The Impact of Housing Tenure on Financial Wellbeing Among Elderly Australians

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Social Indicators Research

Published: 27/12/2023

Peer reviewed version

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Abstract

Homeownership rates are declining in many countries and the potential impact on financial wellbeing is largely unknown. Additionally, the potential impact may be expected to be larger for women than men, as women tend to value homeownership more than men. Finally, financial literacy may play a role on financial wellbeing via a positive effect onto housing tenure (i.e., renter, mortgagor, outright homeowner). On the basis of a community sample of older Australians (N = 2,608), we tested a model with housing tenure as a predictor of financial wellbeing, controlling for the effects of wealth, income, age, and marital status. Housing tenure yielded a significant, positive, unique effect onto financial wellbeing. We failed to find evidence that the effect of housing tenure on financial wellbeing was larger for women than men. Finally, financial literacy was associated positively with financial wellbeing; and, the effect was entirely mediated positively by housing tenure, wealth and income. We conclude that outright homeownership may accord approximately 10% greater financial wellbeing than renting (and ≈ 6% greater than mortgaged) in Australian seniors. Furthermore, higher levels of financial literacy may play a unique role in facilitating better housing tenure.

Introduction

Homeownership has been hypothesised to increase financial wellbeing for the security it provides, as well as wealth accumulating benefits (Clark & Diaz-Serrano, 2021). While homeownership rates increased in the second half of the twentieth century, in more recent years, rates of homeownership have been in decline in many countries, particularly outright ownership (Stebbing & Spies-Butcher, 2016). A factor suggested to be a primary cause for the declining rates of homeownership is the increasing ratio of dwelling cost to income observed especially over the last two decades (Cho et al., 2021). Correspondingly, an increasing percentage of the population believes that homeownership to be an unrealistic goal (McNamara & Connell, 2007).

To date, a small amount of empirical research has examined the association between housing tenure and financial wellbeing (e.g., Joo & Grable, 2004; Porter et al., 2020), however, the results are mixed, suggesting more research is needed. Furthermore, given women tend to value homeownership more than men (Kupke et al., 2014), it is possible that any effect between housing tenure and financial wellbeing may be moderated by gender (i.e., larger for women). Finally, the degree to which individual differences in financial literacy may potentially influence the outcome of housing tenure has not been examined. A unique, positive effect between financial literacy and housing tenure, controlling for factors such as age, wealth, income and marital status would suggest that knowledge of basic financial terms and principles may facilitate homeownership. Consequently, the primary purpose of this investigation was to estimate the direct effect between housing tenure and financial wellbeing, controlling for the effects of age, wealth, income, and marital status. We also sought to estimate the indirect effects between financial literacy and financial wellbeing via housing tenure, wealth, and income. Finally, we

considered the possibility that the association between housing tenure and financial wellbeing may be stronger for women than for men.

Financial Wellbeing

Financial wellbeing may be defined as the degree of security people experience in relation to their finances, as well as their sense of progress toward reaching their financial goals to facilitate the enjoyment of life (Consumer Financial Protection Bureau, 2015). In practice, financial wellbeing can be measured with objective indicators (e.g., amount of debt) or subjectively with self-report questionnaires (Brüggen et al., 2017). Whereas general wellbeing measures ask people to respond to questions such as, ‘If I could live my life over, I would change almost nothing’ (Diener et al., 1985), subjective financial wellbeing measures may include an item such as, 'I feel on top of my day to day finances' (Botha et al., 2021). The correlation between financial wellbeing and life satisfaction is $r \approx .40$ (Brown & Gray, 2016; Patel & Wolfe, 2019), suggesting a substantial amount of distinctness. Due to respondents' potential lack of consideration of finances when responding to general wellbeing items (resulting in a moderate correlation between the two constructs), and the ability of financial wellbeing measures to identify vulnerable individuals/households (Botha et al., 2021), researching predictors of financial wellbeing is arguably important.

An appreciable percentage of people report low levels of financial wellbeing. For example, Botha et al. (2020) found that approximately 40% of adult Australians (N = 4,470) were ‘having trouble’ or ‘just coping’ financially. Similar rates of financial wellbeing have been reported in other countries. For example, 69% of respondents across 15 countries reported worrying about running out of money in retirement (HSBC Global Report, 2015).

These results highlight the importance of identifying predictors of financial wellbeing, in order to better understand how people may develop low levels of financial wellbeing, and potentially helping people understand how they may improve their financial wellbeing. One variable thought to be associated positively with financial wellbeing is homeownership (Clark & Diaz-Serrano, 2021).

Housing Tenure & Financial Wellbeing

Theoretically, financial wellbeing may be expected to increase progressively from renter, mortgagor, to outright ownership, as there is a positive association between housing tenure and the wealth effect (Aladangady, 2017; Atalay et al., 2017). Thus, as homeowners build equity in their dwelling overtime, they have more resources to support consumption. Additionally, as a mortgage can be a source of financial stress, outright homeownership may be expected to increase financial wellbeing in some people, relative to possessing a mortgage or renting (Atalay et al., 2017). In summary, homeownership, especially outright ownership, is considered to accord several benefits, including wealth generation (Rossi & Sierminska, 2018), as well as ontological security (McCabe, 2018) and socially perceived success (Elsinga & Hoekstra, 2005). Given how important homeownership status is to people (McCabe, 2018), it is surprising that few studies have examined the association between housing tenure and financial wellbeing. In a rare study, Porter et al. (2020) reported on data obtained between 2017 and 2018 from 40,689 Australian adults (18+) who were asked about their housing tenure (renter, mortgagor, outright owner) and financial wellbeing. The financial wellbeing measure was a mean composite of three indicators (scored 0 to 100) relevant to: (1) people's ability to meet every day financial commitments; (2) feelings of financial security; and (3) resilience to negative shocks. Financial wellbeing levels

corresponded to approximately[1] the following: renter = 50.2; mortgagor = 59.1 ; and outright owner = 67.9. Thus, there was a linear, positive effect across the three levels of ownership, with outright homeowners having reported financial wellbeing approximately 35% higher than renters. Additionally, Porter et al. (2020) reported the results across four age groups, and the difference in financial wellbeing across three housing groups was most pronounced for those aged 65+. Specifically, seniors who were renting reported a mean financial wellbeing level of 52.5, whereas seniors who were outright owners reported a mean financial wellbeing level of 74.0 (41% higher), suggesting that as people age, homeownership becomes a progressively valued circumstance. As income and wealth are known positive correlates of both age and housing tenure (see Di & Liu, 2007), Porter et al.'s (2020) results likely overstate the degree to which housing tenure may impact financial wellbeing. Unfortunately, Porter et al. (2020) did not report any results controlling for confounds such as age, income and wealth (see also Ong et al., 2019).

