

Original Paper

Use of another Driver or other form of Transport by People of an Advanced Age

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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: - Driven by someone else or use of other forms of transport.

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Abstract

Background: *A comparable number of advanced aged New Zealand Māori and non-Māori are presently driven by someone else or use other forms of transport.*

Method: *Everyday Interests and Activities – Transport subsection of the LiLAC study provided the question area for analysis. Enquiry focused on whether older people did use private car transport driven by someone else, were questioned who was their most regular driver, how often did someone else drive them in a typical week and what distance they drove in a typical journey, whether they had used other forms of transportation, if they had problems obtaining their groceries and did they provide transport in the form of car/assistance for others. Methods of analysis included binomial logistic regression, chi-square test for association, ordinal logistic regression, Mann-Whitney U test and descriptive analysis.*

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

New Zealand Māori: *A higher ratio of New Zealand Māori males were transported making use of their daughter. Most of such trips were made only once a week with more males travelling between 1.5-20.5*

kilometres, while both males and females covered longer distances of 25.5-80+ kilometres. New Zealand Māori were not seen to have not made use of other forms of transport in the last twelve months and very rarely had any problem obtaining their groceries. New Zealand Māori females aided other members of the family, while New Zealand Māori males provided such a service to people outside of their family.

New Zealand non-Māori: Similarly, New Zealand non-Māori males were also seen to have made greater use of private transport provided by their daughter. In comparison there was almost a 50:50 split between those New Zealand non-Māori females who did and those who did-not make use of such a service. Of those who did such a service was primarily provided by their spouse followed by their daughter. Like New Zealand Māori, non-Māori New Zealanders generally only made use of such transport once a week or not at all. Trips taken by either male and female New Zealand non-Māori was firstly between 1.5-8, and then between 8.2-20.5 kilometres. More New Zealand non-Māori males had use of other forms of transport; while again there was practically a 50:50 split between those females who did and those who did not. Like New Zealand Māori, New Zealand non-Māori male and female very rarely had any problem obtaining their groceries. Both New Zealand non-Māori males and females were seen to provide care/assistance for that outside of the family.

Conclusion: Although as is often expected the majority both New Zealand Māori and New Zealand non-Māori representatives were seen to utilise family (daughters and spouse) for transportation. However, use of such a provision was generally restricted to only once a week and in assessing distance, consideration also needs to be made of respondent geographical location, especially in line with placement of main services. However, despite the use of such a transportation facility independent mobility remained with both rural and urban population groups. Future older generations will have experienced a closer relationship with motor vehicle use. Consequently, any transportation policy needs to be designed in line with sustaining the provision of goods, services, employment, social opportunities and membership of the community.

1. Introduction

Mobility is a consequential factor in the continued maintenance of a healthy and growing lifestyle for older people. Driving and/or being driven by a spouse is frequently considered as being synonymous with a person and their independence. A vital factor therefore that facilitates community engagement, access to services, social participation, paid or voluntary employment; shopping and physical activity (Dickerson, Molnar, Eby, Adler, B élard, Berg-Weger, et al., 2007; Kua, Korner-Bitensky, Desrosiers, Man-Son-Hing, & Marshall, 2007; Oxley, Langford, & Marshall, 2010, Webber, 2010; and Stinchombe, Odenheimer, & B élard, 2015).

Maintenance of mobility is an important element that can be synonymized with active ageing and reducing the possible risk of disability. Older people that are still able to perform their everyday activities but may be restricted in the daily movements due to an overarching mobility impairment

(Hirvensalo, Rantanen, & Heikknen, 2000; von Bonsdorff, Rantanen, Laukkanen, Suutama & Heikkinen, 2006; Groessi, Kaplan, Rejeski, Katula, King, Frierson et al., 2007; Mackett, 2015).

Although, any reduced movement in one's life cycle may result in feelings of isolation or loneliness, and something that can be experienced by older people in both rural or urban settings (Stinchombe, Odenheimer, & Bedard, 2015). Because of this family and friends are commonly an integral part of any person's life and consequently relied upon to address their transportation needs (Rosenbloom, 2001; Azad, Byszewski, Molar, & Amos, 2003; DeCarlo, Scilley, Wells, & Owsley, 2003; and Davey, 2007). Families in India are an integral part of the health care team for older patients requiring acute care (Bhalla, Suri, Kaur, P., & Kaur, S., 2014). Within Tanzania the context of mobility for older people is strongly displayed through their childcare of their grandchildren. A mobility pattern though that is bound together with the older people's care for their grandchildren, along with local children and grandchildren who in turn assist with older people's access to goods and services (Porter et al., 2013). In Manitoba, mid-Western Canada province, 29 rural districts examined community age-friendliness and its relationship with health-related outcomes in a rural context. Results from the study demonstrated that age-friendliness improved 'life satisfaction and self-perceived health' within such an environment (Menec & Nowicki, 2014). However, any action by a family member may be considered as accountability rather than it being part of their natural role as a relative or friend (Stinchombe et al., 2015).

An understanding of how older people may have been driven by someone else or used other forms of transport has been investigated in the fourth article with New Zealand Māori and non-Māori from the LiLAC study. Research in this field has been directed towards whether older people do utilise private car transport driven by someone else, who is their regular driver, how often do they employ the services of this person and to what distance; have they also engaged any of these other methods of transport, have any transport problems obtaining groceries and in turn to they offer and care or assistance the provision of transport. These questions were obtained from the Transport segment of the Everyday Interests & Activities section; and, the Nutrition and Support Needs divisions (Dyall & Kerse, 2010; Dyall, Kēpa, Hayman, The, Moyes, Broad, & Kerse, 2013; Kerse, Muru-Lanning, Rolleston, & Teh, 2015).

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.

The data presented in the fourth piece of analysis of LiLAC results had been obtained from the Transport subsection of Chapter 11 - Everyday Interests and Activities. Questions here are directed towards whether older people employed private car transport driven by someone else, who was their most regular driver, how often they made use of such a service, what distances they went and whether they had employed any other forms of transport.

