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Saving behaviour in the Australian dream: Its relationship with aspiration and motivation, financial literacy, and materialism

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Saving Behaviour in the Australian Dream:
Its Relationship with Aspiration and Motivation, Financial Literacy, and Materialism

Ming d'Iapico-Bien

A report submitted in Partial Fulfilment of the Requirement for the Award of Bachelor of
Science (Psychology) Honours, School of Arts and Humanities, Edith Cowan University.

2018

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SAVING BEHAVIOUR IN THE AUSTRALIAN DREAM

Abstract

In Australia, most people aspire to achieve the “Australian dream” of owning their homes. Australian house prices have risen dramatically in comparison to people’s incomes, but despite this, many Australians still strive to enter the property market. The aim of this correlational study was to investigate the relationships between saving behaviour (with the ultimate goal of spending accumulated savings on a house deposit) and various psychological variables over and above sex, age, education, employment status, and income. The investigated predictor variables were motivation, extrinsic aspiration, financial literacy, and materialism. Previous research grounded in self-determination theory (SDT) has shown that intrinsic (autonomous) motivation predicts sustained effort in goal striving and goal attainment, whereas extrinsic (controlled) motivation does not. Theoretically, it was thought that extrinsic life aspirations (aspiring to achieve financial success and social recognition) would be related to saving money for the “Australian dream” because the goal imbibes notions of high(er) status, and is contingent upon being financially successful. There are no known studies to date on motivation and extrinsic aspiration within SDT for goal directed saving behaviour. Previous research on financial literacy has consistently shown that it is associated with better money management (i.e. financial behaviours such as saving, spending and borrowing money). In this study, the relationship between financial literacy and saving behaviour was investigated in the context of saving for a tangible durable, rather than saving for its own sake, or for something intangible such as retirement and emergencies. Lastly, previous research on materialism has consistently shown that it is negatively associated with saving for precautionary reasons; and positively associated with spending and credit card debt. Because of the inherently material nature of homes and the widespread desire to own them, the relationship between materialism and saving behaviour was investigated to find out if a different relationship would emerge. Participants living in Australia between the ages of 18 – 40-years ($N = 230$) completed an online survey. Hierarchical regression analyses and Pearson’s correlation showed that there was no relationship between types of motivation and saving behaviour; and no relationship between extrinsic aspiration and saving behaviour. Consistent with previous research, financial literacy was positively and significantly associated with saving behaviour; and materialism was negatively and significantly associated with saving behaviour. Scores for financial literacy were considerably low among participants. Although improving financial literacy would be beneficial for aspiring homeowners (and for everyone more broadly), saving behaviour probably would not improve dramatically because demographic variables and financial literacy explained only 5.4% of the variation in saving behaviour. Aspiring homeowners (particularly those who obtained higher scores on the measure for materialism) should prioritise addressing their spending tendencies associated with materialism before addressing financial literacy. Demographic variables and materialism explained 11% of the variation in saving behaviour. Study limitations and strengths, and suggestions for future research are presented.

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Saving Behaviour in the Australian Dream:

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In this study, I investigated psychological variables that predict saving behaviour (with the ultimate goal of spending accumulated savings on a house deposit rather than education, employment status, and income). Economic discussions on saving have focussed predominantly on income (Wärneryd, 1989). Also, saving has been studied more by economists than psychologists, so consequently the frequently studied variables which positively or negatively relate to saving behaviour besides income have included number of dependants, liquid assets (e.g. stock shares), illiquid assets (e.g. housing), interests rates, indebtedness (e.g. from poor credit card use), taxation, and other government policies that affect superannuation (Beal, 2000). According to Phillips (2011) from the National Centre for Social and Economic Modelling, buying in the Australian property market is challenging because of fast rising house prices and relatively stagnant after-tax income. Between 1991 and 2011, house prices rose by 263% whereas income rose by only 95% (Phillips, 2011). With the exception of winning a lottery or receiving a large inheritance, having the means to buy a home would be contingent on saving money for an extended period for most people, especially in Australia. Saving money requires planning and structuring of activities within time towards goals and postponing benefits and outcomes to the future (van Veldhoven & Groenland, 1993). Therefore, it is important to investigate the relationship between saving behaviour and a variety of psychological variables (presented later in the introduction) which can help, or hinder people's saving behaviour (and their chance of becoming homeowners).

The Australian Dream

Historically, the goal of homeownership has been central to the aspirations of generations of Australians, and helped shape part of the national identity (Bessant & Johnson,

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2013). Evidence of this can be found in reports by the Australian Bureau of Statistics ([ABS] 2012). Approximately 70% of residential properties are owned (with or without a mortgage in place). It is also evident when comparing Australia with some other developed countries. In Switzerland, Germany, and Denmark, 49.2%, 39.9%, and 37.3% of people live in rented (as opposed to owned) housing respectively (Eurostat, 2017). In France, homeownership rates closely match Australia (Eurostat, 2017), however under French legislation people are not allowed to obtain a home loan if their repayments will exceed more than 30% of their income (Économie et Statistique, 2009). Possible reasons for the contrast in homeownership rates are differences in cultural values and tenancy agreement frameworks. In Australia, renting is associated with low status, and can be fraught with insecurity because of short-term leases (Colic-Peisker & Johnson, 2010). Renting is often regarded as an inferior choice for long-term housing needs (Crowley & Li, 2016). The notion that money spent on rent is dead money persists (Colic-Peisker & Johnson, 2010). The phrase “the Australian dream” has denoted how Australians think they ought to live (Bessant & Johnson, 2013). In addition to providing secure shelter, owning a home in Australian society attracts respect from family and peers, and enables people to enhance their identity and personality (Bruce & Kelly, 2013). Considerable means are needed if one wishes to move away from renting (or to avoid renting if one lives with parents) and into homeownership.

According to the Commonwealth Bank of Australia ([CBA] 2017), a potential home buyer ideally needs 20% of the purchase price of a desired property. The CBA indicate that financial institutions can lend money to someone who has less than 20%, however this attracts substantial fees such as lenders mortgage insurance or low deposit premiums. For many young Australians, the decision to buy a home is delayed until they are in partnerships or marriages (Bruce & Kelly, 2013). This is consistent with the Australian Institute of Health and Welfare’s (2015) findings which showed a decline in homeownership because of rising

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single-person households. Based on average Australian capital-city house price (\$669,700 AUD), and the average weekly income of workers (\$1,544 AUD) reported by the ABS (2017a, 2017b), individuals with average weekly income would need to save money for 8.34 years before they would have accumulated a sufficient (20%) deposit of \$133,940 (assuming they saved 20% (\$309) of their income every week; and assuming no interest is earned on money gradually being accumulated). This seems to be a formidable goal, especially when there are other persistent living expenses such as food, utilities, rent (for people not living with parents/kin), and social expenses (e.g. birthday or wedding presents). Despite this, Australians are still entering, or saving money to enter the property market (Phillips, 2011).

Saving Behaviour

In common parlance, saving means putting money in banks or building societies to protect against future insecurities, or to save up for goods or services (Lunt & Livingstone, 1991). Saving behaviour is a complex and challenging concept in psychology because there is not one particular theory that can adequately encompass the macro and micro contexts of people's lives (Livingstone & Lunt, 1993; Lunt & Livingstone, 1991). Key theories (or models) consistently cited in literature on why people save are described below.

As cited in Wärneryd (1989), Lindqvist (1981) developed a four-level hierarchy for understanding reasons for saving (i.e. putting money in a bank). At the lowest level, people need to handle money to deal with short-term financial goals. At the second level, people need to have reserves of money for precautionary purposes. Stemming from this, at the third level people need to save and manage large amounts of money in order to buy something expensive. At the fourth level, people need to manage accumulated wealth.

Also cited in Wärneryd (1989) is Katona's (1975) economic-psychological theory of saving is based on the idea that saving is one side of the saving/consuming dyad. Three types

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of savings can be defined in motives for saving. They are: (1) contractual savings (instalment purchases – money is not spent on consumables but put towards paying off a debt for durables such as cars and houses); (2) discretionary savings (choosing to save left-over money among attractive alternatives after basic needs are satisfied); and (3) residual savings (money which has been saved by default rather than by planning).

As cited in Canova, Manganello Rattazzi, and Webley (2005), Modigliani and Brumberg (1954) proposed the life cycle hypothesis. According to Modigliani and Brumberg's theory, people save a portion of their income in their working years in order to provide for their final years when they can or will no longer earn income. Permanent income and retirement motives are the predominant reason for saving in this theory (Canova et al., 2005); and it appears to overlap with the second motive listed below.

Keynes's (1936) theory as cited in Browning and Lusardi (1996) appears to be the most comprehensive of all the consistently cited theories. Keynes proposed eight saving motives. They are: (1) the precautionary motive (wanting to build up reserves for unforeseen contingencies); (2) the life-cycle motive (wanting to build up reserves to provide for future life stages, such as retirement); (3) the inter-temporal substitution motive (for the enjoyment of interest and appreciation of savings); (4) the improvement motive (for the enjoyment of gradually increasing expenditure for the purpose of improving one's living standards, rather than having to decrease expenditure and experience a decline in living standards); (5) the independence motive (for the enjoyment of having the power to do things when desired); (6) the enterprise motive (building capital in order to carry out business projects); (7) the bequest motive (desiring to bequeath family with a fortune); and (8) the avarice motive (for the enjoyment of being miserly and not spending). Browning and Lusardi (1996) added a ninth motive to Keynes's framework. They posited that people have down payment motives

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(accumulating savings to have a deposit for buying durables (i.e. cars and houses)).

Considering the expensive nature of the “Australian dream”, it is plausible to believe that the down payment motive requires enduring and consistent goal striving.

Motivation and Aspiration in Self-Determination Theory

Motivation.

Ryan and Deci’s (1985) self-determination theory ([SDT] cited in Ryan & Deci, 2000b) is a framework that was developed for psychologists to better understand people’s motivation for pursuing goals. Motivation in SDT is defined as being energised and moved to do something; and if someone feels no impetus to do something, he/she is characterised as being unmotivated (Ryan & Deci, 2000a). Motivation for doing something imbibes notions of vitality and vigour in people which can vary in magnitude (Ryan & Deci, 2000b). It has often been regarded in terms of quantity (from being amotivated to highly motivated) rather than in terms of type (Ryan & Deci, 2000b). Ryan and Deci (2000b) posited that types of motivation exist on a continuum ranging from controlled (being compelled to act because of some exogenous coercion) to autonomous (acting out of innate will or desire).

At the most controlled point of the continuum, *external* reasons why someone may be motivated to do something is because of some outside pressure (from authority/peers/society), and he/she wants to avoid some adverse consequence (punishment), or to achieve a reward (Ryan & Connell, 1989). Ryan and Connell (1989) studied the reasons behind children’s motivation to do homework. An *external* reason for doing homework is so that the teacher will not yell. According to Ryan and Connell, less controlled reasons why someone may be motivated to do something is framed in terms of internal pressure germane to one’s self-esteem. These are called *introjected* reasons and are characterised where someone does something to avoid feeling guilty, anxious, ashamed, or concerned about self-

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and other-approval. In Ryan and Connell's homework study on children, an *introjected* reason for doing homework is to avoid feeling ashamed for not having done the homework. Even less controlled reasons for doing something than *introjected* ones are *identified* reasons. *Identified* reason why someone may be motivated to do something are such that the activity is in accordance with his/her own values or goals. *Identified* reasons are considered to be autonomous, however they are somewhat controlled because actions associated with them are not necessarily enjoyable. In Ryan and Connell's homework study on children, an *identified* reason for doing homework is because of a desire to learn. Finally, at the most autonomous point of the continuum are *intrinsic* reasons. *Intrinsic* reason why someone may be motivated to do something is simply because the activity is inherently enjoyable. An *intrinsic* reason in Ryan and Connell's homework study on children is that doing homework is fun.