In another study, Joo and Grable (2004) surveyed 220 American white collar clerical workers. Participants were simply asked if they were homeowners or not (0 = no; 1 = yes), rather than outright homeowners. Financial satisfaction was measured with a single-item (10 point stair-step). Nearly 60% of the sample reported their financial satisfaction at less than five. Unfortunately, Joo and Grable (2004) did not report the total effect between housing tenure and financial satisfaction. Instead, they tested a path analytic model that included a number of other predictors and mediators (e.g., age, marital status, financial dependents, risk tolerance, etc.). Housing tenure was not found to be a statistically significant predictor of financial satisfaction. By contrast, financial literacy was found to be the largest unique predictor of financial

[1] Based on calculated results derived from Porter et al.'s (2020) Figure 5.8.

satisfaction (β = .25). Unfortunately, Joo and Grable (2004) did not report whether financial literacy was correlated positively with housing tenure. Furthermore, they included a variable named ‘financial stress level’ in the model, and it was found to be a substantial, negative correlate of financial satisfaction. Arguably, it was inappropriate to control for financial stress, as financial stress is a defining characteristic of financial wellbeing (Brüggen et al., 2017).

The possibility of a positive association between housing tenure and financial wellbeing may be considered important, as homeownership rates have been in decline over the last two decades (Ronald & Lennartz, 2020; Rowley & Ong, 2012; Wilkins et al., 2015), likely in large part due to a progressive decline in housing affordability (Colic-Peisker et al., 2012). The decline in homeownership has been contended to be an important sign of rising social inequality (Arundel & Ronald, 2021). Consequently, it may be expected that a decline in homeownership in society may potentially induce a reduction in financial wellbeing.

In summary, there is a paucity of research on the association between housing tenure and financial wellbeing. Furthermore, the results are inconsistent and/or ambiguous, as inappropriate control variables were applied. Consequently, we considered it important to estimate the association between housing tenure and financial wellbeing in a large, community sample, with appropriate applied control variables. We hypothesized that there would be an essentially linear, positive trend across housing tenure (renter, mortgagor, outright homeownership) and financial wellbeing. Given Joo and Grable (2004) found that a number of other variables predicted financial satisfaction, variables likely correlated with housing tenure and financial wellbeing, we considered it important to control for several variables, including age, wealth, and income, in order to estimate the non-spurious (independent) effect between housing tenure and financial wellbeing.

Housing Tenure: Age, Income, Wealth & Marital Status

It is non-controversial to suggest that variables such as age, income and wealth would be correlated positively with housing tenure. In many countries, it takes years for a person to save for a deposit for a mortgage (e.g., Pawson et al., 2017). Additionally, having a family facilitates the decision to buy a home (McCabe, 2018), and, typically, people in many countries have their first child at approximately 30 years of age (Qu et al., 2022). Furthermore, people's income increases with age (Di & Liu, 2007), a fact that would be expected to facilitate saving for a deposit, as well as paying off a mortgage. However, we note that an increasing percentage of people continue to hold a mortgage well into retirement (Lusardi, et al., 2018), an effect that may impact financial wellbeing negatively. Finally, wealth can generate income (e.g., dividends), therefore, wealth can be viewed favourably by lending institutions when considering a mortgage application.

Based on several empirical investigations, age, wealth, income and marital status have been found to be positive correlates of housing tenure (see Di & Liu, 2007). Furthermore, age, income and wealth have been found to be positive correlates of financial wellbeing (Collins & Urban, 2020). Thus, with respect to estimating the association between housing tenure and financial wellbeing, we considered it important to control for these variables, in order to evaluate the independent (non-spurious) effect of housing tenure onto financial wellbeing, based on a theoretically appropriate model. We considered this a key strength of our investigation, in comparison to others that have examined the association between housing tenure and financial wellbeing.

The Role of Financial Literacy

Financial literacy, a subdimension of the broader construct of financial capability[2], may be defined as knowledge of basic financial terms and concepts (Hastings et al., 2013). Commonly administered tests of objective financial literary gauge people's understanding of the time value of money, compound growth, and risk diversification, for example (Hastings et al., 2013). Financial literacy is known to associate positively with a number of specific financial behaviours, including the tendency to refinance a mortgage advantageously (Campbell, 2006), avoiding high fees (Muller et al., 2021), choosing better savings accounts (Deuflhard et al., 2019), and stock market participation (van Rooij et al., 2011). Based on a sample of elderly Australians (55+), Xue et al. (2019) found that only about 7% of Australians answered all three of their financial literacy questions correctly and approximately 30% did not answer any of the questions correctly.

In contrast to housing tenure, there is much more research on individual differences in financial literacy and financial wellbeing: two dimensions known to inter-correlate positively (Fan & Henager, 2021; Siddiqui et al., 2021). For example, Taft et al. (2013) reported a significant, positive correlation of .26 between a multi-item objective test of financial literacy and subjectively assessed financial wellbeing. Gerrans et al. (2014) reported a standardized association of .33 between financial literacy (objective) and financial wellbeing (subjective), controlling for financial status (i.e., household income/assets/debt). Joo and Grable (2004) reported a standardized beta-weight of .26 between subjective financial literacy (single item) and a 10-point stair-step single-item indicator of financial satisfaction (see also Iramani & Lutfi,

[2] According to Storchi and Johnson (2016, p. 4), financial capability is the "the combination of attitude, knowledge, skills, and self-efficacy needed to make and exercise money management decisions that best fit the circumstances of one's life…"

2021). Finally, Patel and Wolfe (2019) reported a standardized beta-weight of .40 between self-reported financial literacy and subjective financial wellbeing, controlling for general wellbeing.

Taken collectively, the magnitude of the effects reported between financial literacy and financial wellbeing may be considered typical to relatively large for individual differences research (Gignac & Szodorai, 2016). Despite the relatively large association, it is unlikely that financial literacy (i.e., knowledge of financial terms and principles) has a direct effect on financial wellbeing. Consider, for example, that crystallised intelligence (acquired general knowledge) does not associate directly with general wellbeing (e.g., Wigtil & Henriques, 2015). Thus, as suggested by others (e.g., Collins & Urban, 2020; Hung et al., 2009), it is more plausible to suggest that financial literacy impacts other phenomena that, in turn, impact financial wellbeing more directly; for example, homeownership, but also wealth and income, i.e., possible mediators of the association between financial literacy and financial wellbeing.