<i>Number</i>	<i>Question</i>
JB4	Do you use private car transport driven by someone else (not taxis)?
JB5	Who is the person who is your most regular driver?
JB5a	How often does someone else drive you in a typical week?
JB5b	How far do you go with someone else on a typical journey?
JB7	Have you used other forms of transport in the last twelve months? e.g. taxi, minivan, subsidised bus etc.

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

11. Everyday Interests and Activities Transport

JB4 *Do you use private car transport driven by someone else (not taxi)?*

New Zealand Māori

About a quarter of the New Zealand Māori population (154) involved in the LiLAC study answered question JB4 enquiring whether they used private car transport driven by someone else, aside from taxis. New Zealand Māori male use of private car transport driven by someone else was significant compared to that of New Zealand Māori females.

New Zealand Māori males had a 0.402 times higher odds of making use of private car transport driven by someone else (not taxis) than New Zealand Māori females.

Increasing age was also associated with an increasing likelihood of New Zealand Māori male (0.444) using private transport driven by someone else (not taxis) compared to that of New Zealand Māori females (refer to Table 1).

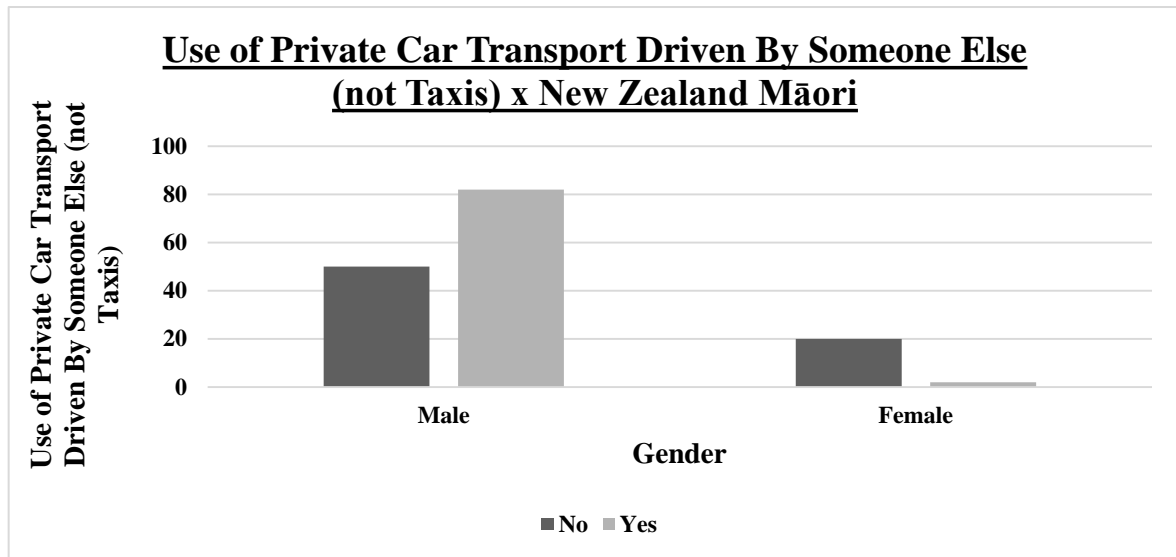


Figure 1.

Table 1.

Variables in the Equation		B	S.E.	Wald	Df	Sig.	Exp(B)	95% Confidence Interval	
								Lower	Upper
Step 1	New Zealand Māori	-0.912	0.376	5.883	1	0.015	0.402	0.192	0.839
	AgeMāori	-0.812	0.372	4.779	1	0.029	0.444	0.214	0.919
	Constant	1.774	0.879	4.077	1	0.043	5.895		

a. Variable(s) entered on Step 1: New Zealand Māori2, Age Māori.

JB4 Do you use private car transport driven by someone else (not taxi)?

New Zealand non-Māori

A high number of New Zealand Non-Māori population involved in the LiLAC study answered question JB4 enquiring whether they used private car transport driven by someone else, aside from taxis refer to Figure 2).

A chi-square test for association was run between gender and the preference of New Zealand Non-Māori use of private transport by someone else (not taxis). Results were statistically significant having an association between gender and the use of private car transport driven by someone else (not taxis) $X^2(1) 7.226, p = 0.007$ (refer to Table 2).

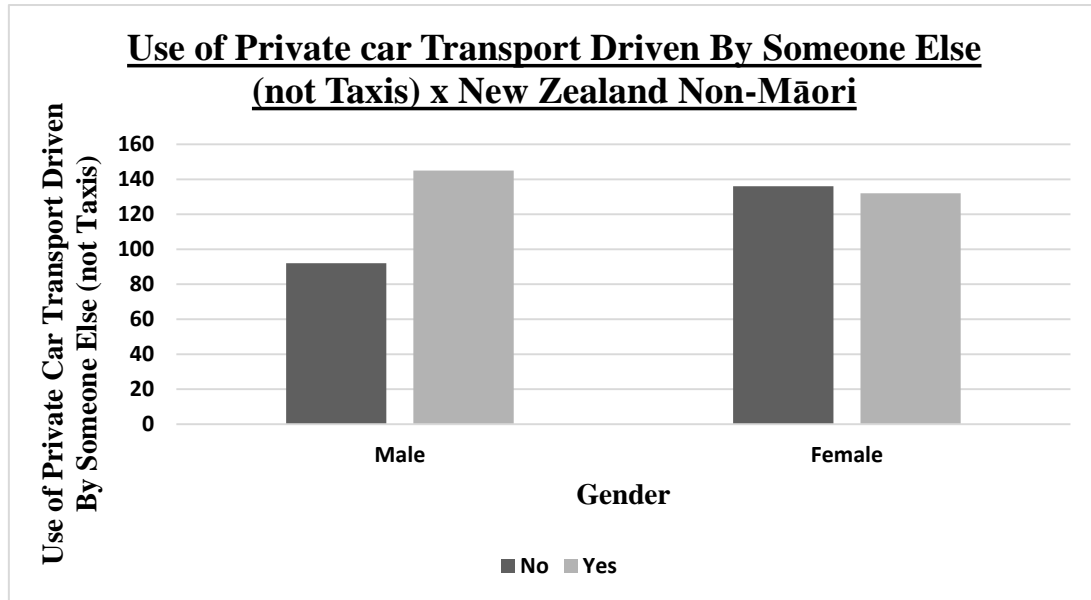


Figure 2.

