between the ages of 70 to 80 years. After 80 the licence must renew their licence yearly. Spain reduces licence validity from ten to five years at the age of 45, and to two years at the age of 70. Ireland allows for 1-3-year renewals after the age 70, with the period being predetermined by medical examination. Finland requires a medical check an age of 45, 60, 70 and five years thereafter. Whereas the latter approach (graduated licensing) is common in North America and Australia with it being determined at regional levels (Griffith, 2007; Berry, 2011).

In New Zealand, a new system for older driver licensing was introduced towards the end of 2006. In this new system, the previous mandatory on-road test that was required by 80-year old's and two yearly afterwards to re-licence was removed. However, the medical certificate of fitness to drive, with a referral and support systems for medical practitioners remains, along with education and information for not only the medical practitioners but also other health practitioners and for the older drivers (Khawaja & Thomson, 2000; New Zealand Transport Agency, 2009; Carpenter, Puginl & Stephenson, 2010; Ministry of Transport, 2014; and New Zealand Transport Agency, 2015).

Cessation

Driving cessation as associated with advanced aged drivers needs to be considered through several independent predicting variables. Predicting variables that together form a multivariate decision-making model rather than the more commonly used relicensing model which is bi-variate in

nature and linking specifically vision and physical ability with driving skill. In consideration of probable influencing factors behind an older driver's decision to either continue with their driving or to cease, this research aims to evaluate identified predictors: levels of pain, e.g. arthritis; social, health, vision, cognition, diabetes-2 and road safety. Safety levels that need to be recognised from not only the driver's perspective but also in relation to their passengers as well as those of other road users (Odenheimer, Beaudet, Jette, Albert, Grande, & Minaker, 1994; Dubinsky, Stein, & Lyons, 2000; Withaar, Brouwer, & van Zomeren, 2000; Davey, 2004; Adler, Rottunda, & Dysken, 2005; Uc, Rizzo, Andersen, Sparks, Rodnitzky, & Dawson, 2006; Molna, Marshall, Man-Son-Hing, Wilson, Byszewski, & Stiell, 2007; Vingilis & Wilk, 2007; Dawson, Anderson, Uc, Dastrup, & Rizzo, 2009; Johnson, Deary, McGue, & Christensen, 2009; Mathias & Lucas, 2009; Dawson, Uc, Anderson, Johnson, & Rizzo, 2010; Edwards, Bart, O'Connor, & Cissell, 2010; Desapriva, Wijeratne, Subzwari, Babul-Wellar, Turcotte, Rajabali, Kinney, & Pike, 2011; Süner & Turkey, 2011; Uc, Rizzo, Johnson, Emerson, Liu, Mills, ... Dawson, 2011; Aksan, Anderson, Dawson, Johnson, Uc, & Rizzo, 2012; Beglinger, Prest, Mills, Pailsen, Smith, Gonzalea-Algre, ... Uc, 2012; Di Stefano & Macdonald, 2012; Emerson, Johnson, Dawson, Uc, Anderson, & Rizzo, 2012; and Morbidity and Mortality Weekly Report, 2013).

Assessment

Driving assessment is an exercise in risk evaluation and management, but for it to proceed productively, servicing both that of the driver as well as that of the associated authorities, it similarly needs to be comprehensive in both its composition and understanding of the population in which the assessment is being directed towards. For the assessment of older person's driving practices to be conducted in a constructive manner, it is apparent that a more complex method of approach should be developed; an assessment that moves beyond that commonly-believed approach of driver vision and physical agility. Consequently, enabling the establishment of an integrated process that recognises the correlation between the older drivers and their (i) self-awareness; (ii) their assessor and (iii) the type of procedures employed for their driving evaluation. Alongside such a development, and particularly because of the expanding number of older drivers, (iv) the re-examination of the presently employed method of driver licence appraisal, and existing (v) road safety legislation should also be considered. Such a consideration would therefore acknowledge the significance of these five elements in association with driver cessation. Therefore, providing more support for the advanced age group in their decision to either maintain their licence or to cease driving is therefore essential.

Licensing evaluation procedures and associated governmental legislation should now acknowledge the important contribution of older drivers themselves as well as their environmental concerns in both the design and administration of the licensing evaluation system. In line with such development probable predictors should not be considered from a simple black and white standpoint.