Financial Literacy and Homeownership

Generally speaking, owning a home is known to help people build wealth, achieve financial stability and financial independence (Stotz, 2019; Wood et al., 2017), variables known to be correlated positively with financial literacy (Hastings et al., 2013). Theoretically, the theory of planned behaviour (Ajzen, 1991) would suggest that buying a home may be, in part, determined by three factors: attitudes toward the behaviour, subjective norms, and perceived behavioural control. With higher financial literacy, positive attitudes toward homeownership may arise, as financially literate individuals are more likely to understand the long-term benefits of homeownership, such as building equity, compound growth, and potential tax advantages. Additionally, financially literate individuals may be more likely to have conversations with people in their social circles, including financial advisors (Gerrans & Hershey, 2017), about their

intentions to buy a home, seeking advice and support from those who have experienced homeownership. Finally, financial literacy is positively correlated with financial locus of control (Warmath & Zimmerman, 2019), which would be expected to reduce psychological barriers to purchasing a home. Despite the theoretical connections suggesting that financial literacy may lead to greater rates of homeownership, relatively little empirical research has been conducted on the association between financial literacy and housing tenure.

An indirectly relevant study found that housing tenure was correlated positively with real estate market knowledge in a US sample (Haurin & Morrow-Jones, 2006). More directly relevant, Gathergood and Weber (2017) found that homeowners scored 27% better on an objective financial literacy test than renters in a large UK representative sample. Clearly, more research is needed to help determine the direct and/or indirect association between financial literacy and housing tenure.

If financial literacy directly associates with housing tenure, it would suggest that people with better knowledge of financial terms and principles understand better the benefits of homeownership and/or the process of securing a mortgage, leading to improved financial well-being. As there is evidence that financial literacy can be improved (Carmel & Leiser, 2020; but see Willis, 2011), direct and/or indirect effects between financial literacy and housing tenure would support the potential benefits of financial literacy training programs.

Financial Literacy and Wealth

Several studies have shown consistent, positive associations between financial literacy and wealth (e.g., Collins & Urban, 2020; Monticone, 2010). Research suggests that individual differences in financial numeracy, as well as the capacity to avoid certain cognitive biases, helps people make better financial decisions and accumulate more wealth (Stango & Zinman, 2009).

However, because researchers tend to use effect coding and/or report unstandardized regression solutions, it is difficult to summarise the association between financial literacy and wealth in a meaningful way. Therefore, a purpose of this investigation was to estimate the effect between financial literacy, wealth, and financial wellbeing with a methodology that would allow more insightful effect size interpretations.

Additionally, it is possible that the hypothesized association between financial literacy and housing tenure is primarily mediated by wealth. If the shared variance between financial literacy and housing tenure is mediated by wealth, it would suggest relatively little role between financial literacy and financial wellbeing via housing tenure directly, a hypothesis not yet tested in the literature.

Financial Literacy and Income

Similar to wealth, financial literacy has been shown to associate positively with income (Hung et al., 2009). Based on the National Financial Capability Survey data (NFCS 2015), those who earned more than $50,000 scored approximately 30% better on an objective financial literacy test than those who earned less than $50,000 (Wagner, 2019). Even controlling for education (e.g., high school education only), those who earned more than $50,000 scored 20% better on the financial literacy test. Additionally, Potrich et al. (2015) found that objectively measured financial literacy associated positively with individual income (β = .30), controlling for the effects of individual education, family education, family income, age, occupation, marital status and gender.

However, the degree to which the effect between financial literacy and financial wellbeing is mediated by income remains to be determined. Controlling for financial literacy, Joo and Grable (2004) found that income had an indirect effect onto financial wellbeing via

solvency, financial behaviours, and risk tolerance. Unfortunately, Joo and Grable (2004) did not specify financial literacy as a predictor of income in their model. Additionally, the sample size employed by Joo and Grable (2004) was only 220, arguably insufficient to test indirect effects with an acceptable level of statistical power (MacKinnon et al., 2004). Therefore, the effect of financial literacy onto financial wellbeing via income is currently unknown. As financial literacy associates positively with income (e.g., Lusardi & Tufano, 2015), and income associates positively with financial wellbeing (e.g., Taft et al., 2013), it is plausible that financial literacy may help increase income generation, which, in turn, would help increase the possibility of owning a home and, ultimately, financial wellbeing: a hypothesis we tested in this investigation.

Moderating Role of Gender

Controlling for household type, income, and source of income, Kupke et al. (2014) found that, across all income levels, homeownership rates were higher for women than for men, based on the 2008 Australian Bureau of Statistics survey. Furthermore, the effect was largest at the top income quintile, such that 35 to 44 year old single women were approximately 30% more likely to be a homeowner than 35 to 44 year old single men. Such results have been interpreted to suggest that women value homeownership more than men (Viljoen et al., 2020). The female relative preference for homeownership may be considered consistent with the female relative tendency to exhibit nesting behaviours (Anderson & Rutherford, 2013). Additionally, on average, women tend to purchase relatively less risky investments than men (Eckel & Grossman, 2008), and housing is considered a relatively less risky asset class (Bellante & Green, 2004). Consequently, we hypothesized that the effect of housing tenure onto financial wellbeing would be larger for women than for men. Such an observation would imply that the decreasing trend in homeownership observed since approximately the year 2000 (Rowley & Ong, 2012; Wilkins et

al., 2015) has had, and will to continue to have, a more substantial, negative impact on the financial wellbeing of women than men.

Summary & Purpose

Theoretically, housing tenure should associate positively with financial wellbeing (Clark & Diaz-Serrano, 2021), however, relatively little empirical research has estimated the effect, controlling for known confounds such as age, wealth and income. Amidst declining homeownership rates (Ronald & Lennartz, 2020; Wilkins et al., 2015), a direct effect between housing tenure and financial wellbeing may potentially help explain observed declines in financial wellbeing (Myers et al., 2019). Furthermore, as women value homeownership more than men (Viljoen et al., 2020), the progressive decline in homeownership may be expected to impact more greatly the financial wellbeing of women than men.