Table 2.

Chi-Square Tests						
	Value	df	Asymp. (2-sided)	Sig.	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-square	7.226 ^a	1	0.007			
Continuity Correction ^a	6.752	1	0.009			
Likelihood Ratio	7.251	1	0.007			
Fisher's Exact test					0.007	0.005
N of Valid Cases	505					

JB5 Who is the person who is your most regular driver?

In answering question JB5 respondents were provided with twelve options. Within this grouping choices ranged from relations of varying degrees, neighbours, friends, co-workers, members of a group, someone who has been paid and to those who have not used anyone at all (refer to Table 3).

1. Spouse
2. Daughter
3. Son
4. Sibling
5. Other Relative
6. Your neighbours
7. Co-workers
8. Church members
9. Club members
10. Paid person
11. Any friend not included in these categories
12. No-one

Table 3.*New Zealand Māori*

A small percentage of New Zealand Māori answered question JB5 (9.65%), (refer to Table 96). Inside of that grouping however a noticeable number of New Zealand Māori males responded with 86 in comparison 4 New Zealand Māori females (refer to Table 4).

Table 4.

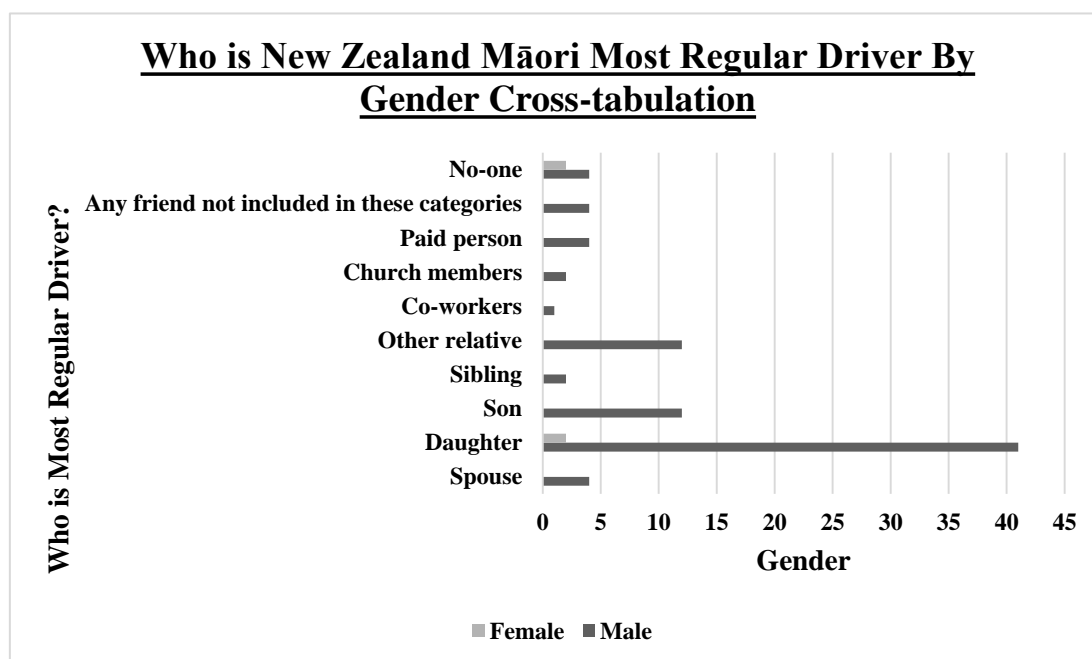
Who is New Zealand Māori Most Regular Driver?	
Gender	Number
Male	86
Female	4

Male New Zealand Māori were seen to have made a great use of other drivers on a regular basis. Relatives accounted for the top three choices with their daughter providing the highest number with nearly fifty percent (47.67%) in overall use as another driver. Son and other relative equally shared the next placing with 13.95% each. After that a group of four shared the total with 4.65% each. These included New Zealand Māori males spouse, paid person, another friend and no-one.

New Zealand Māori females in contrast only used two of the options given, equally sharing them only between their Daughter and No-one (refer to Table 5 and Figure 3).

Table 5.**Who is New Zealand Māori Most Regular Driver Cross-tabulation**

		Male	Female	Total
1	Spouse	4	0	4
2	Daughter	41	2	43
3	Son	12	0	12
4	Sibling	2	0	2
5	Other relative	12	0	12
7	Co-workers	1	0	1
8	Church members	2	0	2
10	Paid person	4	0	4
11	Any friend not included in these categories	4	0	4
12	No-one	4	2	6
Total		86	4	90

**Figure 3.**

JB5 *Who is your most regular driver?*

New Zealand Non-Māori

Within the New Zealand non- Māori grouping there was a close to 50:50 share between male and female New Zealand Non-Māori who provided some a response (refer to Table 6).

Table 6.

Who is New Zealand Māori Most Regular Driver?	
Gender	Number
Male	151
Female	143

Slightly more New Zealand Non-Māori males made a greater use of another regular driver in comparison to New Zealand Non-Māori females. Daughters for New Zealand Non-Māori males were their primary other driver accounting for nearly forty percent of the total number of other driver use (38.41%). Any friend not included in these categories was close to twenty percent of the total (19.86%), but son only for just under twelve percent (11.92%). The spouses of New Zealand Non-Māori males shared the bottom position with church members, accounting for only 1.32%.

In contrast New Zealand Non-Māori females only took advantage of six of the possible twelve options. Unlike New Zealand Non-Māori males they predominantly nearly sixty percent used their spouse as another driver (59.44%). Like New Zealand Non-Māori males, female New Zealand Non-Māori also made use of their daughter. This being their second highest source of transport (16.78%). No-one (8.39%) and any friend not included in these categories (7.69%) were the next non-source and source of possible driver, while their son and other relative shared the bottom placing together at around 4.2% (4.19%) (refer to Table 7 and Figure 4).