Past research indicates that autonomous (*identified* and *intrinsic*) reasons for motivation are more likely to predict sustained effort in goal striving and goal attainment than controlled (*external* and *introjected*) reasons (Sheldon, Prentice, Halusic, & Schüler, 2015). In Sheldon and Elliot's (1998) study, undergraduate psychology students ($N = 128$) generated personal goals that they continually strive for on a daily basis (e.g. striving to regularly seek out new/novel experiences) and selected the most applicable reason (from controlled to autonomous) that motivated their self-generated goals. They then rated how much they pursued their goals and indicated whether they had, or had not attained their goals in the last month. Using Pearson's correlation, Sheldon and Elliot found a positive significant relationship between autonomous motivation for the self-generated goals and goal attainment ($r = .20, p < .001$), but not for controlled motivation ($r = -.05, ns$). In an extension of the initial study, Sheldon and Elliot found similar findings among undergraduate psychology students ($N = 141$) for academic goals. Autonomous motivation for pursuing academic success was positively and significantly associated with end-of-semester achievement ($r =$

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.16, $p < .001$), but controlled motivation was not ($r = .00$). Both autonomous and controlled motivation were positively and significantly associated with intended effort ($r = .22$, $p < .001$, and $r = .15$, $p < .001$ respectively), however only autonomous motivation was positively and significantly associated with mid-semester effort ($r = .19$, $p < .001$).

Pelletier, Dion, Slovinec-D'Angelo, and Reid (2004) investigated the relationship between motivation (autonomous or controlled) and (un)healthy eating behaviours among female university students ($N = 339$). There was a positive significant relationship between autonomous motivation and regulated eating behaviours in order to improve health according to medical/dietary guidelines ($r = .46$, $p < .05$); and a negative significant relationship between controlled motivation and regulated eating behaviours ($r = -.25$, $p < .05$). Digressing very briefly, it was interesting to see that controlled motivation was positively and significantly associated with bulimic symptomatology ($r = .63$, $p < .05$), whereas autonomous motivation was not. In Sheldon and Elliot's (1998) study, the relationship between controlled motivation and students' personal or academic goals was negligible. Koestner, Otis, Powers, Pelletier, and Gagnon (2008) replicated the findings by Sheldon and Elliot. Across three studies on students from both high school and university settings ($N = 559$), they found a mean correlation of .21 ($p < .05$) between autonomous motivation and goal progress. Correlations ranged from .19 to .25. The mean correlation found between controlled motivation and goal progress was -.01 (ns) and ranged from -.04 to .01.

The relationship between autonomous motivation and goal progress and/or achievement appears to be robust, but the discrepant findings among Sheldon and Elliot's (1998), Pelletier et al.'s (2004), and Koestner et al.'s (2008) studies for controlled motivation with goal progress and/or achievement is curious. Koestner et al. (2008) posited that controlled motivation does not necessarily have no relationship with goal strivings, but rather

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it may be that controlled motivation affected participants' cognitions and affect in their studies. To date, there are no known studies exploring the relationship between types of motivation as defined by SDT and saving behaviour to achieve a financial goal. If this relationship has been investigated, there is a chance that findings were not published if they were not significant. As described by Simmons, Nelson, and Simonsohn (2011), it is unusual for prestigious journals to publish null findings.

Aspiration.

Logically, the financial goal of accumulating savings to have a deposit that is considered worthy by financial institutions for issuing a home loan means being financially successful – a necessary requirement implicitly expressed by financial institutions (and likely to be explicitly stipulated in situations of financial failure when a financial institution engages in repossession of property and/or contents). Aspiring to achieve any given goal can be classified as extrinsic or intrinsic based on its content (Schmuck, Kasser, & Ryan, 2000), in the same way that motivation in SDT is classified as extrinsic or intrinsic (Ryan & Deci, 2000b). Because most Australians aspire to own their homes (Baum & Wulff, 2003), it was worthwhile to investigate the relationship between extrinsic aspiration and saving behaviour

In Kasser and Ryan's (1996) Aspiration Index, seven categories house the various types of aspirations (i.e. ambitions or goals) people may wish to achieve in life. Starting with the intrinsic types of aspirations, they are: (1) *affiliation* (i.e. relatedness; germane to having satisfying relationship with family and friends); (2) *community feeling* (i.e. helpfulness; germane to improving the world through activism or generativity); (3) *physical fitness* (i.e. health; germane to feeling healthy and being free from illness); and (4) *self-acceptance* (i.e. growth; germane to achieving psychological growth, autonomy, and self-regard). The extrinsic types of aspirations are: (5) *attractive appearance* (i.e. image; germane to looking

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attractive in terms of body, clothing, and fashion); (6) *financial success* (i.e. money; germane to being wealthy and materially successful); and (7) *social recognition* (i.e. fame; germane to being famous, well-known, and admired). It must be noted that the types of aspirations Kasser and Ryan identify are not necessarily exhaustive because aspirations that are academic, artistic (performing arts, visual arts, and martial arts) or recreational are not included in the Aspiration Index. It is plausible to believe that they can be indirectly related to goals such as *community feeling* (intrinsic) or *social recognition* (extrinsic). For example, someone might pursue academic excellence in a medical degree in order to be in a position to improve the lives of sick and injured people. Alternatively, excellence in a medical degree might be pursued in order to be valued by others, or recognised as someone important or with high status.

Previous research has consistently shown that realising intrinsic aspirations is associated with well-being and life satisfaction, whereas realising extrinsic aspirations, although fleetingly satisfying, is negatively associated with well-being and life satisfaction because of more effortful behaviours required to realise such aspirations (Kasser & Ryan, 1993, 1996; Niemiec, Ryan, & Deci, 2009; Nishimura & Suzuki, 2016; Richins, 1994, Rijavec, Brdar, & Miljković, 2011; Ryan, Chirkov, Little, Sheldon, Timoshina, & Deci, 1999; Schmuck et al., 2000; Williams, Cox, Hedberg, & Deci, 2000). Investigating well-being and satisfaction was beyond the scope of this study, but for a regularly researched variable, there is a considerable paucity of studies that show findings on the relationship between extrinsic and/or intrinsic aspiration and attainment of respective aspirations. Niemiec et al., 2009 found among college graduates ($N = 147$) that correlations among the seven extrinsic and intrinsic aspirations with attainment of the respective aspirations ranged from .66 to .79 ($p < .01$). Moving on from motivation and aspiration in SDT, at face value, having

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financial literacy would be helpful for achieving *financial success* (since achieving that can enable home buying).

Financial Literacy

The standard meaning of literacy used by the (United States [US]) National Adult Literacy Survey is “using printed and written information to function in society to achieve one’s goals, and to develop one’s knowledge and potential” (Huston, 2010, p. 306). Broadly, literacy means understanding words, symbols, and arithmetic operations; and using one’s ability to read, write, and calculate information in written, tabular/graphical, and quantitative formats (Huston, 2010). Gathergood (2012) defines financial literacy as consumer understanding of financial concepts, and the ability to interpret financial data correctly. Financial behaviours, which include saving, spending, and borrowing, refers to human activities relevant to money management (Xiao, Chen, & Chen, 2014). Financial behaviours are better negotiated by individuals who are financially literate (Fernandes, Lynch, & Netemeyer, 2014). Financial behaviours conducive to good money management include saving, planning for retirement, having an absence of debt, investing in and owning stock shares, having adequate cash flow, selecting financial products with manageable default options (for situations involving financial inertia), and avoiding unnecessary fees (Fernandes et al., 2014).

Financial literacy surveys have shown that numerous populations in developed nations, including Australia, have poor financial literacy, and are ill informed about financial products and practices (Agnew, Bateman, & Thorp, 2013; Gathergood, 2012; Lusardi & Mitchell, 2007, 2011; Stolper & Walter, 2017). Interventions for increasing financial literacy among consumers have yielded mixed results (Gale, Harris, & Levine, 2012). Investigating ways to ameliorate financial literacy deficits was beyond the scope of this study. However,

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people do need to improve their financial literacy because the responsibility of saving and investing for the future rests much more on individuals today than on governments and/or employers compared to previous generations; and financial markets offer more complex products and schemes compared to ones offered in the past (LaChance, 2014; Lusardi & Tufano, 2015). In Stolper and Walter's (2017) extensive review of financial literacy articles, they noted that people who have higher financial literacy tend to plan ahead – a necessary behaviour for saving money as previously mentioned, according to van Veldhoven and Groenland (1993).

According to the Australian Securities Investment Commission ([ASIC] 2017), aspiring homeowners could bolster their savings if they plan to purchase a home in a few years (from the time they make a decision to buy) by investing money in stock shares or managed funds because they yield more interest than savings accounts over a medium to long-term period. The ASIC claims that larger deposits gives people smaller loan to value ratios (calculated by dividing the home loan amount by the purchase price of a property, then subtracting 1) so they can avoid paying lenders mortgage insurance (see CBA, 2017) and potentially get lower interest rates for repayments compared to borrowers who have larger loan to value ratio home loans (greater than .80). In the saving stage, navigating the stock market and managed funds schemes seems to be easier said than done in light of the widespread financial literacy deficits reported by Agnew et al. (2013), Gathergood (2012), Lusardi and Mitchell, (2007; 2011), and Stolper and Walter (2017). It cannot be assumed that having poor financial literacy will necessarily stop someone from conserving a portion of his/her income (i.e. saving money for a deposit, or for anything else), but according to Lusardi and Mitchell (2007), being unfamiliar with even the most basic economic concepts hinders saving and investment decisions. Behrman, Mitchell, Soo, and Bravo (2012) reported that financial literacy was positively and significantly associated with accumulated wealth

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(no statistical figures available). Using US State-by-State survey data ($N = 26,900$), Xiao et al., (2014) found a positive and significant relationship between financial knowledge and positive financial behaviours, that is, behaviours conducive to good money management ($r = .35, p = .01$).

Although saving behaviour is the focus of this study, debt and/or spending behaviour can be considered a proxy for nil savings and/or reverse saving behaviour. Using US household survey data ($N = 28,146$), Allgood and Walstad's (2016) study using probit regression analyses showed that participants with a high level of financial literacy were 16 percentage points more likely to pay their credit card balance in full at the end of each month compared to participants with low financial literacy. They were also 13 percentage points less likely to have an outstanding credit card balance, 15 percentage points less likely to only make a minimum repayment, 11 percentage points less likely to be charged with a late payment fee, and 6 percentage points less likely to be charged with a fee for exceeding their credit limit compared to the low financial literacy participants. Lusardi and Tufano's (2015) research showed that poor financial literacy, particularly poor debt literacy such as being unable to comprehend and negotiate compounding interest charges, is associated with higher credit card fees and charges. Specifically, 28.7% of their sample which was representative of the US population ($N = 1,000$), bear approximately 42% of the collective cardholder fees/charges worth \$26.8 billion USD. Huston's (2012) research indicates that people who are financially literate are twice as likely to have lower borrowing costs for credit cards and mortgages compared to people who are financially illiterate. She explains that the knowledge financially literate people possess makes them better equipped to manage credit, which in turn gives them good credit scores making them attractive to lenders who reward them with competitive products.