Financial literacy is known to correlate positively with financial wellbeing (Fan & Henager, 2021; Siddiqui et al., 2021), and some research suggests a positive effect between financial literacy and housing tenure (Gathergood & Weber, 2017). However, the associations have not yet been decomposed into direct and indirect effects; thus, the possible mechanisms by which financial literacy may impact financial wellbeing have not yet been estimated. Consequently, based on an elderly sample of Australians (55+), we tested a structural equation model with financial literacy as a predictor of financial wellbeing. Furthermore, housing tenure, wealth, and income were specified as intermediate (mediator) variables. As both age and marital status are known to associate positively with income, wealth, housing tenure, financial literacy and financial wellbeing (Collins & Urban, 2020; Binswanger & Carman, 2012), we included age and marital status as a control variables in the model (see Figure 1). We hypothesized that the association between financial literacy and financial wellbeing would be mediated (partially or

fully) by wealth, income and/or housing tenure. Finally, we hypothesized that the direct effect of housing tenure onto financial wellbeing would be larger for women than for men, controlling for wealth, income, age and marital status.

Method

Sample & Procedure

As part of a cross-sectional design, a total of 3,484 participants were recruited in 2010 from a random sample of 15,000 elderly Australian members of the National Seniors Association (NSA), however, complete data were available for 2,613 participants (missing essentially at random; Little's MCAR $\chi^2/df = 1.84$). The sample was representative of the elderly Australian population with respect to age, gender and location, based on values published by the Australian Bureau of Statistics (see Higgins & Roberts, 2012, for further details). The primary purpose of data collection was to study financial issues among elderly Australians. Five participants self-reported outlying ages (i.e., 108, $n = 2$; 109, $n = 3$) and were removed from the final sample. The final sample ($N = 2{,}608$) had a mean age of 65.83 ($SD = 9.48$; range = 41 to 99; 41.8% females). More than half of the sample was fully retired (62.3%). Of the participants who worked previously (or were working), 73.1% worked in a white/pink collar occupation (15.1% blue collar). The majority of the sample (75.3%) was married or in a de facto relationship (single/widowed/separated/divorced = 24.7%). A minority of the sample was university educated (30.5% university or higher), and a majority reported themselves as healthy (83.1% excellent/very good/good).

Measures

Financial wellbeing was measured with the following question, 'How would you rate your current state of financial wellbeing?', and a 5-point Likert scale (*very poor* = 1, *somewhat*

poor = 2, *neither good nor poor* = 3, *fairly good* = 4, *very good* = 5). Housing tenure was measured with the following item, 'Do you or your family own your own residence outright, are you paying it off, or are you renting?' (*renting* = 1, *mortgagor* = 2, *outright homeowner* = 3).

Income was measured with the following question: 'In the 2008/2009 financial year, what was your total household income, before taxes? Household income is income from all sources from all members of your household.' The response categories were: 'Less than $20,000', '$20,000 to $29,999', '$30,000 to $39,999', '$40,000 to $49,999', '$50,000 to $59,999', '$60,000 to $69,999', '$70,000 to $79,999', '$80,000 to $89,999', '$90,000 to $99,999', '$100,000 or more', 'Don't know', and 'I do not want to answer this question.' The data were coded into a scale from 1 ('Less than $20,000) to 10 ('$100,000 or more'). Participants who responded 'Don't know' or 'I do not want to answer this question' were omitted from the sample.

Wealth was measured with the following question: 'In total, about how much money would you say you (and your partner, if you have one) currently have in savings and investments, including investment or holiday properties and money in superannuation, but excluding your home? The response categories were: 'Less than $25,000', '$25,000 to less than $50,000', $50,000 to less than $100,000', '$100,000 to less than $200,000', '$200,000 to less than $300,000', '$300,000 to less than $400,000', '$500,000 to less than $750,000', '$750,000 to less than $1 million', '$1 million or more', 'Don't know', 'I do not want to answer this question.' The data were coded into a scale from 1 ('Less than $25,000) to 10 ('$1 million or more'). Participants who responded 'Don't know' or 'I do not want to answer this question' were omitted from the sample.

Financial literacy was measured with three questions relevant to investment strategies/risk and the time value of money. An example item included: ‘If you had a choice between receiving $10,000 now, or a greater amount of money 1 year from now, what is the minimum amount you would need to receive in 1 year in order for you to choose this option instead of $10,000 now?' Participants were required to provide a numeric response to this question, and the responses were scored ‘correct =1’, ‘partially correct .50’, and ‘incorrect = 0’ Internal consistency reliability was estimated at ω = .68. The other two questions were multiple choice in nature. For more details, see Xue et al. (2019).

Data Analysis

The descriptive statistics were estimated in SPSS (version 28). The structural equation model (see Figure 1) was tested in Amos (version 28; maximum likelihood estimation and bias-corrected bootstrapping with 3,000 resamples). Direct and indirect effects were estimated conventionally (Holbert & Stephenson, 2003). Model close-fit was evaluated via RMSEA/SRMR ($\leq$ 0.08 indicative of acceptable close-fit) and CFI ($\geq$ 0.950 indicative of acceptable close-fit). Financial literacy was modeled as a latent variable defined by the three financial literacy questions. All other variables were modeled as observed variables. Differences between standardized effects were tested with user-defined estimands (see supplementary materials). Finally, the gender moderator hypothesis was tested with a chi-square difference test, whereby the unconstrained and constrained (i.e., housing tenure to financial wellbeing beta-weights constrained to equality) models were compared (Anderson & Gerbing, 1988).

Results

Descriptive Statistics

Excluding age (see above), no outliers were identified based on the outlier inter-quartile range rule with a 3.0 multiplier. The data were considered sufficiently normally distributed for parametric statistics (skew < |2.0|; Bishara & Hittner, 2012). On average, the participants rated their financial wellbeing at somewhere between '*neither good nor poor'* and '*fairly good'* (*M* = 3.69; see Table 1). Most of the participant's owned a home outright (77.3%; *n* = 2,017); however, a non-trivial percentage were paying off a mortgage (16.8%; *n* = 438) and some participants were renting (5.9%; *n* = 153). There was a small, statistically significant association between gender and housing tenure (*phi* = .06, *p* = .007). In percentage terms, renting: female = 7.0% vs. male = 5.1%; mortgagor, female = 18.7% vs. male = 15.4%; outright owner, female = 74.4% vs. male = 79.5%. Thus, there was an essentially linear trend for women to report less homeownership status, in comparison to men.