Table 7.

Who is New Zealand Non-Māori Most Regular Driver by Cross-tabulation			Male	Female	Total
1	Spouse		2	83	85
2	Daughter		58	24	82
3	Son		18	6	24
4	Sibling		5	0	5
5	Other relative		8	6	14
7	Co-workers		0	0	0
8	Church members		2	0	2
10	Paid person		9	0	9
11	Any friend not included in these categories		30	11	41
12	No-one		5	12	17
Total			151	143	294

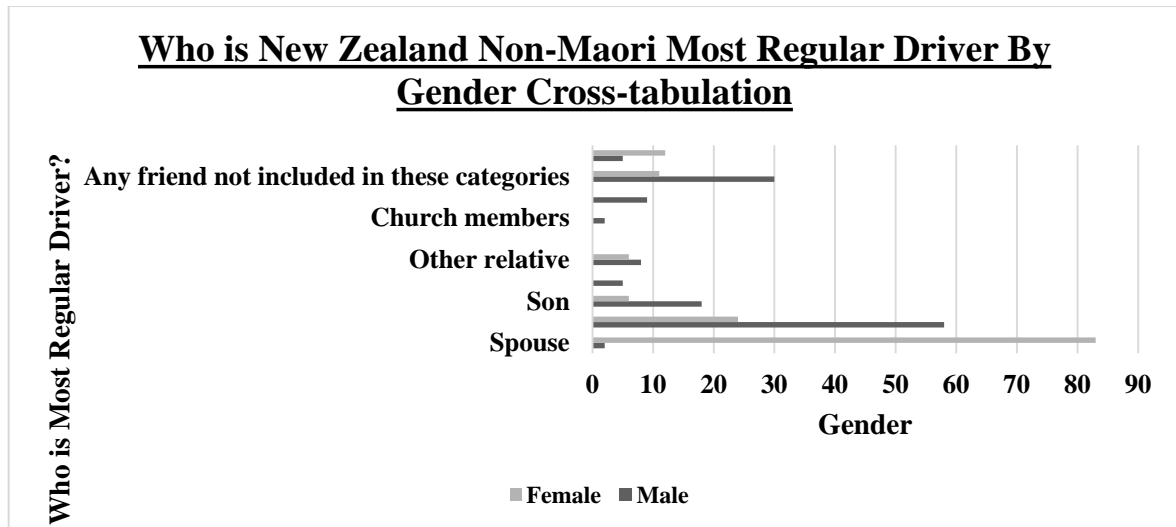


Figure 4.

JB5a How often does someone else drive you in a typical week?

New Zealand Māori

Predominantly New Zealand Māori were taken out by another driver at least once. This was then followed by twice and three times in the week. After that the numbers of trips did reduced there was still an upward and downward movement in figures. Of those that took advantage of being driven by another person nearly 60% were New Zealand Māori males.

Results indicated that New Zealand Māori males made greater use of another driver during the week by both age grouping and number of trips made in comparison to New Zealand Māori females.

Although the age of New Zealand Māori females ranged from between 83 to 93 years only those aged 83, 84 and 86 years were seen to have taken advantage of someone else driving for them (refer to Figure 5 and Table 8).

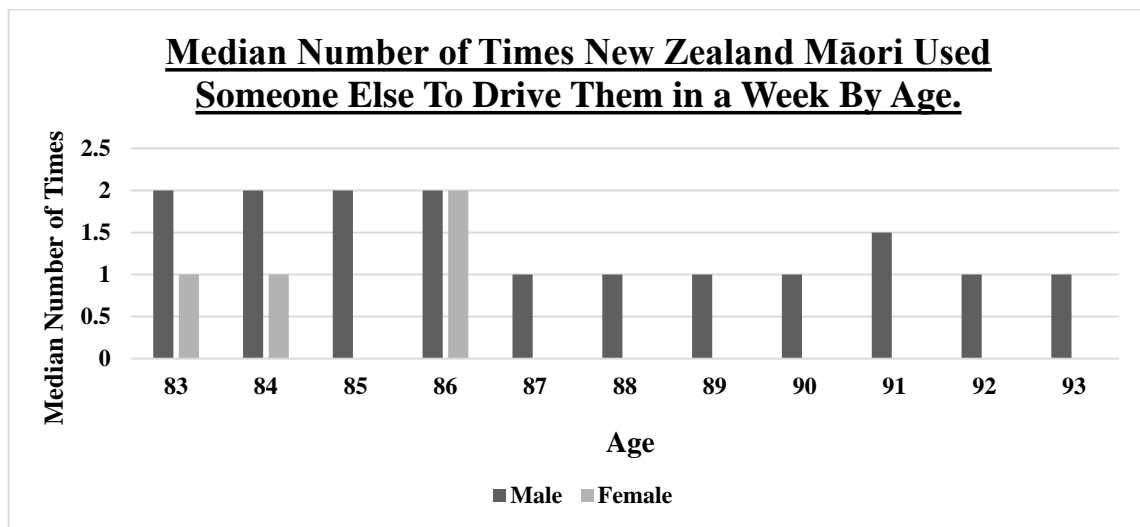


Figure 5.

A cumulative odds ordinal logistic regression with proportional odds was run to determine how often advanced aged New Zealand Māori were driven by someone else in a typical week. The assumption of proportional odds, as assessed by the full likelihood ratio test comparing the fitted model to model with varying location parameters did not add to the prediction of the dependent variable, $X^2(2) = 2.257, p > 0.323$. The deviance goodness-of-fit test indicated that the model had a good fit to the observed data $X^2 = 107.859, p = 0.946$, but quite a high degree of cells with zero frequencies (48.8%). However, the final model was not statistically significantly and therefore did not add to the prediction of the dependent variable, $X^2(2) = 2.257, p > 0.323$. The odds ratio of New Zealand Māori males typically driving in a week was 0.733 (95% CI, 0.479 to 1.123) times that of New Zealand Māori females, Wald $X^2(1) = 5.2040, p = 0.153$. An increase in age (expressed in years) was not associated with a decrease in driving in a typical week by New Zealand Māori with an odds ratio of 1.006 (95% CI, 0.931 to 1.085), Wald $X^2(1) = 0.227, p = 0.633$ (Refer to Table 8).