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Based on the above findings and information, financial literacy would benefit virtually everyone. More importantly for aspiring homeowners, being debt literate (particularly with credit cards because less money squandered on credit card fees and charges means more money can potentially be saved) and having knowledge on how to maximise savings as suggested by the ASIC (2017) should enable better saving behaviour efforts. Also, in addition to showing prospective mortgage lenders evidence of savings (usually achieved through saving behaviour), aspiring homeowners need to look after their credit rating (e.g. by making timely repayments debts or avoiding debts). Lastly, financial literacy and saving behaviour (or savings) for something intangible such as retirement or for an emergency have been investigated by other researchers (see Fernandes et al., 2014; Lusardi & Mitchel, 2007), but there are no known studies to date investigating the relationship in the context of saving to ultimately spend for a tangible durable.

Materialism

Possession and acquisition of consumer goods often involves spending, which is in direct opposition to saving (Richins & Rudmin, 1994). Materialism was therefore a relevant variable to include in this study. Materialism is a term used to describe one's propensity to value and desire money and possessions which convey high status (Belk, 1985; Dittmar, Bond, Hurst, & Kasser, 2014). People high in materialism attribute high levels of importance to acquiring and consuming material goods (Richins & Dawson, 1992). They tend to view their possessions as indicators of their success (Richins & Rudin, 1994); and they achieve a degree of happiness or satisfaction from possessing and acquiring goods (Schroeder & Dugal, 1995). Conversely, impediments to acquiring goods can be a source of dissatisfaction (Belk, 1985).

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Although homes are inherently material in nature (and likely to be appealing to own, particularly for people high in materialism), a paradox emerges because the time needed to save for a deposit in order to be granted a home loan is incongruent with spending behaviours that people high in materialism tend to exhibit (see Watson, 2003). As previously mentioned, saving entails postponing immediate benefits/rewards to the future (van Veldhoven & Groenland 1993). To be clear, shelter is a fundamental human need (Reserve Bank of Australia, 2015), therefore it is not materialistic for people to want to own their home so they can have a sense of security, and avoid inconveniences associated with short-term tenancy agreements prevalent in Australia (see Colic-Peisker & Johnson, 2010). However, people high in materialism who do own their homes see their homes as another status item which can then be furnished with high status or brand name items (see Tatzel, 2002). Some empirical evidence supporting Tatzel can be found in Watson's (2003) study (sample drawn from a Pennsylvanian community). An F test showed that participants high in materialism ($n = 90$) had significantly more positive attitudes for borrowing money to buy home furnishings ($M = 3.29$, $SD = 1.05$) compared to participants low in materialism ($n = 81$, $M = 2.90$, $SD = 1.09$), $F = 6.48$, $p = .01$. The findings were similar between participants high in materialism and low in materialism for buying items such as swimming pools, expensive sporting equipment, furs, jewellery, and art or other collectibles.

Belk (1985) relates materialism to personality and self-concept issues. Digressing briefly from the present issue, Schroeder and Dugal's (1995) study showed that materialism was positively and significantly associated with social anxiety ($r = .34$, $p < .01$) and public self-consciousness, that is, when someone is concerned with what others think of him/her ($r = .42$, $p < .01$). Returning to financial matters, Brown, Kasser, Ryan, and Konow' (2015) study using participants obtained from community settings in the state of New York ($N = 74$) showed that materialism was positively and significantly associated with owning more

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possessions – a proxy for past spending behaviours ($r = 28, p < .05$), and spending more money for necessary (vital for living) purchases ($r = 34, p < .05$). Interestingly, there was no relationship between materialism and discretionary purchases, however there was an almost-significant relationship between materialism and frequency of discretionary purchases ($r = .27, p < .10$). All of Brown et al.'s findings were independent of income level.

In Christopher, Marek, and Carroll's (2004) study, materialism among university students ($N = 204$) was negatively and significantly associated with conserving approaches to money ($r = -.31, p < .01$), and positively and significantly associated with inadequacy of money, that is, having feelings of never having enough money ($r = .26, p < .01$). Watson's (2003) study showed that participants high in materialism ($n = 45$) were significantly more likely to have an outstanding credit card balance of \$200 or more in the previous month compared to participants low in materialism ($n = 33$), $\chi^2 = 5.5, df = 1, p = .02$. As previously mentioned, debt (potentially resulting from spending behaviour) can be regarded as a form of reverse savings. Forty-one participants high in materialism in Watson's (2003) study paid Visa card charges in the previous month compared with only 25 participants low in materialism ($\chi^2 = 5.9, df = 1, p = .02$); and 28 participants high in materialism paid Mastercard charges in the previous month compared with only 12 participants low in materialism ($\chi^2 = 8.0, df = 1, p = .01$). Interestingly, differences in outstanding credit card balances among the participants who were high in materialism or low in materialism were not statistically significant (\$3456 versus \$3259 respectively). The negative relationship between materialism and saving behaviour (or positive relationship between materialism and debt, or spending behaviour) is consistent in the literature, but could the desire for a home (one of the largest material items someone could buy) show a different relationship? No known studies to date have explored materialism and saving behaviour in the context of saving for a large material (and desirable) item.

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Hypotheses

Based on the findings in previous research on the psychological variables presented above, the aim of this study was to test the following hypotheses. I hypothesised that: (1A) *external* and *introjected* (controlled) motivation for saving to accumulate a house deposit is negatively associated with saving behaviour; and that (1B) *identified* and *intrinsic* (autonomous) motivation for saving to accumulate a house deposit is positively associated with saving behaviour. I also hypothesised that (2) extrinsic life aspiration is positively associated with saving behaviour, that (3) financial literacy is positively associated with saving behaviour, and that (4) materialism is negatively associated with saving behaviour.

Method

Research Design

The design of this study was correlational. Multiple regression and Pearson's correlation were the statistical techniques used for the analyses. The outcome variable was saving behaviour (with the intention of spending accumulated savings on house deposit), and the predictor variables were extrinsic (controlled) and intrinsic (autonomous) motivation, extrinsic life aspiration (but not intrinsic life aspiration), financial literacy, and materialism. Except for motivation, which was categorical (*external*, *introjected*, *identified*, and *intrinsic reasons*), all the variables were measured continuously. Depending on the nature of the demographic variables (e.g. sex and income), they were measured either categorically or ordinally.

Using regression guidelines by Field (2013), the minimum sample size needed for this study to have adequate statistical power was 162 participants (if the alpha level was .05, and power was .80 (so that there was only a 20% chance of failing to detect an effect that exists in

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the population). The study had 14 predictors altogether: Five basic demographic predictors (e.g. sex), five other demographic predictors (e.g. aspiring to own a home, or not), and the study's four abovementioned predictors of interest. To test the R^2 (or overall fit) of the regression model, Green (1991) recommends a minimum sample size of $50 + 8$ participants per predictor. Therefore, with 14 predictors, the minimum sample size required was 162. To test predictors individually, the recommended minimum sample size is $104 +$ the number of predictors (i.e. $108 + 14 = 118$ participants). Because both the overall fit of the regression model and testing of individual predictors were of interest, Field (2013) recommends picking the largest value calculated for the required minimum sample size.

Participants

A total of 271 participants living in Australia were recruited through Amazon's Mechanical Turk, using a location-by-country filter (male $n = 55$, female $n = 41$), and through Edith Cowan University's undergraduate psychology participant pool (male $n = 31$, female $n = 144$). Mechanical Turk (MTurk) participants were remunerated with \$2.50 AUD, and participants from Edith Cowan University's undergraduate psychology participant pool (ECU-UPPP) were remunerated with course credit. Data from participants over 40-years of age, or with incomplete survey responses, or who indicated that they owned their home outright (no outstanding mortgage) were excluded from the analyses. In accordance with Katona's (1975) economic-psychological theory of saving, as cited in Wärneryd (1989), participants who indicated that they own their home with an outstanding mortgage in place were not excluded because paying off mortgage debt is consistent with contractual savings. Also, ownership of a home can be debatable if there is an outstanding mortgage. According to a Lending Manager at St George Bank (M. Thompson, personal communication, May 2010), St George Bank has legal grounds to sell a customer's home if the customer (the mortgagee) is unable to continue paying mortgage instalments. Considering this, it was

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assumed that financial institutions actually own mortgaged houses until the outstanding debt is dissolved. The final sample size was 230 (MTurk $n = 73$, ECU-UPPP $n = 157$).

Frequencies of the characteristics in the two samples (separately and combined) are provided in Table 2.

Materials

Saving Behaviour.

I developed an eight-item scale to measure saving behaviour. Behaviours or activities conducive to saving money were incorporated into the items and were phrased in the context of ultimately using saved money for a house deposit. The new scale was developed because there were no known existing scales. It was modelled on an eight-item scale written by Honours commerce students (Thung et al., 2012) at the Universiti Tunku Abdul Rahman in Malaysia. Their scale however, measured saving behaviour for its own sake, without a specific goal. Their scale had good reliability ($\alpha = .82$). For copyright reasons, concurrent validity was unobtainable. Reliability with Cronbach's alpha for this study's saving behaviour scale was acceptable ($\alpha = .77$). Achieving content validity was attempted by developing scale items that are representative of behaviours (e.g. modifying lifestyle expenses and keeping a savings timeline) that facilitate saving for a house deposit. Care was taken to ensure that items did not tap attitudes (affect and cognition) towards saving behaviour. The correlation between saving behaviour scale scores was positive and significant with currently saving money (yes or no) for a house deposit ($r = .36, p < .001$).

Participants endorsed saving behaviour items on 5-point scales (1 = *strongly disagree* and 5 = *strongly agree*). Six items were positively coded, for example, "I regularly save money so that I will have a sufficient deposit when applying for a home loan", and two items were reverse coded, for example, "I do not save as much as I would like to because of

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unnecessary purchases”. Possible scores in the saving behaviour scale range from eight to 40.

Higher ratings on the positively coded items, and lower ratings on the reverse coded items indicated more active money saving. All items are provided in Appendix D.

Extrinsic (Controlled) and Intrinsic (Autonomous) Motivation.

To determine whether participants’ motivation for goal striving (i.e. saving money to buy their home) was extrinsic (controlled) or intrinsic (autonomous), Sheldon and Elliot’s (1998) single-item questionnaire, Four Reasons for Goals (4RG) was used. The 4RG captures individuals’ reasons motivating goal striving on a continuum (from *external* to *intrinsic*). So that participants could indicate what type of reason best captured their motivation for saving to buy a home, they were asked “Which best describes your motivation for wanting to own your home?” The adapted wording of the 4RG is provided in Table 1. The original wording of the 4RG by Sheldon and Elliot is provided in Appendix E with permission from Copyright Clearance Centre (CCC).

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Table 1
Four Reasons for Goals

Reason	Type	Wording
External	Controlled	Striving because somebody else wants me to or thinks I ought to, or because I will get something from somebody if I do. I probably would not strive for owning my home if I did not get some kind of approval for it.
Introjected	Controlled	Striving because I would feel ashamed, guilty, or anxious if I didn't. Rather than striving just because someone else thinks I ought to, I feel that I ought to strive for owning my home.
Identified	Autonomous	Striving because I really believe that it is an important goal to have. Although owning a home may once have been taught to me by others, I now endorse it freely and value it wholeheartedly.
Intrinsic	Autonomous	Striving because of the fun and enjoyment which the goal provides me. While there may be many good reasons for owning my home, the primary reason' is simply my interest in the experience itself.

Note: Sample frequencies of the four reasons are provided in Table 2.

Extrinsic and Intrinsic Aspiration.

In Kasser and Ryan's (1996) Aspiration Index, only four of the seven categories were used to measure participants' extrinsic and intrinsic life aspirations: *Financial success* and *social recognition* from the extrinsic categories, and *affiliation* and *community feeling* from the intrinsic categories. Because the Aspiration Index is flexible and does not require responses for all categories to capture someone's aspiration system (Kasser, 2015), *self-acceptance*, *physical fitness* and *attractive appearance* were dispensed with for brevity. Eliminating three categories was undesirable but it reduced the 32-item Aspiration Index to 20 items so that the likelihood of participants getting bored and withdrawing their participation was minimised (there were 49 other items to respond for completing the study survey).