The mean wealth and income levels corresponded to 5.82 (or $282k) and 5.56 (or $56k per annum), respectively. Finally, as can be seen in Table 1, the mean on the financial literacy test was 1.36 (*SD* = 1.01), suggesting that, on average, people answered a little more than one of the three questions correctly. Comparing males versus females (see Table S1), on average, females scored lower on financial wellbeing (*d* = -.15, *p* < .001), wealth (*d* = -.36, *p* < .001), income (*d* = -.26, *p* < .001) and financial literacy (*d* = -.36, *p* < .001).

Inter-Correlations & Mean Differences

As can be seen in Figure 2 (Panel A), the financial wellbeing means displayed a linear trend across the three housing tenure levels, $F(1, 2605) = 75.45$, $p < .001$: renting $M = 3.07$ ($SD = 1.06$); mortgagor $M = 3.41$ ($SD = .91$); outright homeowner $M = 3.79$ ($SD = .81$). Based on Games-Howell multiple comparisons, outright homeowners reported, on average, 23.4% greater financial wellbeing than renters, $\Delta M = .73$, 95% CI [.93, .52], $g = .87$, and 11.1% greater

financial wellbeing than mortgagors, ΔM = .39, 95% CI [.28, .50], g = .46. Finally, mortgagors reported, on average, 11.1% greater financial wellbeing than renters, ΔM = .34, 95% CI [.15, .53], g = .36. Correspondingly, as hypothesized, there was a positive correlation between housing tenure and financial wellbeing (r = .24, 95% CI [.20, .28], p < .001), implying a total effect equal to β = .24 (see Table 1).

Additionally, wealth (r = .26, 95% CI [.22, .29], p < .001), age (r = .24, 95% CI [.19, .27], p =.001), and financial literacy (r = .13, 95% CI [.08, .17], p < .001), but not income (r = -.03, 95% CI [-.07, .01], p = .165), correlated positively and significantly with housing tenure. Finally, wealth (r = .52, [.49, .55], p < .001), income (r = .34, 95% CI [.31, .38], p < .001), age (r = .07, 95% CI [.03, .11], p = .002) and financial literacy (r = .19, 95% CI [.15, .24], p < .001) all correlated positively with financial wellbeing. On the basis of the above inter-variable correlations, and the correlations with marital status (see Table 1), a theoretically based model was tested, in order to estimate the unique effects of the predictor variables onto housing tenure, as well as financial wellbeing.

Structural Equation Model: Direct Effects

The model was found to be associated with acceptable model-fit, $\chi^2(14) = 182.31$, p < .001, RMSEA = .068, SRMR = .050, CFI = .965. As can be seen in Figure 1, wealth evidenced the numerically largest standardized beta-weight onto housing tenure (β = .29, 95% CI [.24, .33], p < .001), followed by age (β = .23, 95% CI [.19, .27], p < .001), and financial literacy (β = .10, 95% CI [.06, .15], p < .001). Thus, controlling for several known correlates of housing tenure, higher levels of financial literacy were associated with a higher levels of housing tenure (renting, mortgagor to outright owner). In total, 14.9% of the variance in housing tenure was accounted for by the model, R^2 = .149, 95% CI [.12, .18], p = .002.

Furthermore, housing tenure yielded a statistically significant, positive, direct effect onto financial wellbeing, β = .12, 95% CI [.08, .16], p < .001, alongside wealth (β = .40, 95% CI [.36, .44], p < .001), income (β = .21, 95% CI [.16, .25], p < .001), and age (β = .14, 95% CI [.10, .17], p < .001).[3] Thus, higher levels of housing tenure (renting, mortgagor to outright owner) were associated with greater financial wellbeing, independently of the effects of several other variables. Based on a ANCOVA with housing tenure as the independent variable, financial wellbeing as the dependent variable, and wealth, income, age, and marital status as covariates, the null hypothesis of equal adjusted means was rejected, $F(2, 2601) = 24.01$, p < .001, partial η^2 = .02 (see Figure 2, Panel B). Based on Fisher's LSD pairwise multiple comparisons[4], the outright homeownership group financial wellbeing adjusted mean (M = 3.74) was 9.6% greater than the renter group adjusted mean (M = 3.41), ΔM = .33, 99% CI [.14, .53], g = .40, and 6.3% greater than the mortgagor group adjusted mean (M = 3.52), ΔM = .22, 99% CI [.11, .34], g = .27. By contrast, no significant difference was observed between the mortgagor and renter group means, ΔM = .11, 99% CI [-.11, .33], g = .12.

There was no direct effect between financial literacy and financial wellbeing, and the model modification indices did not suggest the inclusion of one (i.e., modification index value < 4). Finally, we note that marital status had a significant, positive, direct effect onto wealth (β = .15, p < .001), but a significant, negative, direct effect onto financial wellbeing (β = -.07, p < .001), controlling for wealth, income, housing tenure and age. A total of 31.1% of the variance in

[3] Wealth evidenced a statistically significantly greater effect onto financial wellbeing than income ($\Delta\beta$ = .19, p < .001) and housing tenure ($\Delta\beta$ = .28, p < .001), and income evidenced a statistically significantly greater onto financial wellbeing than housing tenure ($\Delta\beta$ = .09, p = .002).

[4] Due to the unavailability of Games-Howell procedure for ANCOVA (robust to unequal variances/sample sizes), we utilized Fisher's LSD procedure with 99% confidence to mitigate Type I error risk.

financial wellbeing was accounted for by all predictors in the model, R^2 = .311, 95%CI: [.281, .340], p = .001.

Structural Equation Model: Indirect Effects

The indirect effect between financial literacy and financial wellbeing via housing tenure was positive and statistically significant, β = .01, 95% CI [.01, .02], p < .001, suggesting that the total effect between financial literacy and financial wellbeing (i.e., β = .19) was partially mediated by the effect of housing tenure. Statistically significant and positive indirect effects were also observed via wealth, β = .10, 95% CI [.08, .12], p < .001, and income, β = .04, 95% CI [.03, .05], p < .001.

The indirect effect via wealth was statistically significantly larger than the indirect effect via income ($\Delta\beta$ = .06, 95%CI [.03, .08], p < .001) and housing tenure ($\Delta\beta$ = .09, 95%CI [.07, .11], p < .001). Additionally, the indirect effect between financial literacy and financial wellbeing via income was larger than the indirect effect via housing tenure ($\Delta\beta$ = .03, 95%CI [.02, .04], p < .001). Financial literacy showed no direct effect on financial wellbeing, indicating its total effect was fully mediated by wealth, income, and housing tenure.

