

Financial literacy and decision-making among older New Zealanders. Evidence from **1000Minds survey**

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Research Overview

- Financial literacy is associated with “own best long-run interest” (Mandell, 2007); “sensible saving and investment decisions” (Lusardi and Mitchell, 2007), “effective decisions”(Schagen, 2007)
- OECD’s definition: ...”understanding of financial products and concepts... to make informed choices..
“Take effective actions to improve financial well-being”
- Not just knowledge of financial concepts but also how knowledge is used for decision-making based on “informed judgement” and theoretical rationality

Research Overview

- This paper uses 1000Minds Software to investigate whether financial literacy affects older individuals' spending/investment choices when there is a hypothetical windfall of \$50,000
- The hypothetical windfall is associated with the potential of receiving a lump sum in retirement (that could in the form of KiwiSaver, retirement savings plan, inheritance, etc.)

Literature review

- Lusardi & Mitchell (2011) find that financial illiteracy is widespread even in countries where financial markets are developed (USA, Germany, the Netherlands, Sweden, Italy, Japan, and New Zealand).
- Majority of literature finds a positive relationship between financial literacy and decision-making (Lusardi et al. 2012; Japelli & Padula, 2015) and/or retirement planning (Australia-Agnew et al. 2013; U.S-Lusardi & Mitchell, 2007, 2011; Italy-Fornero & Monticone, 2011), and financial behaviour (Cole et al. 2012)
- However, Crossnan et al. 2011 found that financial literacy is not significantly associated with retirement planning.

Motivation

- In 2008 NZ was one of the first OECD countries to adopt a National Strategy for Financial Literacy (financialliteracy.org.nz 2008) and was revised to become the National Strategy for Financial Capability (2015)
- *Building the financial capability of New Zealanders is a Government priority...At the moment almost a third of New Zealanders have low levels of financial knowledge. If we can improve their financial capability we can improve the wellbeing of our families and communities.* (Commerce and Consumer Affairs Minister, Paul Goldsmith, 2015)

Research Questions

1. Are New Zealand retirees financially literate? Who are the most vulnerable New Zealand retirees?
2. How does financial literacy affect debt ownership and risk attitude among New Zealand retirees?
3. Does financial literacy affect spending preferences among New Zealand retirees?
4. How does the relationship dynamics between financial literacy, debt ownership, risk attitude and spending preferences change with different types of spending choices?

Data

- 1,191 New Zealanders aged 55 and above in two waves December 2018- May 2019 via Research Now (renamed Dynata)
- National representative of New Zealand population by gender, age, and ethnicity

Data

Sample Distribution		Percentage	Statistics New Zealand Population Percentage (2013 Census)
Gender	Female	51.05	51.30
	Male	48.95	48.70
Age	55-59	22.08	23.64
	60-64	24.60	21.19
	65-69	23.09	17.81
	70 and over	30.23	37.36
Ethnicity	New Zealand European	73.47	70.67
	Māori	9.99	6.90
	Pacific Islands	3.02	2.90
	Asian	7.64	6.00
	Other	5.88	2.67
Income Group	up to NZ\$20,845 (NZ Super)	31.74	35.45
	\$20,846-\$48,000	38.08	31.40
	\$48,001-\$70,000	16.74	9.60
	\$70,001-\$100,000	8.23	5.70
	Over \$100,000	5.21	4.80

Methodology

- 3 Financial literacy using questions developed by Lusardi and Mitchell (2006)
- Additional question from OECD
- We use 1000Minds platform for the decision-making survey
- G20/OECD INFE Report on Adult Financial Literacy in G20 Countries

Methodology

- Suppose you had \$100 in a savings account and the interest rate was 2% per annum. After 5 years, how much do you think you would have in the account if you left the money to grow?
- Imagine that the interest rate on your savings account was 1% per annum and inflation was 2%. After 1 year, how much would you be able to buy with the money in this account?
- Please tell me whether this statement is true or false. 'Buying a single company's shares usually provide a safer return than buying a mixture of shares from different companies in different industries'.
- Please tell me whether this statement is true or false. 'An investment with high return is likely to be high risk' (if someone offers you the chance to make a lot of money, it is likely there is also a chance that you can lose a lot of money).