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Kasser and Ryan (1996) obtained acceptable to good reliability in the seven categories in two studies ($\alpha = .76$, $N = 100$ in Study 1; $\alpha = .82$, $N = 192$ in Study 2). They established construct validity within SDT where extrinsically orientated life aspirations were negatively associated with positive affect and vitality, and intrinsically orientated life aspirations were positively associated with positive affect and vitality. Vitality in Kasser and Ryan's research means mental and physical feelings of aliveness and vigour. In this study, reliability for items in the two retained extrinsic categories combined was good ($\alpha = .88$). Reliability for items in the two retained intrinsic categories combined was also good ($\alpha = .86$).

Participants endorsed extrinsic and intrinsic life aspiration items on 5-point scales (1 = *strongly disagree* and 5 = *strongly agree*). There were five items for each of the four categories. All items in the Aspiration Index were positively coded, for example, "You will have a job that pays well" (a *financial success* item (extrinsic)); and "You will help others improve their lives" (a *community feeling* item (intrinsic)). The possible scores for extrinsic aspiration and intrinsic aspiration in this study's adapted Aspiration Index each range from ten to 50. Scores on extrinsic and intrinsic items indicated the extent of participants' extrinsic and intrinsic life aspirations respectively. All items of the full Aspiration Index (seven categories) are provided in Appendix F (the scale is not copyright protected and freely available on Kasser's personal website).

Financial Literacy.

Fernandes et al.'s (2014) 13-item financial literacy scale (FLS) was used to measure participants' knowledge and understanding of financial matters. Fernandes et al. reported good reliability ($\alpha = .84$). In this study, reliability was acceptable ($\alpha = .77$). Participants answered items using a multiple-choice format (four to five possible answers per item), for example, "When an investor spreads his money among different assets, does the risk of losing

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money: (a) Increase, (b) Decrease*, (c) Stay the same, (d) Don't know, (e) Refuse to answer".

Correct answers attracted one point, and incorrect answers attracted zero points. Possible scores in the FLS range from zero to 13. More correct answers indicated higher financial literacy. All items are provided in Appendix G with permission from CCC.

Materialism.

Richin and Dawson's (1992) 18-item materialism scale (MS) was used to measure participants' level of materialism. They reported good reliability ($\alpha = .88$). They obtained construct validity of the MS using a spending intentions survey where respondents high in materialism ($n = 91$) reported spending \$3445 on things they wanted or needed compared to respondents low in materialism ($n = 85$) who reported spending only \$1106 on things they wanted or needed ($t = 5.38, p < .001$). The respondents high in materialism reported lower spending intentions (\$733) compared to respondents low in materialism (\$1782) for donating money to charity or church organisations ($t = -3.79, p < .001$). In this study, reliability for the MS was good ($\alpha = .87$).

Participants endorsed materialism items on 5-point scales (1 = *strongly disagree* and 5 = *strongly agree*). Ten items were positively coded, for example, "Buying things gives me a lot of pleasure", and eight items were reverse coded, for example, "I usually buy only the things I need". Possible scores in the MS range from 18 to 90. Higher ratings on the positively coded items, and lower ratings on the reverse coded items indicated higher materialism. All items are provided in Appendix H with permission from CCC.

Procedure

Survey data from MTurk participants was collected online using Qualtrics between 1st May, 2017 and 1st August, 2017. Survey data from ECU-UPPP participants was also collected online using Qualtrics between 19th May, 2017 and 20th June, 2017. A Qualtrics

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survey link with a brief description about what participants were required to do in order to obtain remuneration (payment or course credit) for their time was listed on the MTurk and ECU-UPPP platforms. The information visible to prospective participants who were browsing the MTurk or ECU-UPPP websites is provided in Appendix A. The link took prospective participants to a page displaying information about the study, its purpose, and consent form (with reference to anonymity and voluntary participation). The study information letter presented to prospective participant is provided in Appendix B. Using a point-and-click method, participants indicated whether they agreed or disagreed to participate and provided their responses to survey items on subsequent pages. Disagreeing to participate automatically exited responders from the survey (alternatively they were able to close their web browser). A full version of the survey is provided in Appendix C. The demographic information was collected from participants prior to presenting the items from the various measures. To minimise having incomplete data, the survey logic feature in Qualtrics was utilised so that participants could not proceed to another section of the survey until all items on the present section were answered. Randomisation of items within the measures was utilised so that participants were not presented with identical surveys.

Analysis

Data from the MTurk and ECU-UPPP samples were transposed from Qualtrics directly into SPSS 24.0 data sets. Both data sets were inspected separately (because of suspected differences in the characteristics of the samples), then in combination with each other. To obtain findings from all three data sets reverse items from the MS and saving behaviour scale were recoded, categorical variables were dummy coded; descriptive data (including univariate and bivariate graphs) and correlation matrices were produced; multiple linear regression (a full additive model with basic demographic variables (such as sex and age), other related demographic variables (such as holding aspirations to own a home), and

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the study's main variables of interest) was run with requests for residual plots and tests of collinearity (tolerance and variance inflation factor [VIF]). The residual plots and Shapiro-Wilk tests were used to check for assumption violations. Independent samples *t* tests were run to check for differences in scores between the MTurk and ECU-UPPP samples.

In order to know how much variance in saving behaviour was explained by the study's predictors of interest, two-step hierarchical regression was done for each predictor. In the same way hierarchical regression is done in economics studies, the first step includes the demographic variables of sex, age, education, paid employment status (called work in all the provided tables), and income; and the second step includes the aforementioned demographic variables with one predictor of interest added to the model. The last two-step hierarchical regression was run with all predictors of interest in the second step.

Amendment to the Proposed Use of the Aspiration Index.

Extrinsic aspiration scores (but not intrinsic aspiration scores) were required for hypothesis testing. I originally proposed to only use data from participants who were highly extrinsically orientated in their life aspirations, but ultimately I needed to use the extrinsic aspiration scores from all 230 participants for reasons presented shortly. Intrinsic aspiration items were included in the survey for the purpose of discriminating participants with higher extrinsic aspirations from participants with higher intrinsic aspirations. To discriminate between more extrinsically orientated participants from the more intrinsically orientated participants, the extrinsically oriented participants had to either have a score of 40 or more from the ten extrinsic aspiration items (five *financial success* items, and five *social recognition* items), or have higher scores for the extrinsic aspiration items compared with their scores for intrinsic aspiration items (*affiliation* and *community feeling*), as long as the extrinsic aspiration score was 35 or above (because the mean score of the extrinsic aspiration items with 230

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participants was 27.62 with a standard deviation of 6.98). In this study, only 18 out of the 230 participants obtained higher extrinsic aspiration scores compared with their intrinsic aspiration scores. People tend to obtain higher scores on intrinsic items compared with extrinsic items (Kasser & Ryan, 1996). Hypothesis 2 was not amended but the means of testing the hypothesis was.

Results

Assumption Testing and Full Additive Model Regression Analyses

Full additive model regression coefficients predicting saving behaviour, the variance in saving behaviour explained by the predictors (R^2), and the global F test result are provided in Table 3, Table 4, and Table 5 for the MTurk, ECU-UPPP, and combined samples respectively. There was no cause for concern with collinearity among the predictors. As suggested by Field (2013, p. 324), tolerance below .20 and VIF greater than 10 among predictors is considered to be a cause for concern.

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Table 2

Characteristics of the Two Study Samples Separately and Combined

Characteristic	<u>Mechanical Turk</u>		<u>ECU-UPPP</u>		<u>Combined</u>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Sex						
Male	43	58.9	28	17.8	71	30.9
Female	30	41.1	129	82.2	159	69.1
Age group (years)						
18 – 24	26	35.6	83	52.9	109	47.4
25 – 34	36	49.3	56	35.7	92	40.0
35 – 40	11	15.1	18	11.5	29	12.6
Education						
Year 10	4	5.5	1	0.6	5	2.2
Year 12	15	20.5	73	46.5	88	38.3
Trade/apprenticeship	4	5.5	0	0.0	4	1.7
TAFE/technical certificate or diploma	9	12.3	39	24.8	48	20.9
Undergraduate certificate or diploma	6	8.2	24	15.3	30	13.0
Bachelor degree	25	34.2	19	12.1	44	19.1
Master or Doctoral degree	10	13.7	1	0.6	11	4.8
Employment status (hours per week)						
Full time work (35+)	27	37.0	26	16.6	53	23.0
Part time work (25 – 34)	5	6.8	12	7.6	17	7.4
Part time work (15 – 24)	6	8.2	31	19.7	37	16.1
Casual work (no fixed hours ranging from 0 – 35)	12	16.4	43	27.4	55	23.9
Looking for work (unemployed)	13	17.8	8	5.1	21	9.1
Not looking for work (student, carer, homemaker)	10	13.7	37	23.6	47	20.4
Income						
Under \$20K	22	30.1	87	55.4	109	47.4
\$20K - \$29K	7	9.6	19	12.1	26	11.3
\$30K - \$39K	10	13.7	16	10.2	26	11.3
\$40K - \$49K	6	8.2	11	7.0	17	7.4
\$50K - \$59K	6	8.2	6	3.8	12	5.2

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Table 2
(continued)

Characteristic	<u>Mechanical Turk</u>		<u>ECU-UPPP</u>		<u>Combined</u>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Income (continued)						
\$60K - \$69K	7	9.6	7	4.5	14	6.1
\$70K - \$79K	3	4.1	2	1.3	5	2.2
\$80K - \$89K	5	6.8	2	1.3	7	3.0
\$90K - \$99K	1	1.4	2	1.3	3	1.3
Over \$100K	6	8.2	5	3.2	11	4.8
Aspire to own a home						
Yes	65	89.0	148	94.3	213	92.6
No	8	10.0	9	5.5	17	7.4
Currently saving for a home						
Yes	37	50.7	51	32.5	88	38.3
No	36	49.3	106	67.5	142	61.7
Current living arrangement						
Alone	10	13.7	12	7.6	22	9.6
With spouse/partner	19	26.0	42	26.8	61	26.5
With spouse/partner and dependants	12	16.4	22	14.0	34	14.8
With parents	18	24.7	60	38.2	78	33.9
With housemates	14	19.2	21	13.4	35	15.2
Current ownership status						
Own home with a mortgage	12	16.4	32	20.4	44	19.1
Rent home	44	60.3	52	33.1	96	41.7
Someone else owns/rents the home	17	23.3	73	46.5	90	39.1
Reason for saving to pursue a homeownership goal						
Extrinsic (controlled) motivation	5	6.8	4	2.5	9	3.9
Introjected (controlled) motivation	8	11.0	10	6.4	18	7.8
Identified (autonomous) motivation	43	58.9	102	65.0	145	63.0
Intrinsic (autonomous) motivation	17	23.3	41	26.1	58	25.2

Note: Mechanical Turk *n* = 73; ECU-UPPP *n* = 157; Total *N* = 230.

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Mechanical Turk Sample.

Upon inspection of the MTurk data, no violations to the normal distribution of residuals, linearity of residuals, and constancy of variance were detected. The Shapiro-Wilk test of normality was not significant ($p = .48$). Independence of residuals was obtained through the cross-sectional nature of the study. Also, once a qualified Australian MTurk user completed the survey, the survey became invisible to him/her because he/she no longer met the MTurk qualifications to participate.