Table 8.

Parameter Estimates										
Var2	Estimate	Std.Error	Wald	df	Sig	LowerBound	UpperBound	Exp_B	Lower	Upper
	0.747	3.307	0.051	1	0.821	-5.735	7.228	2.111	0.003	1377.465
0	0.912	3.307	0.076	1	0.783	-5.57	7.393	2.489	0.004	1624.573
1	1.795	3.308	0.295	1	0.587	-4.688	8.279	6.019	0.009	3940.252
2	2.853	3.311	0.742	1	0.389	-3.637	9.343	17.34	0.026	11418.613
3	3.338	3.314	1.015	1	0.314	-3.157	9.833	28.163	0.043	18638.787
4	3.518	3.315	1.126	1	0.289	-2.98	10.016	33.717	0.051	22381.724
5	4.003	3.321	1.453	1	0.228	-2.507	10.512	54.762	0.082	36753.914
6	4.111	3.323	1.53	1	0.216	-2.402	10.623	61.008	0.091	41068.636
7	5.632	3.381	2.775	1	0.096	-0.994	12.258	279.22	0.37	210659.84
Age	0.006	0.039	0.02	1	0.886	-0.071	0.082	1.006	0.931	1.085
[NZMāori Male = 1]	-0.311	0.217	2.04	1	0.153	-0.737	0.116	0.733	0.479	1.123
[NZMāori Female = 2]	0 ^a			0				1		

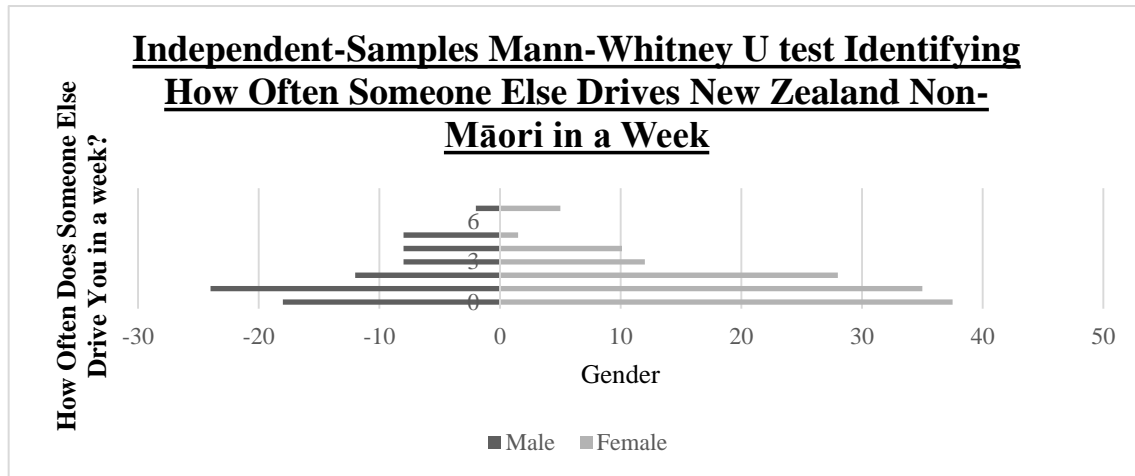
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a. This parameter is set to zero because it is redundant.

JB5a How often does someone else drive you in a typical week?

New Zealand Non-Māori

Generally male and female New Zealand Non-Māori typically only used another driver once a week or not at all (0).



Male
 N = 72
 Mean Rank = 101.81

Female
 N = 128
 Mean Rank = 99.75

Figure 6.

Table 9.

Standard Error	381,975
Standardized Test Statistic	-0.247
Asymptotic Sig. (2-sided test)	0.805

Mann-Whitney U test was run to determine if there were differences in how often older people use someone else to drive them in a week between Non-Māori males and Non-Māori females. Median driving score between New Zealand Māori were not statistically significant different between New Zealand Non-Māori males (1.00) and New Zealand Non-Māori females (1.00), $z = -0.247$, $p = 0.805$ (refer to Table 9).

JB5b *How far do you go with someone else in a typical journey?*

New Zealand Māori

The age of New Zealand Māori males took most advantage of taking a journey with someone else with their ages encompassing the entire research range (83 –to- 93 years). New Zealand Māori females ages feel between 83-to-87 and generally took less trips with someone else except for those of greater distance (refer to Figure 7).

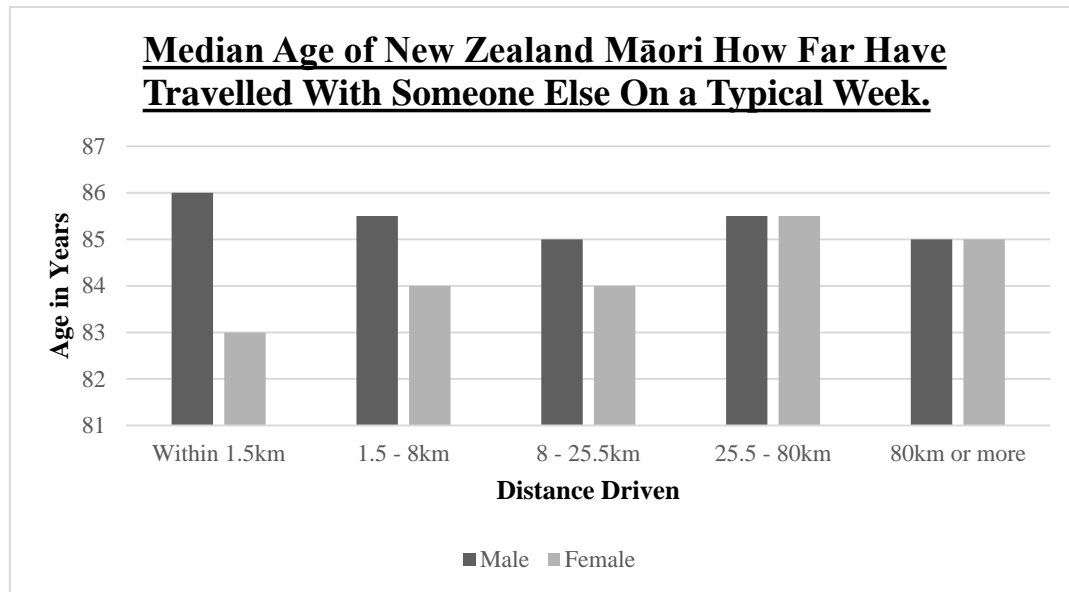


Figure 7.