Additional Questions

- How would you 'honestly' describe yourself as a risk-taker?
- Do you have any **outstanding debt** more than a month's worth of salary?
- Which of the following best describes your **current debt position**?
- Demographic questions, personal health, family (children and family health), work hours, living arrangement

1000Minds Survey Interface

What would you do if you received \$50,000 windfall? (please choose EQUAL if you are indifferent)

Place money in bank

this one

OR

Increase general consumption (e.g buy better quality groceries, eat out more often, etc)

this one

they are equal

[skip this question for now »](#)

0% complete *

Choices in 1000Minds Survey

No.	Possible Spending Choice
1	Place in KiwiSaver or investment fund.
2	Put a deposit on a home for myself.
3	Put a deposit on an investment property.
4	Make donations.
5	Increase general consumption (e.g. buy better quality groceries, eat out more often, etc.).
6	Give money to family/friends now.
7	Leave money to family/friends when I die.
8	Luxury purchases (e.g. overseas holidays, boats, etc.).
9	Put money in bank.
10	Make improvements on house/upgrade.
11	Invest in health (e.g. private health insurance, private operations/procedures, etc.).
12	Pay off debt (personal and/or mortgage).
13	Purchase shares in <u>sharemarket</u> .

Results

	Financial Literacy Score					Total
	0	1	2	3	4	
Frequency	Low		Medium		High	
	30	67	141	274	679	1,191
	97		415		679	1,191
Percentage	2.52	5.63	11.84	23.01	57.01	100
	8.14		34.84		57.01	100

Results

Percentage		Financial Literacy Score		
		Low	Medium	High
Gender	Male	5.17	28.97	65.86
	Female	10.74	40.50	48.76
Age	55-59	11.03	45.63	43.35
	60-64	6.48	31.74	61.77
	65-69	8.00	30.18	61.82
	70 and over	7.50	33.06	59.44
Ethnicity	New Zealand European	6.40	31.89	61.71
	Māori	17.65	48.74	33.61
	Pacific Islands	19.44	50.00	30.56
	Asian	12.09	37.36	50.55
	Other	2.86	37.14	60.00
Income Group	up to NZ\$20,845 (NZ Super)	13.49	34.13	52.38
	\$20,846-\$48,000	6.62	39.51	53.86
	\$48,001-\$70,000	5.00	30.50	64.50
	\$70,001-\$100,000	4.08	34.69	61.22
	Over \$100,000	3.23	19.35	77.42
Highest Education	No school qualification	24.84	47.77	27.39
	Some school qualification	8.71	37.14	54.15
	At least a Tertiary undergraduate degree	2.90	29.17	67.93

Ordinal Logistic Regression of Demographics on Financial Literacy

LR Chi ²	212.06
Prob > Chi ²	0.000
Pseudo R ²	0.1101
	Coefficient
Male	0.784***
Māori	-0.750***
Pacific	-0.870***
Asian	-0.688***
Other	0.064
60-64	0.776***
65-69	0.555***
Over 70	0.480**
Some school qualification	1.243***
At least a Tertiary undergraduate degree	0.175***
Married	0.342*
Divorced/Widowed	0.034
Income \$20,846-\$48,000	0.054
Income \$48,001-\$70,000	0.600***
Income \$70,001-\$100,000	0.496*
Income Over \$100,000	0.782*
1-3 medical visits in the past year	0.168
4-7 medical visits in the past year	0.200
8-11 medical visits in the past year	-0.136
12 or more medical visits in the past year	0.216
Family Responsibility	-0.254***
Work 1-15hrs/week	-0.023
Work 16-29hrs/week	0.233
Work at least 30hrs/week	-0.342

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Ordinal Logistic Regression of Financial Literacy on Debt Position

LR Chi ²	137.53
Prob > Chi ²	0.000
Pseudo R ²	0.0628
	Coefficient
Financial Literacy	-0.356***
Male	0.212*
Māori	0.496***
Pacific	0.528
Asian	-0.444*
Other	-0.073
60-64	-0.315*
65-69	-0.806***
Over 70	1.026**
Some school qualification	0.141
At least a Tertiary undergraduate degree	0.148
Married	-0.346
Divorced/Widowed	-0.263
Income \$20,846-\$48,000	-0.197
Income \$48,001-\$70,000	0.374*
Income \$70,001-\$100,000	-0.430
Income Over \$100,000	-0.385
1-3 medical visits in the past year	0.277
4-7 medical visits in the past year	0.508**
8-11 medical visits in the past year	0.460
12 or more medical visits in the past year	1.090***
Family Responsibility	0.259***
Work 1-15hrs/week	0.173
Work 16-29hrs/week	0.382*
Work at least 30hrs/week	0.361**