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Table 3

Full Model Regression Coefficients Predicting Saving Behaviour – Mechanical Turk Sample

Variable	Unstandardised Coefficients		Standardised Coefficient	Collinearity Statistics	
	<i>B</i>	<i>SE</i>	β	Tolerance	VIF
(Constant)	23.46**	6.70			
Sex - Male	-2.95	1.38	-.295	.48	2.10
Age	0.64	1.00	-.089	.47	2.14
Education	0.16	0.29	.067	.61	1.65
Full time work (35 hours)	2.81	2.19	.275	.20	5.10
Part-time work (25 – 34 hours)	5.75*	2.63	.295	.49	2.03
Part-time work (15 – 24 hours)	3.83	2.54	.214	.45	2.23
Casual work (0 – 35 hours)	6.19**	2.14	.467	.35	2.87
Looking for work	3.28	1.85	.255	.43	2.30
Income	0.23	0.293	.137	.30	3.34
Aspire to own a home - Yes	2.57	2.03	.163	.55	1.83
Living alone	4.63*	2.26	.324	.36	2.76
Living with spouse/partner	2.82	2.23	.252	.23	4.39
Living with spouse/partner and dependants	2.45	2.34	.184	.29	3.44
Living with parents	2.31	2.23	.202	.24	4.25
Owner status – own home with mortgage	-0.22	2.51	-.016	.25	3.97
Owner status – renting home	0.51	2.05	.050	.22	4.61
Currently saving to buy a home - Yes	1.63	1.26	.166	.55	1.81
Extrinsic (controlled) motivation	-1.30	2.70	-.067	.47	2.14
Introjected (controlled) motivation	-3.67	2.06	-.233	.53	1.90
Identified (autonomous) motivation	-0.71	1.48	-.071	.41	2.43
Extrinsic aspiration	0.06	0.10	.085	.46	2.18
Intrinsic aspiration	-0.24	0.12	-.257	.58	1.73
Financial literacy	0.70**	0.19	.394	.76	1.32
Materialism	-0.11	0.06	-.233	.52	1.93
<i>R</i> ²	.567				
<i>F</i>	2.615**				

Note: $N = 73$. Age, education, and income are ordinal. Saving behaviour, extrinsic and intrinsic aspiration, financial literacy, and materialism are continuous. The reference category for sex is “Female”; the reference category for work is “Not looking for work”; the reference category for aspiring to own a home is “No”; the reference category for current living arrangement is “Living with housemates”; the reference category for owner status is “Someone else owns/rents home”; the reference category for currently saving to buy a home is “No”; and the reference category for motivation is “Intrinsic (autonomous) Motivation”.

* $p < .05$, ** $p < .01$, *** $p < .001$.

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Edith Cowan University Undergraduate Psychology Participant Pool.

Upon inspection of the ECU-UPPP data, no violations to the normal distribution of residuals, linearity of residuals, and constancy of variance were detected. The Shapiro-Wilk test of normality was not significant ($p = .55$). Again, independence of residuals was obtained through the cross-sectional nature of the study. No (student) participant completed the survey more than once.

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Table 4

Full Model Regression Coefficients Predicting Saving Behaviour – ECU-UPPP Sample

Variable	Unstandardised Coefficients		Standardised Coefficient	Collinearity Statistics	
	<i>B</i>	<i>SE</i>	β	Tolerance	VIF
(Constant)	37.28***	6.50			
Sex - Male	0.50	1.35	.031	.67	1.50
Age	-2.16*	0.92	-.239	.44	2.26
Education	-0.28	0.35	-.069	.62	1.61
Full time work (35 hours)	-4.80*	1.84	-.288	.38	2.61
Part-time work (25 – 34 hours)	-0.83	1.94	-.036	.70	1.50
Part-time work (15 – 24 hours)	-3.25*	1.41	-.208	.57	1.77
Casual work (0 – 35 hours)	-1.65	1.35	-.118	.49	2.02
Looking for work	-2.38	2.52	-.084	.58	1.73
Income	0.53	0.30	.194	.39	2.59
Aspire to own a home - Yes	-1.48	2.10	-.055	.75	1.34
Living alone	0.67	2.08	.029	.58	1.71
Living with spouse/partner	-1.05	1.63	-.075	.34	2.91
Living with spouse/partner and dependants	-1.51	1.81	-.084	.45	2.20
Living with parents	-0.57	1.70	-.044	.26	3.83
Owner status – own home with mortgage	3.92*	1.67	.255	.39	2.54
Owner status – renting home	-0.24	1.39	-.018	.42	2.41
Currently saving to buy a home - Yes	5.79***	0.988	.437	.83	1.20
Extrinsic (controlled) motivation	2.87	3.62	.073	.55	1.83
Introjected (controlled) motivation	3.55	2.03	.140	.73	1.38
Identified (autonomous) motivation	1.28	1.11	.098	.64	1.57
Extrinsic aspiration	0.10	0.09	.113	.51	1.98
Intrinsic aspiration	0.01	0.12	.009	.69	1.44
Financial literacy	0.04	0.20	.016	.64	1.57
Materialism	-.24***	0.06	-.399	.54	1.87
<i>R</i> ²	.389				
<i>F</i>	3.503***				

Note: $N = 157$. Age, education, and income are ordinal. Saving behaviour, extrinsic and intrinsic aspiration, financial literacy, and materialism are continuous. The reference category for sex is “Female”; the reference category for work is “Not looking for work”; the reference category for aspiring to own a home is “No”; the reference category for current living arrangement is “Living with housemates”; the reference category for owner status is “Someone else owns/rents home”; the reference category for currently saving to buy a home is “No”; and the reference category for motivation is “Intrinsic (autonomous) Motivation”.

* $p < .05$, ** $p < .01$, *** $p < .001$.

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Combined Samples.

Upon inspection of the MTurk and ECU-UPPP data combined, no violations to the normal distribution of residuals, linearity of residuals, and constancy of variance were detected. The Shapiro-Wilk test of normality was not significant ($p = .07$), but independent samples t test indicated that the MTurk and ECU-UPPP samples differed significantly on the measures for financial literacy and intrinsic aspirations (but not for materialism, extrinsic aspirations, and saving behaviour). On average, MTurk participants had higher scores on the financial literacy scale ($M = 7.86$, $SD = 2.80$) than the ECU-UPPP participants ($M = 4.64$, $SD = 2.64$), $t(228) = 8.45$, $p < .001$. On average, MTurk participants had lower scores for intrinsic aspirations ($M = 40.26$, $SD = 5.33$) than the ECU-UPPP participants ($M = 44.04$, $SD = 4.26$), $t(228) = -5.78$, $p < .001$. This may account for the close to non-normal distribution of residuals (at the .05 significance level) when the data are combined. Mean scores and standard deviations of predictors of interest for the MTurk, ECU-UPPP, and combined samples are provided in Table 7, Table 8, and Table 9 respectively.

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Table 5

Full Model Regression Coefficients Predicting Saving Behaviour – Combined Samples

Variable	Unstandardised Coefficients		Standardised Coefficient	Collinearity Statistics	
	<i>B</i>	<i>SE</i>	β	Tolerance	VIF
(Constant)	33.43***	4.78			
Sex - Male	-1.27	0.94	-.101	.62	1.62
Age	-1.14	0.68	-.135	.53	1.90
Education	-0.06	0.23	-.017	.69	1.44
Full time work (35 hours)	-3.33*	1.38	-.240	.35	2.90
Part-time work (25 – 34 hours)	-0.41	1.58	-.018	.70	1.43
Part-time work (15 – 24 hours)	-1.72	1.22	-.108	.58	1.73
Casual work (0 – 35 hours)	-0.50	1.10	-.037	.53	1.89
Looking for work	-0.94	1.48	.051	.64	1.57
Income	0.31	0.21	.138	.39	2.56
Aspire to own a home - Yes	1.15	1.46	.051	.80	1.25
Living alone	0.65	1.48	.033	.61	1.63
Living with spouse/partner	-0.77	1.24	-.058	.39	2.57
Living with spouse/partner and dependants	-0.27	1.14	-.017	.46	2.16
Living with parents	0.34	1.34	.027	.29	3.48
Owner status – own home with mortgage	3.37*	1.34	.227	.42	2.40
Owner status – renting home	0.24	1.10	.021	.39	2.54
Currently saving to buy a home - Yes	4.57***	0.77	.380	.84	1.20
Extrinsic (controlled) motivation	1.33	2.08	.044	.71	1.40
Introjected (controlled) motivation	0.89	1.51	.041	.71	1.42
Identified (autonomous) motivation	1.20	0.88	.099	.64	1.56
Extrinsic aspiration	0.13*	0.07	.154	.58	1.74
Intrinsic aspiration	-0.10	0.08	-.087	.71	1.42
Financial literacy	0.19	0.14	.098	.65	1.55
Materialism	-0.20***	0.04	-.362	.63	1.58
<i>R</i> ²	.300				
<i>F</i>	3.652***				

Note: $N = 230$. Age, education, and income are ordinal. Saving behaviour, extrinsic and intrinsic aspiration, financial literacy, and materialism are continuous. The reference category for sex is “Female”; the reference category for work is “Not looking for work”; the reference category for aspiring to own a home is “No”; the reference category for current living arrangement is “Living with housemates”; the reference category for owner status is “Someone else owns/rents home”; the reference category for currently saving to buy a home is “No”; and the reference category for motivation is “Intrinsic (autonomous) Motivation”.

* $p < .05$, ** $p < .01$, *** $p < .001$.

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Significance Testing and Hierarchical Regression Analyses

Hierarchical regression coefficients predicting saving behaviour are provided in Table 6. Because no assumption violations were detected in the MTurk and ECU-UPPP samples separately and combined, Table 6 is based on the combined samples. Model 1 (M1 - Demographic) includes demographic variables only. Model 2 (M2-Motivation) includes demographic variables and motivation. Model 3 (M3-Extrinsic Aspiration) includes demographic variables and extrinsic aspiration. Model 4 (M4-Financial Literacy) includes demographic variables and financial literacy. Model 5 (M5-Materialism) includes demographic variables and materialism. Model 6 (M6-All Predictors) includes demographic variables and all the predictors of interest together.

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Table 6

Hierarchical Regression Predicting Saving Behaviour

Variable	<u>M1 – Demographic</u>			<u>M2 – Motivation</u>			<u>M3 – Extrinsic Aspiration</u>			<u>M4 – Financial Literacy</u>			<u>M5 – Materialism</u>			<u>M6 – All Predictors</u>		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
(Constant)	23.93***	1.76	---	23.03***	1.93	---	24.22***	2.31	---	23.21***	1.78	---	32.24***	2.58		39.84**	2.68	---
Sex - Male	-0.07	0.88	-.006	-0.08	0.88	-.006	-0.03	0.91	-.002	-0.70	0.92	-.055	-0.07	0.85	-.006	-1.13	0.91	-.089
Age	-0.54	0.69	-.064	-0.58	0.70	-.069	-0.54	0.70	-.065	-0.58	0.69	-.069	-0.86	0.67	-.102	-0.95	0.66	-.113
Education	0.25	0.25	.076	0.28	0.25	.084	0.25	0.25	.076	0.17	0.25	.051	0.20	0.24	.060	0.13	0.24	.039
Full time work (35 hrs)	-1.75	1.50	-.127	-1.64	1.51	-.118	-1.74	1.50	-.125	-1.97	1.49	-.142	-1.90	1.44	-.137	-2.30	1.44	-.166
Part time work (25–34 hrs)	0.24	1.72	.011	0.35	1.72	.016	0.26	1.72	.012	0.52	1.71	.024	0.44	1.65	.020	0.53	1.64	.024
Part time work (15–24 hrs)	-1.63	1.35	-.103	-1.53	1.35	-.096	-1.60	1.35	-.096	-1.52	1.34	-.096	-1.30	1.30	-.082	-1.27	1.29	-.080
Casual work (0–35 hrs)	-0.63	1.20	-.046	-0.46	1.21	-.034	-0.60	1.21	-.044	-0.69	1.19	-.051	-0.26	1.15	-.019	-0.40	1.15	-.029
Looking for work	-0.81	1.55	-.040	-0.44	1.63	-.022	-0.82	1.55	-.040	-1.17	1.55	-.058	-0.68	1.49	-.034	-0.37	1.56	-.018
Income	0.41	0.22	.183	0.41	0.22	.182	0.41	0.22	.183	0.33	0.22	.148	0.49	0.21	.218	0.46*	0.22	.206
Extrinsic motivation				0.09	2.16	.003										-0.07	2.07	.002
Introjected motivation				-0.06	1.62	-.003										1.29	1.59	.059
Identified motivation				1.12	0.93	.092										1.28	0.91	.106
Extrinsic aspiration							0.01	0.06	.013							0.13*	0.06	.149
Financial literacy										0.31*	0.15	.162				0.26	0.14	.139
Materialism													-0.15***	0.04	-.278	-0.20***	0.04	-.363
<i>R</i> ²	.036			.044			0.36			.054			.110			.153		
<i>F</i>	0.904			0.830			0.814			1.262			2.694**			2.586**		
ΔR^2				.008			.000			.019*			.074***			.118***		
ΔF				0.623			0.038			4.360*			18.166***			4.961***		

Note: *N* = 230. Age, education, and income are ordinal. Saving behaviour, extrinsic aspiration, financial literacy, and materialism are continuous. The reference category for sex is “Female”; the reference category for work is “not looking for work”; the reference category for motivation is “Intrinsic”.