A cumulative odds ordinal logistic regression with proportional odds was run to determine how far advanced aged New Zealand Māori go with someone else on a typical week. The assumption of the proportional odds was met, as assessed by the full likelihood ratio test comparing the residual of the fitted location model to a model with varying location parameters, $X^2(6) = 9.513$, $p = 0.147$. Results from the deviance goodness-of-fit test indicated that the model was a good fit to the observed data, $X^2(58) = 51.054$, $p = 0.729$, but with a case 42.5% of the total number of dependent variable cells had a zero frequency in this section of the model and as a consequence the goodness-of-fit measures could be treated with some suspicion. However the final model was not statistically significant as the significance value (0.123) was larger than the .05 level. This indicates that the independent variables (gender and age) do not add to the prediction of the dependent variable (how far older New Zealand Māori go with someone else on a typical week), $X^2(2) = 4.198$, $p > 0.123$. The odds ratio of how far New Zealand Māori males go with someone else on a typical week versus that of New Zealand Māori females is 0.812 (95% CI, 0.413 to 1.587), Wald $X^2(1) = 0.412$, $p = 0.519$. An increase in age (expressed in years) was associated with a decrease in driving in a typical week by New Zealand Māori with an odds ratio of 0.888 (95% CI, 0.775 to 1.017), Wald $X^2(1) = 2.924$, $p > 0.05$, (0.087) (refer to Table 10).

Table 10.

Parameter Estimates										
Var2	Estimate	Std.Error	Wald	df	Sig	LowerBound	UpperBound	Exp_B	Lower	Upper
1	-13.518	5.93	5.197	1	0.023	-25.139	-1.896	0	0	0.15
2	-10.542	5.885	3.209	1	0.073	-22.075	0.992	0	0	2.697
3	-8.337	5.865	2.02	1	0.155	-19.833	3.159	0	0	23.547
4	-6.841	5.874	1.356	1	0.244	-18.354	4.673	0.001	0	107.018
Age	-0.119	0.7	2.924	1	0.087	-0.255	0.017	0.888	0.775	1.017
[NZMaori Male =1]	-0.208	0.323	0.415	1	0.519	-0.842	0.462	0.812	0.431	1.587
[NZMaori Female =2]	0 ^a			0				1		

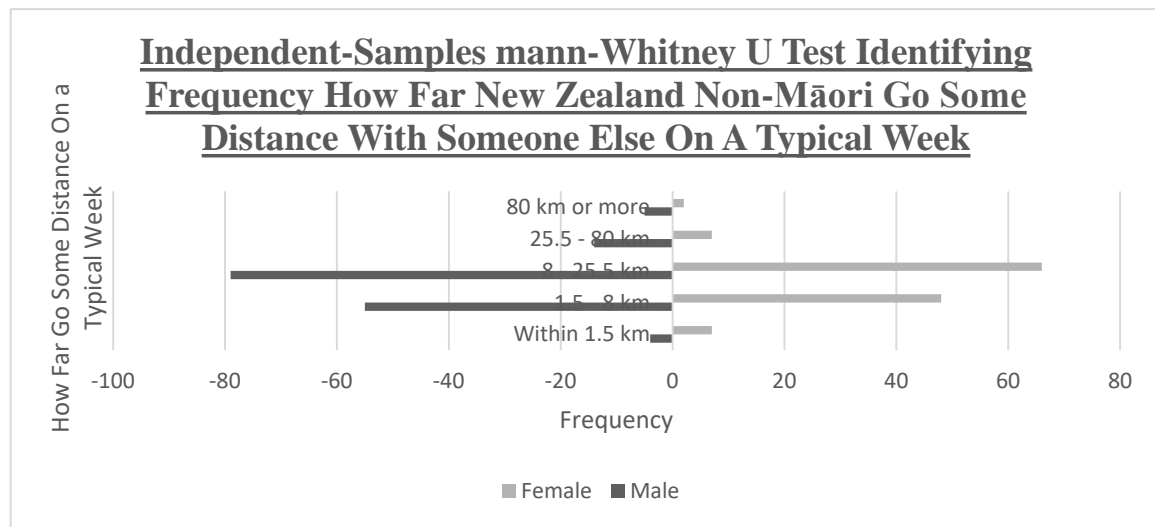
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a. This parameter is set to zero because it is redundant.

JB5b How far do you go with someone else in a typical journey?

New Zealand Non-Māori

Preliminary graphic analysis indicate that Non-Māori males and females had followed a similar pattern in the distances they have gone with another driver on a typically week. Non-Māori males appears to have used this service more often than Non- Māori (refer to Figure 8).



Male
N = 157
Mean Rank = 149.44

Female
N = 130
Mean Rank = 137.43

Figure 8.

The Mann-Whitney U test was run to determine if there were differences in how far advanced aged New Zealand Non-Māori males and females were driven by someone else in a typical week. It was apparent that distribution scores for New Zealand Non-Māori males and females were similar, as assessed by visual inspection. Median driving distances for New Zealand Non-Māori males (3.00) and New Zealand Non-Māori females (3.00) indicated evidence in support of the null hypothesis, $U = 9,351.000$, $z = -1.344$, $p = 0.17$ (refer to Table 11).

Table 11.