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Ordinal Logistic Regression of Financial Literacy on Risk-Taking

LR Chi ²	144.93
Prob > Chi ²	0.0000
Pseudo R ²	0.0513
	Coefficient
Financial Literacy	0.285***
Male	0.828***
Māori	0.531***
Pacific	0.719**
Asian	0.564**
Other	0.119
60-64	0.254
65-69	-0.149
Over 70	-0.064
Some school qualification	0.440**
At least a Tertiary undergraduate degree	0.640***
Married	-0.017
Divorced/Widowed	-0.025
Income \$20,846-\$48,000	0.368**
Income \$48,001-\$70,000	0.553***
Income \$70,001-\$100,000	0.755***
Income Over \$100,000	1.271***
1-3 medical visits in the past year	-0.394*
4-7 medical visits in the past year	0.561**
8-11 medical visits in the past year	-0.307
12 or more medical visits in the past year	0.067***
Family Responsibility	0.506***
Work 1-15hrs/week	0.004
Work 16-29hrs/week	0.002
Work at least 30hrs/week	-0.115

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4.8. Choice Ranks of the Total Sample

Choice	Mean Probability of Choice	Rank
Kiwi Saver	0.092	3
Home Deposit	0.068	10
Property Investment Deposit	0.068	9
Donation	0.058	13
General Consumption	0.064	11
Leave Money to Family Now	0.077	6
Leave Money to Family Later	0.074	7
Luxury Items	0.080	5
Money in Bank	0.106	1
Home Improvements	0.092	2
Health Investments	0.063	12
Debt Payment	0.091	4
Share Purchase	0.068	8

Note: Yellow highlights the top 3 choices and green highlights the least preferred choices.

Comparable choice preference is against KiwiSaver		Choice Preferred				
		Home Deposit	Property Investment Deposit	Donations	General Consumption	Money for family and friends now
		Coefficient				
Financial literacy		-0.074**	-0.081**	-0.108***	-0.075**	-0.086**
Debt position (compared to no debt)	No problem paying debt	0.130***	0.835**	0.028	0.053	0.062
	Difficulty paying debt	0.191***	0.116**	-0.085	0.229***	0.082
	Low risk taking capability	0.042	0.965	-0.002	0.066	-0.045
	Careful	0.014	0.071	-0.029	0.008	-0.152**
Risk taker (compared to extremely unwilling to take risk)	Willing to take evaluated risk	-0.004	0.137*	-0.010	-0.015	-0.128
	Reckless/hasty	-0.081	0.443*	-0.095	0.182	0.476**
Gender (Compared to Female)	Male	-0.027	0.021	-0.175***	0.007	-0.131***
	Māori	0.096	0.078	-0.001	-0.177**	0.043
	Pacific Island	0.103	0.117	0.189	-0.090	-0.0214
Ethnicity (compared to New Zealand European)	Asian	0.176**	0.156**	0.039	0.107	-0.154**
	Other	0.071	0.048	0.003	-0.020	-0.008
	60-64	-0.002	-0.056	0.008	-0.079	0.028
Age group (compared to age 55-59)	65-69	-0.123*	-0.080	0.135*	-0.131**	0.066
	Over 70	-0.115*	-0.050	0.260***	-0.035	0.178***
Advantage		-0.050**	0.002	0.011	-0.061**	-0.006
Marital Status (compared to single)	Married/partnered	0.167**	0.183**	-0.007	-0.037	0.093
	Divorced/widowed	0.070	0.113	-0.012	-0.013	0.112
Family responsibility		-0.001	-0.019	-0.051*	-0.022	0.028
	one - three	-0.0673	-0.044	-0.070	-0.143	-0.067
	four - seven	-0.102	-0.057	-0.061	-0.088	-0.059
	eight - eleven	-0.090	-0.107	0.071	-0.129	-0.193*
Medical visits in past year (compared to 0)	12 or more	0.031	-0.170	-0.093	-0.145	-0.158
	Living arrangement (compared to living in own home)	0.352***	0.066	0.003	-0.013	-0.028
	Living with family/other	0.140	0.007	-0.110	0.024	-0.092
Work hours per week (compared to 0)	one - fifteen	-0.077	-0.082	-0.149**	-0.105	-0.127**
	sixteen-twenty nine	-0.007	-0.007	-0.065	-0.142*	-0.171**
	at least 30 hours	-0.062	-0.097*	-0.170***	-0.202***	-0.216***
Constant		-0.170	-0.259	0.007	0.259	0.109