Structural Equation Model: Multiple-Groups (Gender)

Next, we tested the structural equation model as a multi-group model with men and women specified as groups. The multi-group model yielded acceptable levels of model close-fit: $\chi^2(28) = 136.45$, p < .001, RMSEA = .039, SRMR = .030, CFI = .977. Furthermore, though the direct effect of housing tenure onto financial wellbeing was numerically larger for women, β = .14, 95%CI: [.09, .19], p < .001, in comparison to men, β = .10, 95%CI: [.05, .15], p < .001, the numerical difference in the beta-weights ($\Delta\beta$ = .04) was not statistically significant, $\chi^2(1) = 1.50$, p = .221; see Figure S1 and S2; see note 1 in supplementary materials). Thus, our hypothesis that

housing tenure is a more substantial predictor of financial wellbeing for women than men was not supported.

Table 1

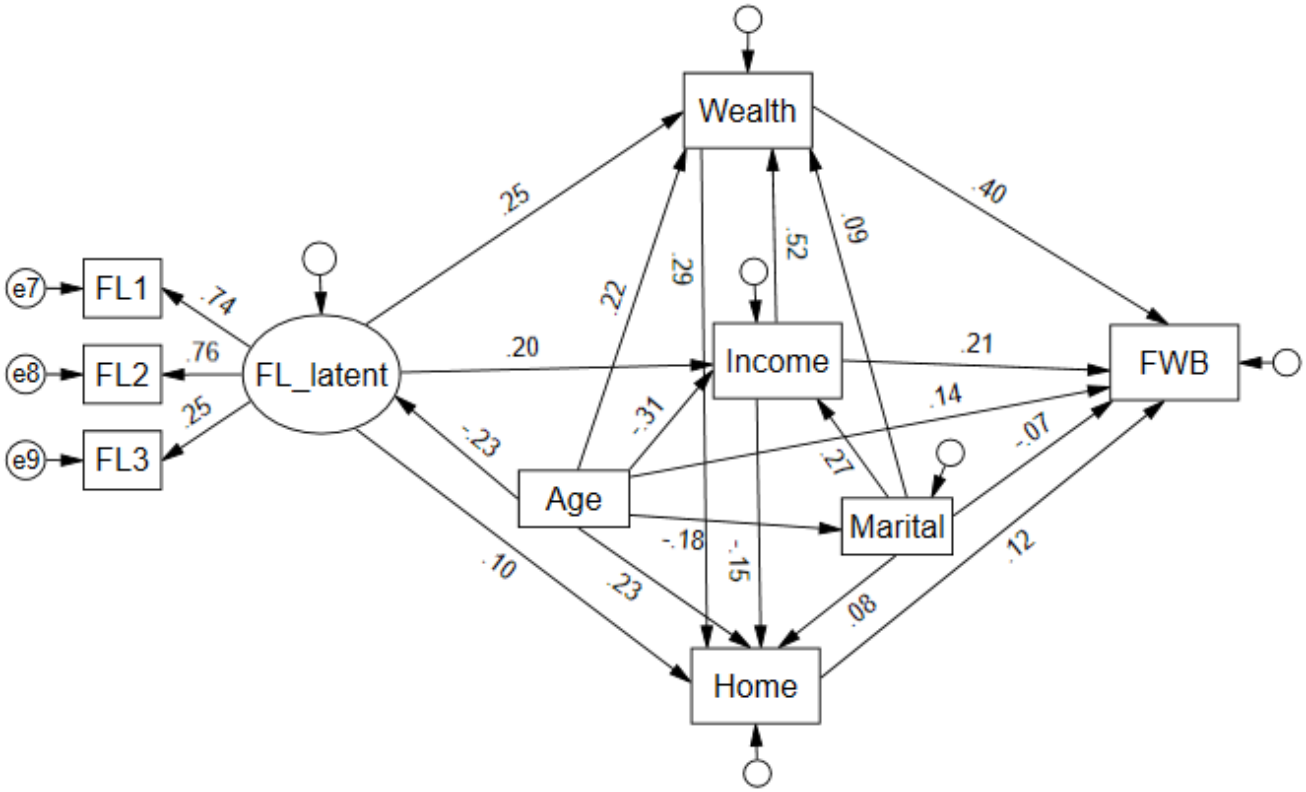
Bivariate Inter-Correlations and Descriptive Statistics Associated with Observed Variables Included in the Structural Equation Model

	Correlations							Descriptives			
	1.	2.	3.	4.	5.	6.	7.	*M*(*SD*)	*Mdn*	skew	kurt.
1. FWB	1.0							3.69 (.87)	4.0	-.62	.45
2. Home	.24*	1.0						2.71 (.57)	3.0	-1.86	2.40
3. Wealth	.52*	.26*	1.0					5.82 (2.91)	6.0	-.08	-1.20
4. Income	.34*	-.03	.54*	1.0				5.56 (3.06)	5.0	.17	-1.33
5. FL	.20*	.12*	.36*	.30*	1.0			1.36 (1.01)	1.5	-.01	-1.36
6. Age	.07*	.24*	-.06*	-.40*	-.19*	1.0		65.83 (9.48)	64.0	.48	-.59
7. Marital Status	.10*	.08*	.27*	.35*	.19*	-.18*	1.0	.75 (.43)	1.0	-1.17	-.62

Note. N = 2,608; FWB = financial wellbeing; Home = housing tenure; Wealth = household wealth; Income = household income; FL = financial literacy; kurt. = kurtosis; * $p < .05$; correlations with financial literacy represent latent variable correlations; the FL correlations are observed correlations, whereas FL is modeled as a latent variable in the SEM.