* $p < .05$, ** $p < .01$, *** $p < .001$.

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Correlational Findings for the Study's Four Hypotheses

Correlations matrices with the predictors of interest are in Table 7, Table 8, and Table 9 for the MTurk, ECU-UPPP, and combined samples respectively. Although intrinsic aspiration was not used for any hypotheses, it is included in the correlation matrices because extrinsic aspiration was not measured in isolation. With the exception of financial literacy, the predictors' relationships (or absence of relationships) with saving behaviour were the same in the MTurk and ECU-UPPP samples.

Motivation.

Pearson's correlation coefficient showed there was no relationship between *external* and *introjected* (controlled) motivation and saving behaviour. Pearson's correlation coefficient showed there was no relationship between *identified* and *intrinsic* (autonomous) motivation and saving behaviour. Consequently, hypotheses 1A and 1B respectively were not supported by the data.

Aspiration.

Pearson's correlation coefficient showed there was no relationship between extrinsic aspiration and saving behaviour. In case *social recognition* scores were concealing any relationship, I ran Pearson's correlation using only the five items for *financial success*. Pearson's correlation again showed a negligible relationship between *financial success* and saving behaviour ($r = -.02, ns$). Therefore, hypothesis 2 was not supported by the data. For the sake of completeness, Pearson's correlation coefficient showed there was no relationship between intrinsic aspiration (*affiliation* and *community feeling*) and saving behaviour. Also, an independent samples *t* test confirmed that the mean difference between the 18 extrinsically orientated overall participants ($M = 42.00, SD = 5.49$) and the 212 participants not

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extrinsically (or intrinsically) orientated overall ($M = 26.40$, $SD = 5.60$) was significant, $t(228) = 11.37$, $p < .001$. Lastly, regarding the hypothesis originally proposed, Pearson's correlation coefficient showed there was no relationship between being extrinsically orientated overall with life aspirations and saving behaviour ($r = -.02$, ns).

Financial Literacy.

A weak positive and significant relationship was found between financial literacy and saving behaviour when the MTurk and ECU-UPPP samples were combined ($r = .16$, $p = .02$). The relationship was stronger in the MTurk sample data was ($r = .34$, $p = .004$). There was no significant relationship between the two variables in the ECU-UPPP sample data. Hypothesis 3 was supported overall by the (combined) data.

Materialism.

A weak negative and significant relationship was found between materialism and saving behaviour when the MTurk and ECU-UPPP samples were combined ($r = -.28$, $p < .001$). A similar result was found in the MTurk sample data ($r = -.24$, $p = .04$). Again, a similar result was found in the ECU-UPPP sample data ($r = -.28$, $p < .001$). Hypothesis 4 was therefore supported by the data (separately and combined).

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Table 7
Correlations Between Study Variables – Mechanical Turk Sample

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Saving behaviour	25.14	4.95	.62							
2. Materialism	50.29	10.89	-.24*	.86						
3. Financial literacy	7.86	2.80	.34**	-.09	.73					
4. Extrinsic aspiration	27.74	7.29	-.05	.40***	-.08	.88				
5. Intrinsic aspiration	40.26	5.33	-.12	-.15	-.03	.19	.84			
6. External (controlled) motivation			-.07	-.18	-.03	-.07	-.10			
7. Introjected (controlled) motivation			-.08	.10	-.01	.19	.00	-.10		
8. Identified (autonomous) motivation			.06	.18	-.03	-.10	-.24*	-.33**	-.42***	
9. Intrinsic (autonomous) motivation			.03	-.18	.06	-.01	.33**	-.15	-.19	-.66***

Note: $N = 73$. Bold, italicised values on the diagonal show internal consistency (Cronbach's α) of the scales. Internal consistency is not shown for the dummy coded Four Reasons for Goals.

* $p < .05$. ** $p < .01$. *** $p < .001$.

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Table 8

Correlations Between Study Variables – Edith Cowan University Undergraduate Psychology Participant Pool Sample

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Saving behaviour	24.64	6.23	.82							
2. Materialism	51.79	10.50	-.28***	.88						
3. Financial literacy	4.64	2.64	.09	.04	.69					
4. Extrinsic aspiration	27.57	6.88	-.01	.51***	.15	.88				
5. Intrinsic aspiration	44.04	4.26	.06	.01	.10	.14	.84			
6. External (controlled) motivation	---	---	.00	.19*	.05	.21*	-.21**	---		
7. Introjected (controlled) motivation	---	---	-.02	.24**	.00	.05	-.03	-.04	---	
8. Identified (autonomous) motivation	---	---	.10	-.06	.27**	.08	.20*	-.22**	-.35***	---
9. Intrinsic (autonomous) motivation	---	---	-.10	-.14	-.31***	-.19*	-.12	-.10	-.16	.81***

Note: $N = 157$. Bold, italicised values on the diagonal show internal consistency (Cronbach's α) of the scales. Internal consistency is not shown for the dummy coded Four Reasons for Goals.

* $p < .05$. ** $p < .01$. *** $p < .001$.

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Table 9
Correlations Between Study Variables – Combined Samples

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Saving behaviour	24.80	5.85	.77							
2. Materialism	51.31	10.62	-.27***	.87						
3. Financial literacy	5.67	3.08	.16*	-.04	.77					
4. Extrinsic aspiration	27.62	6.98	-.02	.47***	.07	.88				
5. Intrinsic aspiration	42.84	4.94	-.01	-.03	-.13*	.14*	.86			
6. External (controlled) motivation	---	---	-.02	.02	.07	.09	-.18**	---		
7. Introjected (controlled) motivation	---	---	-.03	.18**	.03	.10	-.05	-.06	---	
8. Identified (autonomous) motivation	---	---	.09	.03	.12	.02	.05	-.26***	-.38***	---
9. Intrinsic (autonomous) motivation	---	---	-.07	-.15*	-.18**	-.13	.05	-.12	-.17*	-.76***

Note: $N = 230$. Bold, italicised values on the diagonal show internal consistency (Cronbach's α) of the scales. Internal consistency is not shown for the dummy coded Four Reasons for Goals.

* $p < .05$. ** $p < .01$. *** $p < .001$.

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Discussion

Contrary to expectation, the hypotheses that *external* and *introjected* (controlled) motivation for striving to save for a house deposit is negatively associated with saving behaviour; and that *identified* and *intrinsic* (autonomous) motivation for striving to save for a house deposit is positively associated with saving behaviour were not supported. The hypothesis that extrinsic aspiration (goals of *financial success* and *social recognition*) is positively associated with saving behaviour was also not supported as expected. As expected, and consistent with previous research, the hypothesis that financial literacy is positively associated with saving behaviour was supported. Also as expected, and consistent with previous research, the hypothesis that materialism is negatively associated with saving behaviour was supported.

The Australian Dream

Evidence of the palpable quality of the “Australian dream” can be found in Table 2, where 92.6% of participants indicated that they aspire to own a home. Although saving money to buy a home is contingent upon being employed and receiving income for most people, former Treasurer of Australia, Joe Hockey’s, suggestion for aspiring homeowners to “get a good job that pays good money” (ABC News Australia, 2015) seems unhelpful and crude in light of this study’s findings. Demographic variables, including employment and income only explained 3.6% of the variation in saving behaviour (see Table 6). Of course the price of housing is another issue (see the ABS, 2017b), but exploring this is beyond the scope of this study (and probably better left to economists).

Motivation

The negligible relationship between type of motivation (especially autonomous motivation) and saving behaviour was surprising. It is not immediately apparent how

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behaviours which can enable people to achieve academic goals or healthy eating goals demonstrated relationships with motivation, but saving behaviour which can enable people to achieve a financial goal did not (see Koestner et al., 2008; Pelletier et al. 2004; Sheldon & Elliott, 1998). Cited in Ryan and Connell (1989), Heider (1958) introduced the concept of perceived locus of causality. He proposed that a given effect or outcome from something can come from either *personal causation* (where someone's intention yields a desired result) or *impersonal causation* (where environmental factors yield a result, desirable or not, irrespective of someone's intentions). It might be that the types of motivation driving saving behaviour to achieve a financial goal in the context of Australia's expensive house prices and relatively stagnant incomes (Phillips, 2011) falls outside of people's perceived locus of causality. Put more plainly, regardless of the type of motivation people have to save money to buy a home, people may believe that what they can realistically self-determine cannot compete with economic forces in the environment.

Extrinsic Aspiration

Despite the extrinsic nature of aspiring to own a home, the financial facet of extrinsic aspirations in the Aspiration Index, and working towards (or pursuing) a financial goal by engaging in saving behaviour, aspiration as a psychological variable for predicting saving behaviour can be eliminated from any further investigation with confidence. A possible explanation for the negligible relationship between extrinsic aspiration and saving behaviour, is that saving behaviour in the context of this study is to some extent, a proxy measure for people's progress towards attaining a savings goal, rather than an attained savings goal (this study did not measure attained savings targets). As mentioned in the introduction, there are hardly any studies where the relationship between aspirations and progress towards, or attained goals have been reported. Niemiec et al.'s (2009) study obtained correlations between aspirations and attainment of aspirations (not progress towards attainment). The

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logical conclusion that can be drawn from the results is that measures of extrinsic aspirations are inappropriate for ambitions, or goals still in progress. It is not feasible, but it would be interesting after a considerable length of time to re-examine the scores obtained by participants for extrinsic aspiration with achievement of home buying (or achieved savings targets) to see if a positive relationship emerges.

Financial Literacy

Although the relationship between financial literacy and saving behaviour was in the hypothesised direction, the relationship was questionable because it was not significant among the ECU-UPPP participants. This non-significant finding can be attributed to their low mean score (see Table 8). If most participants have low financial literacy (or very few have medium to high financial literacy), then there would be an insufficient range of scores which are needed to detect a relationship with another variable (saving behaviour in this case). The low level of financial literacy among the ECU-UPPP participants is consistent with findings by other researchers (see Lusardi & Mitchell, 2007, 2011).