Through re-training as is already offered in the assessment of younger drivers applying for a licence this should also become a natural part older drivers' licence, their independence and continued position within society. Results have already indicated that through such training improvements have resulted in

older people being able to re-take their test. As already noted earlier on by the researcher, in line with the implementation processors used by older drivers, the connection with licensing evaluation procedure and governmental legislation also needs to be recognised as part of the decision-making jig-saw.

Unless there is both an understanding and recognition of the impact by older drivers on our roads it is likely that little, if any, of the required change will be made to the assessment procedures. Being able to drive for an older person exists beyond the movement from point A to point B. To them it incorporates a wider spectrum of ideals as should similarly be included as part of any assessment procedure in the future. Driving assessment could therefore develop a system in reverse to that already designed for younger drivers. Instead of a step-up jig-saw pieces to enable a younger driver to obtain their licence have one that allows the older driver to step-down (take away the pieces) to instead remove themselves piece-by-piece from the driving system.

Still Driving

Driving, full-time or reduced to an older person is an important cog aiding the turn of their wheel of independence: a wheel that enables this person to maintain their individuality and play a contributory role in their quality of life, rather than being one that may compel them to rely more greatly on other individuals, public service transport systems and in particular their time schedule choices.

With the present and projected growth in the number of advanced aged driver's mobility plays a prime role in their ability to maintain their personal daily activities and involvement in the family. Travel is an important element in the quality of the older person's life, demonstrating the wider 'automobility' of the advanced age group. Studies of the possible consequences resulting from driving cessation have indicated an increase in the level of specific health conditions including depression and decreased out-of-home activities. This is particularly relevant in countries such as New Zealand that have a variable public transport network throughout the entire country and within its differing community (local) environments.

The skill of driving is diverse in its associated requirements. One that employs a more comprehensive model that marries a driver's sensory baseline, motor skills, physical functioning variables and cognitive ability. As a result, enabling people to maintain their independence and contribute to their quality of life. Furthermore, factors that may influence this advanced age groups decision to cease their driving are similarly multifaceted in nature involving a complex number of variables.

Older non-drivers and drivers are a growing population group who have already and will continue to contribute to society. Confidence exists in older drivers' ability to make decisions in their daily living so why is not a similar recognition apparent regarding driver cessation and the associated system? Alongside such recognition there also needs to be a comparable transport system. One that looks beyond just that of the vehicle but is also seen as a living membrane. Recognising therefore transport accessibility beyond that of not only roads and vehicles but one that is equally analogously with that of requirements of both the rural and urban environments; walking routes, pedestrians and pedestrian safety; cycling and cycleways; scooters, taxis, mini-buses, buses and the availability of bus routes;

barrier-free environments, community cars and buses and so on (Stacey & Kendig, 1997; Olawole & Aloha, 2014; Chin & Menon, 2015; Hausteine & Siren, 2015 and Marin-Lamellet & Hausteine, 2015). This would therefore enable the present, and future generations to be part of a more inclusive society that is serviced by a comprehensively integrated transport system.

5. Conclusion

There is a necessity that present and future older generation are acknowledged as still being contributing participants in the design and implementation of transport policy overall. Rather than as a population group primarily but being viewed from almost a simplistic black and white standpoint (or different sides of a coin). You exist as either as a contributing member while still driving or not through your use or lack of use of a vehicle. Instead this generation requires sustained recognition of its ongoing contribution towards governmental transport strategy. A strategy that acknowledges therefore the varied transport picture that maybe associated with such a generation. Whether it be that they remain driving, and of varying distances; have re-licensed, reduced their use of their vehicle or decided to stop driving overall.

With such inclusion and recognition there should also come/be the natural provision of other reliable transportation facilities that . Amenities therefore with the intention of such as convenient and safe walk routes, provision of bussing that includes appropriate amenities, time frames and planning for future expansions: subsidized taxi, use of scooters, cycling, support for continued application of regular rural bus services, subsidized council/retirement village bus trips and usage of minibuses with collection points and times. A system that would therefore enable this generation to continue: shopping, doctor's visits, going to the library, coffee meet, movies, social event or being involved in either voluntary or paid work; and remain as a recognised contributing factor of their society.

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