Total N	287
Standardized Test Statistic	-1.344
Asymptotic Sig. (s-sided test)	0.179

JB7 *Have you used other forms of transport in the last 12 months? e.g., taxi, minivan, subsidised bus etc.*

New Zealand Māori

The total number of New Zealand Māori (423) involved in the LiLAC study answered question JB7 enquiring whether they had ever used public transport in the last twelve months. The remaining cells are identified as the dependent variable with zero frequencies including non-driving New Zealand Māori (refer to Figure 9).

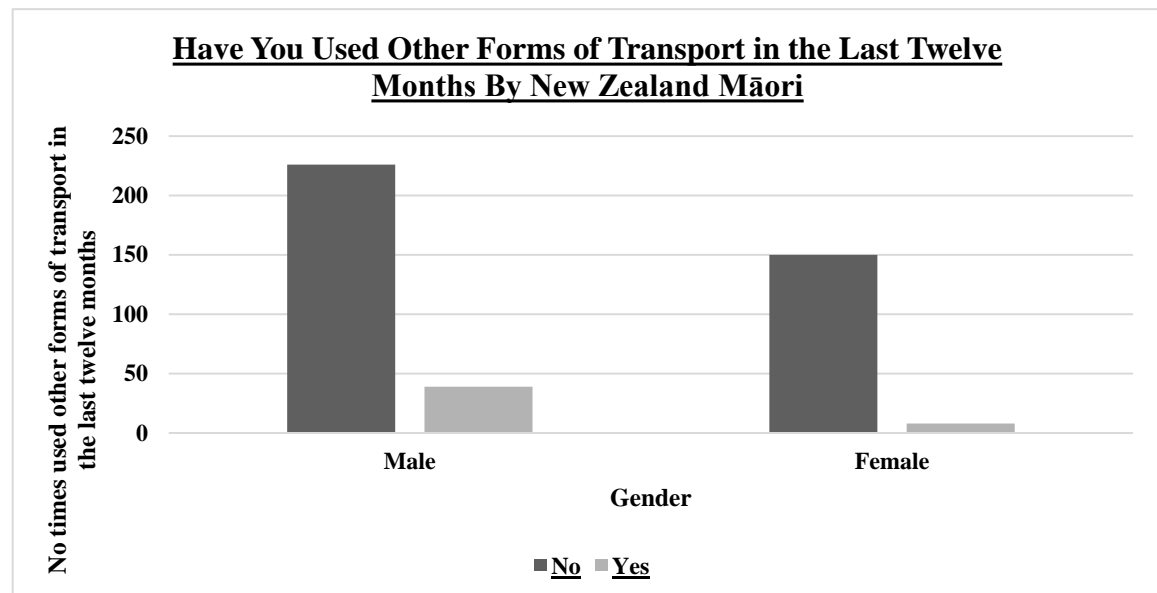


Figure 9.

A binary logistic regression was performed to ascertain the effects of gender and age on the likelihood of New Zealand Māori driving a car. The logistic regression was statistically significant, $X^2(2) = 69.815$, $p < 0.000$. The model explained 30% (Nagelkerke R^2) of the variance in older old New Zealand Māori having used public transport in the last twelve months and correctly classified 88.2% of the cases. Of the two predictor values only age was found to be statistically significant (as shown in Table 230). Increasing number of New Zealand Māori males was associated with an increase in their likelihood of having used other forms of transport in the last twelve months. Increasing age was associated with a likelihood of having used other forms of transport in the last twelve months (refer to 140).

Table 12.

Variables in the Equation		B	S.E.	Wald	df	Sig.	95% Confidence Interval		
							Exp(B)	Lower	Upper
Step 1	New Zealand Māori	-0.203	0.485	0.175	1	0.676	0.816	0.316	2.112
	AgeMāori	0.494	0.076	42.777	1	0	1.64	1.414	1.901
	Constant	-45.195	6.524	47.993	1	0	0		

a. Variable(s) entered on Step 1: New Zealand Māori, Age Māori.

JB7 *Have you used other forms of transport in the last 12 months? e.g., taxi, minivan, subsidised bus etc.*

New Zealand Non-Māori

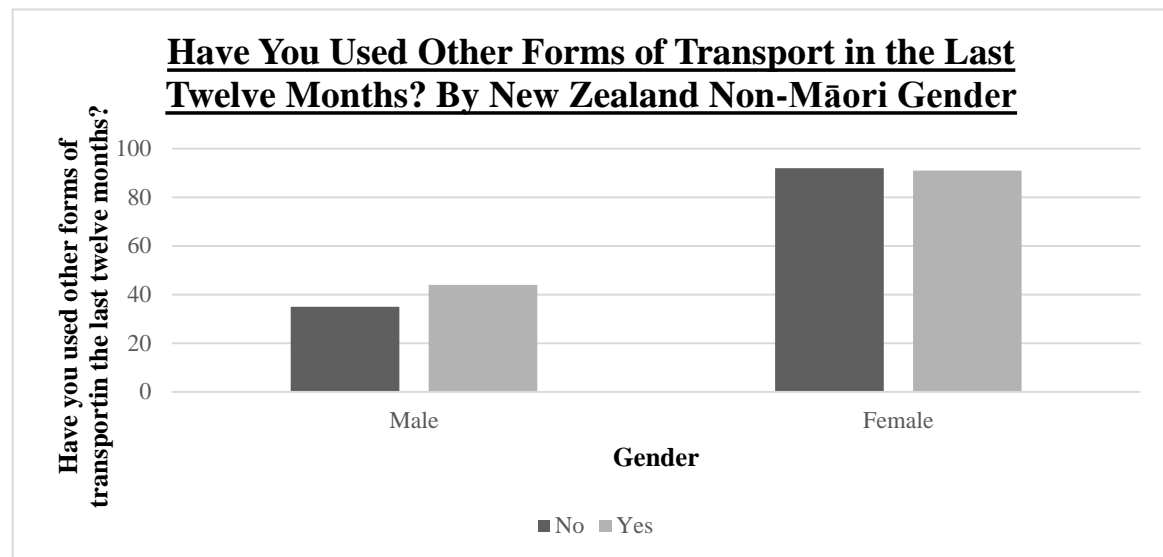
Just over half the number of New Zealand Non-Māori (51.5%) involved in the LiLAC study answered question JB7 enquiring whether they had ever used other forms of transport in the last twelve months. The remaining forty-eight percentage of cells are identified as the dependent variable with zero frequencies including non-driving New Zealand Non-Māori.