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

		Choice Preferred				
		Money for family and friends later	Luxury goods	Money in bank	Home improvements	Health Investment
		Coefficient				
Financial literacy		-0.083**	-0.009	-0.057**	-0.045	-0.081**
Debt position (compared to no debt)	No problem paying debt	0.003	0.060	-0.016	0.155***	0.102**
	Difficulty paying debt	0.052	0.097	0.098**	0.272***	0.230***
	Low risk taking capability	-0.044	0.107	-0.021	-0.012	-0.030
Risk taker (compared to extremely unwilling to take risk)	Careful	-0.056	0.023	-0.050	-0.057	-0.074
	Willing to take evaluated risk	-0.126*	0.015	-0.162***	-0.095	-0.119
	Reckless/hasty	0.478***	0.588***	0.301	-0.014	0.124
Gender (Compared to Female)	Male	-0.053	-0.007	0.040	-0.038	-0.038
	Māori	0.084	-0.156**	-0.021	0.025	0.029
	Pacific Island	0.261**	-0.098	0.003	0.024	0.207*
Ethnicity (compared to New Zealand European)	Asian	-0.020	0.016	-0.001	-0.094	0.231***
	Other	0.039	-0.065	0.488	-0.009	-0.038
	60-64	0.062	0.000	0.017	-0.017	0.076
Age group (compared to age 55-59)	65-69	0.139**	-0.017	0.026	-0.042	-0.068
	Over 70	0.244***	-0.012	0.056	-0.057	0.046
Advantage		-0.016	-0.026	-0.012	-0.028	0.011
Marital Status (compared to single)	Married/partnered	0.007	0.132*	0.009	0.156**	0.057
	Divorced/widowed	0.004	0.088	0.008	0.139**	0.060
Family responsibility		0.009	0.021	-0.002	0.012	-0.001
	one - three	-0.039	0.043	-0.079	-0.012	0.008
Medical visits in past year (compared to 0)	four - seven	-0.007	0.058	-0.081	-0.028	-0.008
	eight - eleven	-0.028	0.066	-0.075	-0.006	-0.025
Living arrangement (compared to living in own home)	12 or more	-0.130	0.110	-0.089	0.034	0.081
	Renting/in supported care	0.002	-0.140	-0.032	-0.484***	-0.086
	Living with family/other	-0.084	-0.049	-0.069	-0.256***	-0.010
Work hours per week (compared to 0)	one - fifteen	-0.149**	-0.072	0.087*	-0.051	-0.009
	sixteen-twenty nine	-0.118*	-0.049	-0.074	-0.120*	-0.245***
	at least 30 hours	-0.170***	0.134***	-0.124***	-0.120***	-0.120**
Constant		0.036	-0.206	0.440	0.182	-0.232

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

		Choice Preferred	
		Pay off debt	Purchase shares
		Coefficient	
Financial literacy		-0.075**	-0.031
Debt position (compared to no debt)	No problem paying debt	0.587***	-0.076*
	Difficulty paying debt	0.786***	-0.054
	Low risk taking capability	0.174	0.140**
Risk taker (compared to extremely unwilling to take risk)	Careful	-0.016	0.234***
	Willing to take evaluated risk	-0.006	0.385***
	Reckless/hasty	-0.014	0.189
Gender (Compared to Female)	Male	0.036	0.096**
	Māori	0.040	0.065
	Pacific Island	0.221**	0.174
Ethnicity (compared to New Zealand European)	Asian	0.064	-0.010
	Other	-0.045	0.121*
	60-64	-0.009	0.031
Age group (compared to age 55-59)	65-69	-0.102*	0.031
	Over 70	-0.056	0.109*
	Advantage	-0.037*	0.041**
Marital Status (compared to single)	Married/partnered	0.156**	-0.009
	Divorced/widowed	0.111	-0.025
Family responsibility		-0.026	-0.013
	one - three	-0.062	0.048
	four - seven	-0.078	-0.009
	eight - eleven	-0.195**	-0.077
Medical visits in past year (compared to 0)	12 or more	0.074	-0.028
Living arrangement (compared to living in own home)	Renting/in supported care	-0.037	0.017
	Living with family/other	-0.062	-0.180**
	one - fifteen	-0.093	-0.063
Work hours per week (compared to 0)	sixteen-twenty nine	0.037	-0.175**
	at least 30 hours	-0.035	-0.164***
Constant		-0.089	-0.568