Because of the adequate range of scores in the FLS from the MTurk participants, the significant relationship between financial literacy and saving behaviour in the combined samples emerged. Had this study only used/obtained data from MTurk participants, the relationship would have appeared more clear-cut. They performed much better in the FLS (see Table 7) than the ECU-UPPP participants, but their average score would still be considered low by Lusardi and Mitchell (2007). Agnew et al. (2013), and Lusardi and Mitchell (2007) have found that people who are less financially knowledgeable are more likely to be single, either young or old, relatively uneducated, out of the work force, have relatively low income, and come from a minority background. Not all of these characteristics necessarily apply to the ECU-UPPP participants (e.g. minority background and being

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relatively uneducated), but it is worth considering this information when comparing them with the MTurk participants.

The ECU-UPPP participants tended to be younger than the MTurk participants. Most of the ECU-UPPP participants were in the 18 – 24-year age group whereas most of the MTurk participants were in the 25 – 34-year age group. Among the MTurk participants, a higher proportion reported having education beyond year 12 secondary school compared to the ECU-UPPP participants; but this would change once the ECU-UPPP participants complete their degrees. Low income among students is not surprising, but the MTurk participants in this study were thought to be more representative of 18 to 40-year old people living in Australia. Of the MTurk participants, 17.8% ($n = 13$) indicated that they were looking for work. The MTurk sample was very small, but this hints at another possible financial ill among people living in Australia. It was interesting to find a significant difference in financial literacy scores between males and females. Using combined data, an independent samples t test showed that on average, males performed better on the FLS ($M = 7.31$, $SD = 2.97$) than females ($M = 4.93$, $SD = 2.84$), $t(228) = 5.79$, $p < .001$). Investigating this finding further would mean digressing from the purpose of this study, but the finding is a cause for concern given that women tend to live longer than men (Chen & Volpe, 2002).

Based on findings from this study (and previous research), better saving behaviour can be expected if aspiring homeowners have better financial literacy. For example, bolstering savings by investing in stock shares or managed funds as suggested by the ASIC (2017) would require competent interpretation and application of financial data, and a sound understanding of financial concepts. In short, good financial literacy as described by Gathergood (2012). Also, as previously mentioned, while poor financial literacy may not preclude people from conserving a portion of their income, people with better financial literacy have more ability to maximise their saving behaviour efforts. According to Huston

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(2012), financially literate people make cumulative financial decisions that enable them to pay less for borrowing money. The implication here is that less money spent on fees or charges for borrowed money, usually from credit cards (see Allgood & Walstad, 2016 and Lusardi & Tufano, 2015), means more money can potentially go into savings. Although improving financial literacy would benefit everyone, aspiring homeowners with low financial literacy need not worry enormously. It is unlikely that increases in financial literacy will dramatically improve saving behaviour because financial literacy in conjunction with demographic variables in this study only explained 5.4% of the variation in saving behaviour (see Table 6).

Materialism

Before addressing financial literacy deficits, aspiring homeowners who tend to be higher in materialism might benefit from making it a priority to address their need to possess and acquire goods, which often involves spending money (see Richins & Rudmin, 1994). Materialism in conjunction with demographic variables in this study explained 11% of the variation in saving behaviour (see Table 6). The negative association between materialism and saving behaviour was weak, but it was a consistent finding across both samples. If 92.6% of participants aspire to own homes, the negative relationship between materialism and saving behaviour suggests that those who obtained higher scores on the MS might experience a degree of personal conflict since the time needed to save for a deposit is incongruent with spending habits that people high in materialism tend to have (see Watson, 2003). Although homes are material, it seems that they are not enough of an incentive for aspiring homeowners who are high in materialism to refrain from spending in order to acquire more possessions (see Richins & Rudmin, 1994). Conversely, the desire to acquire (buy) something small (in comparison to a home) in the short-term might be stronger than the desire to acquire a home in the long-term. In the future, researchers might consider

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investigating notions of delaying gratification posed by van Veldhoven and Groenland (1993) with materialism and saving behaviour (in general and for the “Australian dream”).

Interestingly, a moderate positive and significant relationship between materialism and extrinsic aspiration emerged ($r = .47, p < .001$). This is somewhat consistent with Watson’s (2003) study which showed materialism predicts more favourable attitudes towards using borrowed money and self-reporting as a spender (Watson, 2003). The conclusion gleaned from the association between materialism and extrinsic aspiration is that people high in materialism might regard homes as mere status items (see Tatzel, 2002), rather than secure shelter (see Colic-Peisker & Johnson, 2010). It seems apparent that they are concerned with outward rewards and status compared to participants who obtained lower scores on the MS. As Belk (1985) posited, issues pertaining to personality and self-concept are potential antecedents for materialism. Related with materialism are low self-esteem (Park & John, 2011), perceived peer pressure (Banarjee & Dittmar, 2008), and perceived existential or economic threat (Sheldon & Kasser, 2008). In correlational and experimental studies Kim, Callan, Gheorghiu, and Matthews (2017) found that making social comparisons and believing one’s self to be disadvantaged compared to others in similar positions (called personal relative deprivation) yields feelings of resentment and dissatisfaction, which in turn predicted and caused (higher) materialism. In the context of achieving financial goals (and financial security across the lifespan), materialism could be maladaptive. In Kahneman and Deaton’s (2010) research, emotional well-being rose in direct proportion with income, but plateaued after \$75,000. Combatting high materialism in people is likely to be a complex exercise. Perhaps phenomenological or existential psychology researchers are better equipped to undertake this task.

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Study Limitations and Strengths

Although a couple of features of this study are novel, it is not immune from certain shortcomings. The new saving behaviour scale would need to be further developed and tested to be more reliable and valid. As with all correlational studies, no causality can be confirmed. Intuition or knowledge can help one to guess which variable predicts another but there is a possibility that saving behaviour could predict financial literacy. Consider the ASIC's (2017) suggestion that aspiring homeowners could invest in stock shares or managed funds. If savers conducted some research or spoke with financial advisors about which shares or funds to invest in, this would naturally educate them in such matters, thus potentially increasing their financial literacy. It is quite possible for people who are not saving money to miss out on opportunities to increase their financial literacy simply because they are not thinking about ways to give their (absent) saving behaviour efforts a boost. A possible confounding variable between financial literacy and saving behaviour, and materialism and saving behaviour is impulsivity. Low financial literacy and high materialism are associated with credit card debt, as reported by Lusardi and Tufano (2015) and Watson (2003) respectively, but Ottaviana and Vandone's (2011) research showed that impulsivity predicted unsecured debt (from credit cards). They did not find a relationship between impulsivity and secured debt (e.g. mortgages) though.

This study was novel in terms of linking motivation and aspiration in SDT with a financial goal, even though SDT turned out to be so spectacularly unrelated to goal directed saving behaviour; but related to health and scholarly endeavours (see Koestner et al., 2008 and Pelletier et al., 2004). Saving, health, and scholarly endeavours on the surface seem disparate, however goals in all those areas of people's lives naturally require persistent effort in order to achieve some end. Perhaps measuring motivation quantitatively (as opposed to qualitatively) might have been related to saving behaviour. Despite the negligible results in

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this study, what is added to the empirical knowledge base is some sound evidence for ruling out motivation type and aspiration in future saving behaviour research. This study was also novel in the sense that materialism had not previously been investigated with saving for a specific item that is inherently material in nature, as opposed to “saving for a rainy day” (Christopher et al., 2004, p.114). Although the results for materialism were consistent with previous research and my hypothesis, there was some uncertainty before data collection that materialism might actually be positively related to saving behaviour when the purpose of the saving behaviour was for something material and desirable.

Future Research

There is scope for further investigation to find out what other psychological variables might explain saving behaviour because financial literacy and materialism (with demographic variables) did not explain a substantial amount of the variance in this study; and motivation and aspiration explained a negligible amount. In light of Ottaviana and Vandone’s (2011) study on impulsivity and indebtedness, researchers could investigate interactions between impulsivity and financial literacy, and impulsivity and materialism to see how those interactions predict saving behaviour (or spending behaviour). Gathergood (2012) found that poor self-control was a stronger predictor for consumer over-indebtedness than financial literacy. Also, as previously mentioned, investigating people’s capacity for delaying gratification could be worthwhile because going without some desirable, discretionary purchase has the potential to benefit people’s savings. Lastly, there is sufficient evidence to believe that materialism is a genuine latent variable in people. Therefore there is scope for addressing ways to diminish materialism. In addition to being negatively related to saving behaviour, materialism is associated with other undesirable variables such as social anxiety (see Schroeder & Dugal, 1995).

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Conclusion

Consistent with previous research on aspiring homeowners in Australia, this study showed that a majority of 18 – 40-year old people aspire to own their homes. Investigation of psychological variables in addition to demographic variables can enable researchers (and the wider community) to better understand saving behaviour. This has the potential to make aspiring homeowners aware of their individual differences which can help or hinder their saving efforts. This study showed that motivation and aspiration grounded in SDT are irrelevant to goal directed saving behaviour, but financial literacy and materialism are relevant. To conclude, investigation of these variables with impulsivity and/or poor self-control might further understanding of the role that psychology plays in saving. Furthermore, in response to Mr. Hockey's advice for aspiring homeowners (ABC News Australia, 2015), psychological variables in addition to economic variables can enrich the approach people take when it comes to saving for the "Australian dream".

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Appendix A

Note: Circled items depict the information and key words that the Mechanical Turk participants saw before clicking on the survey link and being shown the study information and consent form (see Appendix B). At the time of data collection, \$1.82 USD converted to \$2.50 AUD.

The screenshot displays the Amazon Mechanical Turk requester interface. The top navigation bar includes links for Home, Create, Manage, Developer, and Help. The 'Manage HITs' section is active, showing a list of HITs. A red circle highlights the HIT title 'Answer a survey about saving money for buying a home in Australia'. A red arrow points from this title to the survey link instructions. The survey link instructions are circled in red and include the text 'Survey takers will need to answer questions that are multiple choice on saving money, their material values, financial literacy and life aspirations' and 'survey, research project'. A red arrow points from the survey link instructions to the survey description. The survey description is circled in red and includes the text 'Survey takers will need to answer questions that are multiple choice on saving money, their material values, financial literacy and life aspirations' and 'survey, research project'.

Manage HITs

Managing Your HITs

Your HITs are available for Workers to complete until all assignments are completed, the HIT expires, or you decide to expire your HIT early.

The HIT management interface allows you to review and approve or reject completed assignments, download results, and extend your HITs by adding more assignments or extending the expiration time.

Sort by: **Creation Date (newest first)** **GO** [Show all details](#) | [Hide all details](#) Page 1 of 1

Answer a survey about saving money for buying a home in Australia [Delete this HIT](#)

Requester: **Ming** Assignments Pending Review: 0
 HIT Expiration Date: Aug 8 2017, 02:07 AM PDT Reviewed Assignments: 82 [Download results](#)
 Reward: \$1.82 Remaining Assignments: 8
 Assignments Requested: 90 Remaining Time: Expired [Add time](#)
 Description: Survey takers will need to answer questions that are multiple choice on saving money, their material values, financial literacy and life aspirations
 Keywords: survey, research project

Survey Link Instructions (Click to expand)

Survey https://ecua.qualtrics.com/jfe/form/SV_3UvLxSx9pBbHdc1

Survey takers will need to answer questions that are multiple choice on saving money, their material values, financial literacy and life aspirations
 survey, research project

SAVING BEHAVIOUR IN THE AUSTRALIAN DREAM

Amazon Mechanical Turk | ECU | Student Portal | Study Information


https://edithcowan.sona-systems.com/exp_info.aspx?experiment_id=17

Research Participation Sign-up System

Australia has one of the most unaffordable housing markets in the developed world but Australians still pursue the goal of becoming a home owner. The aim of this project is to understand psychological factors that promote (or impede) saving behaviour.