A chi-square test for association was conducted between gender and the preference for older old New Zealand Non-Māori to drive. A large percentage of all expected cell frequencies were less than five. Results indicate a weak evidence against the null hypothesis for the association between gender and preference for using other forms of transport in the last twelve months, $X^2(1) = 0.787$, $p = 0.375$ (refer to Table 13 and Figure 10).

Table 13.

Chi-Square Tests							
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)		
Pearson Chi-square	0.787 ^a	1	0.375				
Continuity Correction ^a	0.566	1	0.452				
Likelihood Ratio	0.789	1	0.374				
Fisher's Exact test				0.42	0.226		
Linear-by-Linear Association	0.784		0.376				
N of Valid Cases	262						

- a. 0 cells (0.0%) have expected count less than 5 minimum expected count is 64.31.
 b. Completed only for a 2x2 table.

**Figure 10.**

4. Discussion

Research conducted in the transportation area was directed towards older drivers and non-drivers either being driven by someone else or have used another source of transportation. Questions were therefore directed towards use of a private car driven by someone else, who was their most regular driver, how often they may utilise this driver in a typical week, what distances they went with the driver, whether they have used other forms of transport, had any problems obtaining groceries; and finally, whether they provide assistance through transport to own household members, family and/or another person or group. This material was primarily obtained through the transport section of the Everyday Interests and Activities chapter of the LiLAC study; along with Nutrition and Support Needs.

New Zealand Māori

New Zealand Māori males made greater use of private car transport in comparison to New Zealand Māori females. Such utilisation by males was also seen to increase with age. Whereas female employment of another driver more evenly balanced to those who did and those who did not. Daughters for both males and females were their prime source of transport with such tasks being completed at least twice a week for males and once for females. However, it was interesting to note that it was the 83-to-86-year old's who requested such a service rather than more advanced aged New Zealand Māori, those aged between 87-to-93 years. Distances requested by New Zealand Māori males encompassed the entire gamut (within 1.5km-to-80km+) whereas for female New Zealand Māori it was only the greater distances. Both male and female New Zealand Māori have not implemented other forms of transport. Also, they did not indicate that they had any problems attaining their groceries. Finally, both care or assistance in the form of transport was together offered by male and female New Zealand Māori, although it was the females who extended such a service to all categories (own household, family and/or other) whereas males generally restricted it to others.

New Zealand Non-Māori

New Zealand Non-Māori males presented a comparable picture to that of New Zealand Māori males in their use of private car transport driven by someone else. Daughters were similarly employed by New Zealand Non-Māori males where as New Zealand Non-Māori females predominately utilised their spouse before similarly attaining the services of the daughter. Generally, both male and female New Zealand Non-Māori only requested this use of another driver only once in a weekend covering such distances between 1.5-8 and 8.5-25.5 kilometres. In making use of another form of transport males offered the highest figure, whereas for females it was (relatively equally distributed between those who have and who have not.. Similar to New Zealand Māori both male and female New Zealand Non-Māori also indicated that they had no problem in obtaining their groceries. In contrast though New Zealand Non-Māori males offered their assistance or care primarily towards members of their own household and others; while females were seen to direct their energies to people outside of the greater family circle.

Results from this study do support the idea that older New Zealand Māori and Non-Māori did make use of other drivers with family being the prime source but not on a daily basis. In comparison when it came to other methods of transportation it was New Zealand Non-Māori, both male and female who did engage other methods of transportation. Correspondingly although distances driven did range from 1.5 kilometres to possibly beyond 80 kilometres this similarly did not present any burden both ways due to the diminished use of such a service by the older people (Stinchombe et al., 2015)

However regardless of which source may be employed it still needs to be remembered/it is also apparent that such people remains mobile and independent. A population group who themselves continue to contribute to society and also provide care and assistance through the use transportation themselves (Mackett, 2015).

With any aging society it is (therefore) apparent that public policy design and transportation also needs

to be integrated in with the older population. To illustrate such a development would be the recognition by political bodies of the wider function of alternative safe modes of transport. Including: the continuation of driving, ride sharing, availability and style of public transportation, land-use planning, grant funding, walking still as a mode of transport, health-related outcomes, housing, social environments, use of other independent providers, urban and rural ecological requirements (Oxley & Whelan, 2008; Porter et al., 2013; and Menec & Nowicki, 2014). All of which would be beneficial to the healthy aging of the older population (Groessi et al., 2007; and Menec & Nowicki, 2014).

Limitation to the study would be the need for a more in depth investigation to / discussion with recipients as to their relationship with family and how they may utilise this source of transportation. What other sources of transportation were employed by aged recipients and their views of the possible provision of such services or methods of mobility.

The present study incorporated the experiences of people who were born between 1920 and 1930. A current older generation born in the 1960's in certain societal groups will outweigh that of the younger generation. It is with such knowledge that both society and political bodies work to establish an 'age-friendly' community, environmental provision, along with supportive public policy (Menec & Nowicki, 2014).

5. Conclusion

Results from the study supports the general view that it is family members who afford assistance for older relatives through the provision of transport services. Although this is not where the picture is framed.. So rather than it being one of dual burden to both (either) group(s): responsibility for the family and perceived load by the older age group there was instead a restrained use of family services and distanced driven could instead be related to geographic location rather than high use. New Zealand Māori male and female together utilised private car transport where as it was more male New Zealand Non-Māori who did the same. However, independent mobility remained an ongoing consideration for both rural and urban population, and one that could similarly be seen in many forms of travel. A population age group though that also continue to offer aid for their own generation.

Nevertheless future older generations will have experienced involvement with the motor vehicle far greater than the population group presently studied. Further research into the use of varied forms of transport, along with timeframes and geographical location; particularly in light of the design of transportation policy enabling access to goods, services, work and social opportunities within the communities of such a forthcoming older generation.

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