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Choice	Ranks			
	Female	Male	NZ EU	Māori and Pacific
Kiwi Saver	3	2	3	3
Home Deposit	8	10	11	5
Property Investment	9	9	9	8
Deposit	12	13	13	13
General	11	11	10	12
Consumption	6	8	6	7
Leave Money to Family Now	7	7	7	6
Leave Money to Family Later	5	5	5	10
Luxury Items	1	1	1	2
Money in Bank	2	4	2	4
Home Improvements	10	12	12	11
Health Investments	4	3	4	1
Debt Payment	13	6	8	9
Share Purchase				

Choice	Ranks		
	Married	Singles	Divorced/Widowed
Kiwi Saver	3	2	2
Home Deposit	10	6	8
Property Investment	8	11	10
Deposit	13	13	13
Donation	12	7	11
General Consumption	6	10	5
Leave Money to Family Now	7	5	6
Leave Money to Family Later	5	9	7
Luxury Items	1	1	1
Money in Bank	2	4	3
Home Improvements	11	12	12
Health Investments	4	3	4
Debt Payment	9	8	9
Share Purchase			

Choice	Ranks		
	Homeowner	Renter/in supported care	Live with family/other
Kiwi Saver	3	4	3
Home Deposit	12	3	6
Property Investment Deposit	9	7	9
Donation	13	13	13
General Consumption	10	11	10
Leave Money to Family Now	6	5	8
Leave Money to Family Later	7	6	7
Luxury Items	5	8	5
Money in Bank	1	1	1
Home Improvements	2	10	4
Health Investments	11	12	11
Debt Payment	4	2	2
Share Purchase	8	9	12

Figure 4.4. Structural Equation Modelling for Female subsample choosing KiwiSaver. □

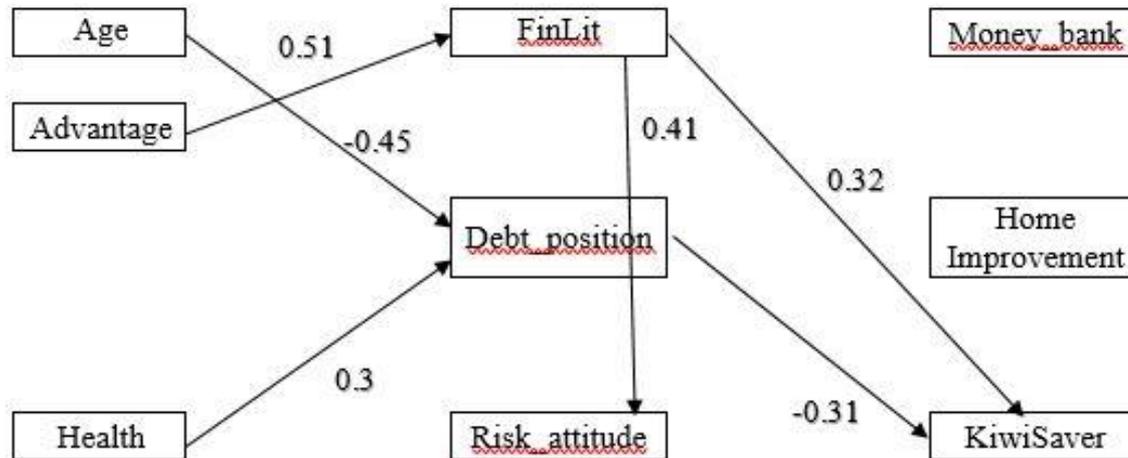


Figure 4.5. Structural Equation Modelling for Male subsample choosing KiwiSaver.



Figure 4.6. Structural Equation Modelling for Male subsample choosing pay debt.