Figure 1

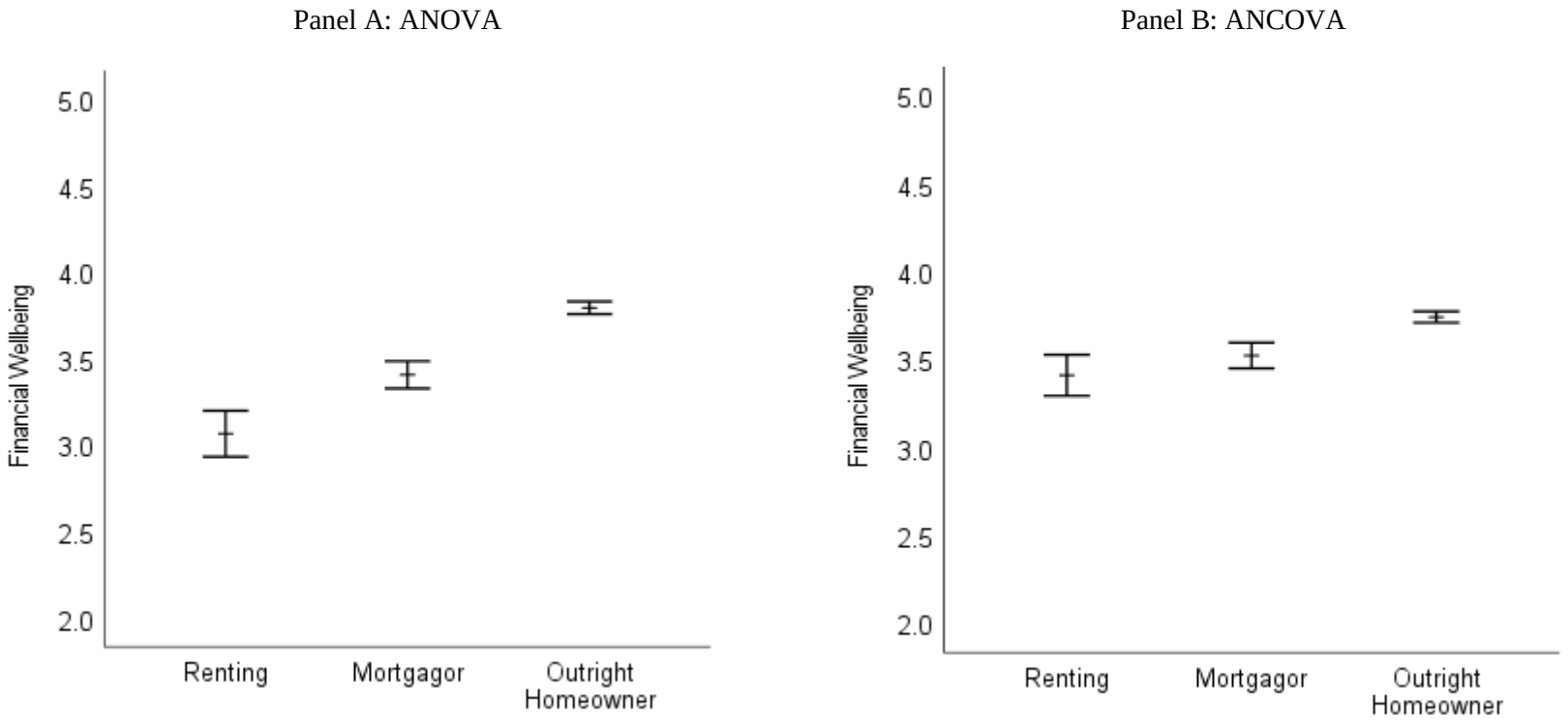
Fully Standardized Associations between Financial Literacy, Wealth, Income, Housing Tenure and Financial Wellbeing Controlling for Age and Marital Status



Note. *N* = 2,608; FL = financial literacy; Wealth = personal and partner wealth; Income = personal and partner income; Home = housing tenure (1 = renting; 2 = mortgagor; 3 = outright owner); Marital = marital status (0 = not married; 1 = married); FWB = financial wellbeing; all coefficients statistically significant, $p < .05$.

Figure 2

Financial Wellbeing Means and 95% Confidence Intervals Across Housing Tenure



Note. Renting *n* = 153; Mortgagor *n* = 438; outright homeowner *n* = 2,017; Panel B = controlling for wealth, income, age, and marital status.

Discussion

We found that housing tenure was positively associated with financial wellbeing, controlling for wealth, income, age, and marital status. We also found positive associations between financial literacy and housing tenure, wealth, and income. Additionally, financial literacy and financial wellbeing were positively inter-correlated. The total effect between financial literacy and financial wellbeing was fully mediated, in part by housing tenure, but more substantially through wealth and income. Finally, gender was not found to be a moderator of the effect between housing tenure and financial wellbeing. We discuss each of these results next.

Housing Tenure and Financial Wellbeing

Housing tenure correlated positively with financial wellbeing at $r = .24$, a magnitude typical for individual differences research (Gignac & Szodorai, 2016). Specifically, we found that outright homeowners reported, on average, 23.5% higher levels of financial wellbeing than renters, and 11.1% higher levels than mortgagors. Our results are consistent with Porter et al. (2020) who reported essentially linear, increasing financial wellbeing means across the same three levels of housing tenure.

Our investigation extends the results of Porter et al. (2020), as we found a significant unique effect between housing tenure and financial wellbeing, controlling for several confounding variables, i.e., wealth, income age and marital status. Thus, we provide novel evidence to suggest that the effect of housing tenure onto financial wellbeing may not be spurious. Controlling for wealth, income, age and marital status, the financial wellbeing benefits enjoyed by outright homeowners over renters was reduced to a 10.0% increase; and over mortgagors the benefit was reduced to a 6.3% increase. Thus, without controlling for other variables, the effect of housing tenure may be misleadingly large. Nonetheless, controlling for

other variables, outright homeownership does appear to have a unique, positive effect onto financial wellbeing. As homeownership rates have declined in many countries (Wilkins et al., 2015; Stebbing & Spies-Butcher, 2016), a phenomenon that is expected to continue further (Myers et al., 2019), peoples' level of financial wellbeing may be expected to be eroded, assuming a causal connection between the two variables.

Based on a longitudinal study (three years), Park and Kim (2022) found that buying a home led to increased life satisfaction (a correlate of financial wellbeing), suggesting a potential causal connection between housing tenure and financial wellbeing. However, Park and Kim (2022) also found that the effects were primarily present only for those who did not report housing affordability stress. Correspondingly, people tend to overestimate the degree to which homeownership actually increases life satisfaction (Odermatt & Stutzer, 2022). Thus, homeownership should not be considered a categorically positive event. In addition to potentially increasing financial stress, homeownership can be an impediment to employment (reduces mobility) and can increase work travel time/cost (Stutzer & Frey, 2008).

In contrast to our modeling results, Joo and Grable (2004) did not report a significant, unique effect between housing tenure and financial wellbeing. However, Joo and Grable's (2004) sample size was not large (< 225). Additionally, their model was arguably inappropriately specified by controlling for effects of financial stress onto financial wellbeing. Finally, housing tenure was measured with only two levels. Consequently, we believe our results are more valid representations of the effects, in this context.