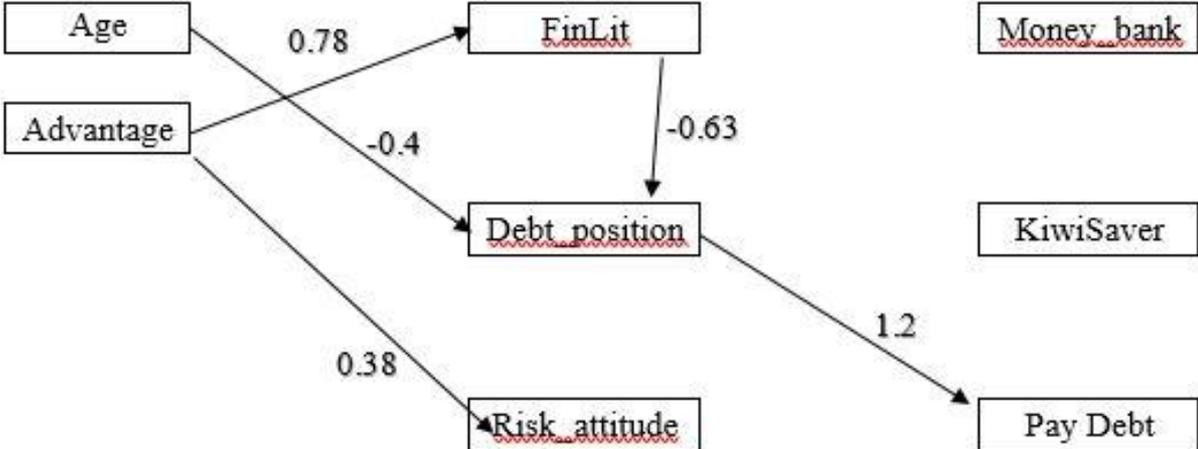
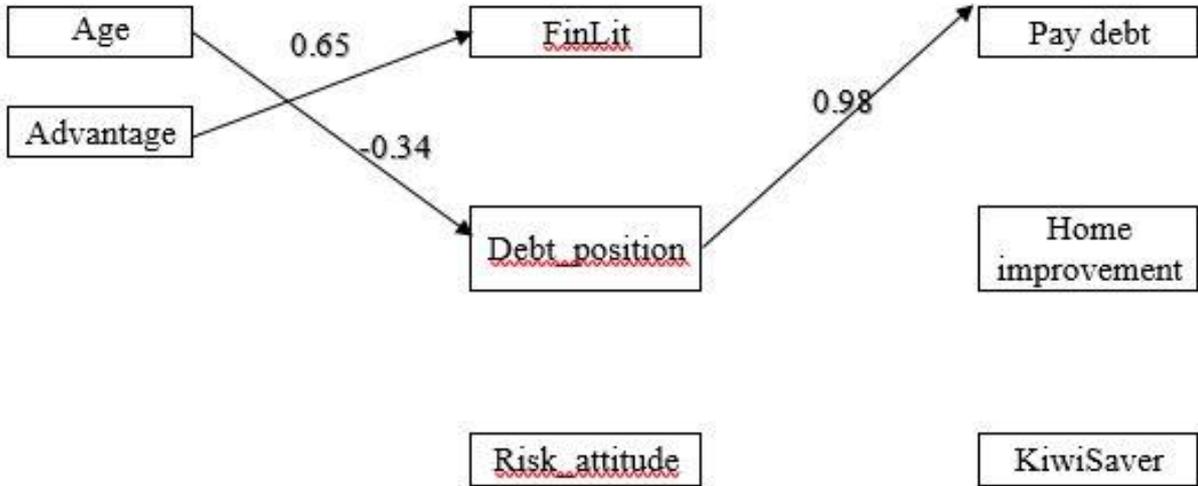


Figure 4.10. Structural Equation Modelling for Māori/Pacific subsample choosing paying debt.



Summary and Conclusion

- Financial literacy comparatively high in NZ
- Younger females of Māori or Pacific Islands ethnicity with lower education attainment, lower incomes, and greater family responsibility have significantly lower levels of financial literacy
- financial literacy significantly associated to lower debt worries and higher risk tolerance
- Financial literacy strongly affects choosing KiwiSaver
- Debt payment motivations strongly affected by worse debt position

THANK YOU
Questions