Admittedly, with so few studies in the area, strong conclusions cannot be justifiably generated. However, on balance, we believe the evidence suggests that homeownership, particularly outright homeownership, yields unique financial wellbeing benefits; and the benefits

appear to be approximately equal for males and females, as our gender moderator analysis failed to identify a significant effect. Thus, although women tend to value homeownership more than men (Viljoen et al., 2020), housing tenure does not appear to impact financial wellbeing more so for women than men. Given declining homeownership rates in many countries (Stebbing & Spies-Butcher, 2016; Wilkins et al., 2020), the negative impact on financial wellbeing may be expected to be about equal for both women and men.

Financial Literacy: Total and Direct Effect

Consistent with many other investigations (e.g., Gerrans et al., 2014; Joo & Grable, 2004; Patel & Wolfe, 2019), we found a positive total effect between financial literacy and financial wellbeing (β = .20; 4% shared variance). Also consistent with previous investigations (Collins & Urban, 2020; Joo & Grable, 2004), we did not find financial literacy to be a unique predictor of financial wellbeing. Thus, it may be concluded that financial literacy does not have any direct effect on financial wellbeing. Instead, we found that financial literacy yielded statistically significant indirect effects onto financial wellbeing via three unique (independent) paths: housing tenure, wealth, and income.

Indirect Effects: Housing Tenure, Wealth and Income

Consistent with the theory of planned behaviour (Ajzen, 1991), a statistically significant, positive indirect effect of financial literacy onto financial wellbeing operated through housing tenure. On average, more financially literate people are likely to better understand the financial benefits of owning a home (Gilbert et al., 2013), based on an appreciation of the concepts of inflation and compound growth (Hastings et al., 2013), for example, which may facilitate favourable attitudes toward homeownership. Additionally, more financially literate people would be expected to discuss the possibilities of owning a home with others, including possibly

financial advisors (Gerrans & Hershey, 2017). Finally, on average, financially literate people are better able to engage in the self-control behaviours required to pay off a mortgage (e.g., consistent saving; Jonubi & Abad, 2013). Thus, the observation of an indirect effect via housing tenure is congruent with previous research, including the theory of planned behaviour, though our investigation is the first to test the hypothesis specifically.

The largest indirect effect of financial literacy onto financial wellbeing was via wealth. First, it was noted that a one standard deviation increase in financial literacy (i.e., one extra question answered correctly) was associated with .10 of a standard deviation increase in wealth (i.e., ≈ $14k)[5]. It is well established that financial literacy is associated positively with wealth (Collins & Urban, 2020; Monticone, 2010); thus, our research helps solidify such a finding with a large sample of older Australians. Additionally, people with greater financial literacy make financially advantageous decisions, including mortgage refinancing (Campbell, 2006), avoiding unnecessary fees (Muller et al., 2021), selecting savings accounts with higher interest rates (Deuflhard et al., 2019), equity investments (van Rooij et al., 2011), and deal with financial emergencies more effectively (Gjertson, 2016). Thus, our results support the notion that financial literacy may help with wealth accumulation which, in turn, may facilitate financial wellbeing.

The next largest indirect effect was through income. A one standard deviation increase in financial literacy (i.e., one extra question answered correctly) was associated with .44 of a standard deviation increase in annual household income (i.e., ≈ $1k)[6]. An explanation for the indirect effect between financial literacy and financial wellbeing may involve multiple causes.

[5] The wealth mean and standard deviation were 5.82 and 2.82, respectively. The mean of 5.82 corresponded to $282k. Ten percent (i.e., β = .10) of a 2.82 standard deviation corresponds to .282. Therefore, .282 / 5.82 = .048; .048*$282k = $13.54k.

[6] The income mean and standard deviation were 5.56 and 3.06, respectively. The mean of 5.56 corresponded to $56k. Four percent (i.e., β = .04) of a 3.06 standard deviation corresponds to .122. Therefore, .122 / 5.56 = .022; .022*$56k = $1.23k.

For example, more financial literate people may appreciate more greatly the benefits of income through work, and, therefore, work more consistently throughout life. Additionally, people familiar with different types of investments would be expected to know how to invest their wealth to generate regular income (Cole & Shastry, 2009).

Limitations and Future Research

We acknowledge that financial wellbeing could be measured multi-dimensionally, including subdimensions of financial stress, anticipated standard of living, and financial freedom, for example (Brüggen et al., 2017). Thus, more insightful results may have been obtained in this investigation with a multi-item measure of financial wellbeing. Furthermore, a review of objective measures suggests that financial literacy should be measured with a minimum of 13 to 15 questions (Gignac & Ooi, 2021), whereas this investigation did so with only three questions. Although coefficient omega was estimated at .68, suggesting reasonable internal consistency reliability, a future investigation with a more comprehensive measure of financial literacy would be beneficial to estimate the magnitude of the effects with greater stability (Kretzschmar & Gignac, 2019).

We also acknowledge that the model we tested is only one among many plausible models. For example, we specified financial literacy as a direct effect of wealth and housing tenure, though it is possible that wealth and housing tenure cause financial literacy, or that there are bidirectional effects between the two dimensions, consistent with an interactionism theory of behaviour (Monticone, 2010; Reynolds et al., 2010). As our data are cross-sectional in nature, we cannot infer causality. Therefore, more experimental work in this area is needed to help confirm (or disconfirm) the assumptions implied by our model.

Based on the research to date, including this investigation, approximately 30 to 50% of the variance in financial wellbeing appears to be unaccounted for by variables such as financial literacy, wealth, income, housing tenure, age, and marital status (Collins & Urban, 2020; Gerrans et al., 2014; Joo & Grable, 2004). Thus, we acknowledge that at least half of the variance in financial wellbeing remains unaccounted. We also acknowledge that our results are based on an Australian sample. Thus, a generalisability study based on samples from multiple countries would be welcome.

We treated housing tenure as consistent with ordinal level measurement, not nominal measurement, and, therefore, we did not employ an effect coding strategy in our modeling, a strategy that might be preferred by some. Finally, we did not include education as a control variable in our model, because some people learn financial literacy in university (LaBorde, et al., 2013). Thus, to control for education would, in part, control for financial literacy.

Conclusion

Housing tenure (renter, mortgagor, outright owner) predicts financial wellbeing positively, independently of the effects of wealth, income, age and marital status, at least in a relatively elderly sample of Australians. Furthermore, financial literacy may play a role in the development of financial wellbeing across multiple routes, one of which appears to be housing tenure. As homeownership rates continue to decline (Ronald & Lennartz, 2020), societal level decreases in financial wellbeing may be observed in future.

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