I am conducting research on saving behaviour in the context of fulfilling the Australian dream. Australians tend to preference home ownership over renting. Home buying for most people naturally requires saving money (from job income) for a considerable period of time. This research is focussed on understanding the psychological factors that help or hinder people's savings which can enable or prevent them from achieving their goal. Participation in this study is voluntary and involves completing an online survey. Participants will need to provide their responses using a point-and-click method. Participants may withdraw their participation at any time. This study is being supervised by Dr Guillermo Campitelli and has ethics approval from the School of Arts and Humanities and WAAPA Ethics sub-committee.

Study Information

Study Name	Saving behaviour in the Australian dream
Study Type	 Web Study This is an online study. Participants are given the study URL until after they sign up.
Study Status	Visible to participants: Approved Inactive study: Does not appear on list of available studies Online (web) study: Administered outside the system
Duration	30 minutes
Credits	0.5 Credits
Website	View Study Website Instructions You can also configure it so that participants receive credit in the system immediately after finishing the survey. If you are using Qualtrics, add ?id=%SURVEY_CODE% to the end of the URL to make use of this feature. Detailed Help
Abstract	Australia has one of the most unaffordable housing markets in the developed world but Australians still pursue the goal of becoming a home owner. The aim of this project is to understand psychological factors that promote (or impede) saving behaviour.
Description	I am conducting research on saving behaviour in the context of fulfilling the Australian dream. Australians tend to preference home ownership over renting. Home buying for most people naturally requires saving money (from job income) for a considerable period of time. This research is focussed on understanding the psychological factors that help or hinder people's savings which can enable or prevent them from achieving their goal. Participation in this study is voluntary and involves completing an online survey. Participants will need to provide their responses using a point-and-click method. Participants may withdraw their participation at any time. This study is being supervised by Dr Guillermo Campitelli and has ethics approval from the School of Arts and Humanities and WAAPA Ethics sub-committee.
Eligibility Requirements	Participants need to reside in Australia and be between 18 and 40-years of age.

Deadline

Participant Cancellation Deadline	0 hours before the study is to occur
ECU HREC Approval Code	
Direct Study Link	https://edithcowan.sona-systems.com/default.aspx?experiment_id=17 This is a direct URL for participants to access the study. You may use this in an email or study advertisement.
Date Created	April 21, 2017

Researcher Information

Researcher	Ming D'apico-Bien
Principal Investigator	Ming D'apico-Bien

Study Menu

- View/Administer Time Slots
- Timeslot Usage Summary
- Download Participant List
- Contact Participants
- View Bulk Mail Summary
- Download Prescreen Responses
- Change Study Information
- Participant Study View

Note: The circled item depicts the information that the ECU undergraduate psychology participant pool participants saw before clicking on the survey link and being shown the study information and consent form (see Appendix B).

Appendix B

Participant Information and Consent Form



Title of Project: Aspiration, financial literacy, materialistic values and motivation type in the Australian dream.

JOONDALUP CAMPUS

270 Joondalup Drive,
Joondalup
Western Australia 6027
Telephone 134 328
Facsimile: (08) 9300 1257
CRICOS 00279B

My name is Ming d'Iapico-Bien and I am a student in a Bachelor of Science - Honours (Psychology) degree at Edith Cowan University in Perth. Western Australia. You are invited to take part in this research project, which I am conducting as part of the requirement of my degree. The research project has ethics approval from the School of Arts and Humanities and WAAPA Ethics sub-committee.

The project aims to investigate the relationships that aspiration, financial literacy, materialistic values and motivation type have with saving behaviour (with the goal of buying a home). If you choose to take part in the project you will be completing an online survey using a point-and-click method. The survey will take no longer than 30 minutes to complete.

To maintain confidentiality, information collected during the research project will be coded so that you are unidentifiable. Unidentifiable data collected will be stored on my supervisor's (Dr Guillermo Campitelli) ECU computer and on the Open Science Framework repository (<https://osf.io/>). The information will be presented at a conference and in a written report, in which your identity will not be revealed. You may be sent a summary of the final report on request.

I anticipate that there is minimal risk involved for participants who take part in the project. Some of the items in the survey are about money and it is acknowledged that money may be a sensitive topic for people so emotional discomfort may be experienced.

Participation in this project is voluntary and you are free to withdraw at any time and there will be no penalty (no fee) or consequence for doing so. If you would like to take part in the project, please select "I agree" below. If you do not wish to take part in the project, please select "I disagree" or simply close your browser. If you select "I agree", please note that you are giving consent to voluntarily participate in the project.

If you have any questions about the research project or require further information you may contact the following:

Student Researcher: Ming d'Iapico-Bien
Email: mdiapico@our.ecu.edu.au

Supervisor: Dr Guillermo Campitelli
Telephone: +61 (0)8 6304 5736
Email: g.campitelli@ecu.edu.au

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If you have any concerns or complaints and wish to contact an independent person about this research project, you may contact:

Ms Heather Williams

Chair of the School of Arts and Humanities and WAAPA Ethics sub-committee

Phone: +61 (0)8 9370 6496

Email: h.williams@ecu.edu.au

Thank you for your time.

Yours sincerely,

Ms Ming d'Iapico-Bien

- ☐ I agree (1)
- ☐ I disagree (2)

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Appendix C

The survey presented to participants as presented in Qualtrics:

What gender are you?

- ☐ Male (1)
- ☐ Female (2)
- ☐ Other (3)
 - ☐ Intersex
 - ☐ Transgender
 - ☐ No sex
 - ☐ Prefer not to say

What age group are you in?

- ☐ 18 – 25 (1)
- ☐ 26 - 34 (2)
- ☐ 35 - 40 (3)
- ☐ 41 - 44 (4)
- ☐ 45 – 54 (5)
- ☐ 55 – 64 (6)
- ☐ Over 65 (7)

What was the highest level you completed in your formal education?

- ☐ Primary school or below (1)
- ☐ Secondary Year 10 or below (2)
- ☐ Secondary Year 11 (3)
- ☐ Secondary Year 12 (4)
- ☐ Trade/apprenticeship qualification (5)
- ☐ Other TAFE/Technical certificate or diploma (6)
- ☐ Undergraduate certificate or diploma (7)
- ☐ Bachelor Degree (8)
- ☐ Masters or Doctoral Degree (9)
- ☐ Other (10)

What is your employment status?

- ☐ Full-time (35 hours per week or more) (1)
- ☐ Part-time (between 25 – 34 hours per week) (2)
- ☐ Part-time (between 15 – 24 hours per week) (3)
- ☐ Casual (no fixed weekly hours ranging from 0 – 35 hours) (4)
- ☐ Unemployed and looking for work (5)
- ☐ Unemployed and not looking for work (e.g. student, carer) (6)

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What is your net (after tax) personal/individual income bracket?

- ☐ Over \$100K (1)
- ☐ \$90K - \$99K (2)
- ☐ \$80K - \$89K (3)
- ☐ \$70K - \$79K (4)
- ☐ \$60K - \$69K (5)
- ☐ \$50K - \$59K (6)
- ☐ \$40K - \$49K (7)
- ☐ \$30K - \$39K (8)
- ☐ \$20K - \$29K (9)
- ☐ Under \$20K (10)

Do you hold aspirations to own your own home?

- ☐ Yes (1)
- ☐ No (2)

You currently live:

- ☐ Alone (1)
- ☐ With a partner/spouse (2)
- ☐ With a partner/spouse and dependants (3)
- ☐ With your parents (4)
- ☐ With housemates (5)

Regarding the house you currently live in, do you and/or your partner:

- ☐ Own-it (no mortgage) (1)
- ☐ Own it (paying off mortgage) (2)
- ☐ Rent it (3)
- ☐ Someone else in the household owns it or rents it (4)

If you are not a home owner, are you:

- ☐ Currently saving for buying (1)
- ☐ Not currently saving for buying (2)

SAVING BEHAVIOUR AND THE AUSTRALIAN DREAM

Which best describes your motivation for wanting to own your home?

- ☐ Striving because somebody else wants me to or thinks I ought to, or because I will get something from somebody if I do. I probably would not strive for owning my home if I did not get some kind of approval for it. (1)
- ☐ Striving because I would feel ashamed, guilty, or anxious if I didn't. Rather than striving just because someone else thinks I ought to, I feel that I ought to strive for owning my home. (2)
- ☐ Striving because I really believe that it is an important goal to have. Although owning a home may once have been taught to me by others, I now endorse it freely and value it wholeheartedly. (3)
- ☐ Striving because of the fun and enjoyment which the goal provides me. While there may be many good reasons for owning my home, the primary 'reason' is simply my interest in the experience itself. (4)

This section has a series of statements about saving money for a house deposit. Read each statement and decide whether you agree or disagree with each statement as follows: 1 – Strongly disagree 2 – Disagree 3 – Neither agree or disagree 4 - Agree 5 – Strongly agree Mark the alternative that best describes your opinion. There are no right or wrong answers, just your opinion.

	1. Strongly disagree (1)	2. Disagree (2)	3. Neither agree or disagree (3)	4. Agree (4)	5. Strongly agree (5)
I regularly save money so that I will have a sufficient deposit when applying for a home loan. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Before purchasing items that I need, I shop around for the best buy so that saving for my deposit is not compromised. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not save as much for my deposit as I would like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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to because of unnecessary purchases. (3)					
I do not save as much for my deposit as I would like to because I do not stick to my budget. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have modified my lifestyle in order to grow my deposit. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My deposit savings are on track with my personal time-line. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I avoid being in locations where I will be tempted to dip into my deposit savings. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I keep my deposit savings separate from my emergency savings. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

This section has a series of statements about materialistic values. Read each statement and decide whether you agree or disagree with each statement as follows: 1 – Strongly disagree 2 – Disagree 3 – Neither agree or disagree 4 - Agree 5 – Strongly agree Mark the alternative that best describes your opinion. There are no right or wrong answers, just your opinion.

	1. Strongly disagree (1)	2. Disagree (2)	3. Neither agree or disagree (3)	4. Agree (4)	5. Strongly agree (5)
I admire people who	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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own expensive cars, and clothes. (1)					
Some of the most important achievements in life include acquiring material possessions. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't place much emphasis on the amount of material objects people own as a sign of success. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The things I own say a lot about how well I'm doing in life. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to own things that impress people. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't pay much attention to the material objects other people own. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I usually buy only the things I need. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to keep my life simple, as far as possessions are concerned. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The things I own aren't all that important to me. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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I enjoy spending money on things that aren't practical. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buying things gives me a lot of pleasure. (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like a lot of luxury in my life. (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put less emphasis on material things than most people I know. (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have all the things I really need to enjoy life. (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My life would be better if I owned certain things I don't have. (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wouldn't be any happier if I owned nicer things. (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'd be happier if I could afford to buy more things. (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like. (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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In this section you will be asked some questions about your financial knowledge.
Please select the best answer.

Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy: (1)

- ☐ More than today with the money in this account (0)
- ☐ Exactly the same as today with the money in this account (0)
- ☐ Less than today with the money in this account (1)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

Do you think that the following statement is true or false? "Bonds are normally riskier than stocks." (2)

- ☐ True (0)
- ☐ False (1)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

Considering a long time period (for example, 10 or 20 years), which asset described below normally gives the highest return: (3)

- ☐ Savings accounts (0)
- ☐ Stocks (1)
- ☐ Bonds (0)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

Normally, which asset described below displays the highest fluctuations over time: (4)

- ☐ Savings accounts (0)
- ☐ Stocks (1)
- ☐ Bonds (0)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

When an investor spreads his money among different assets, does the risk of losing a lot of money: (5)

- ☐ Increase (0)
- ☐ Decrease (1)
- ☐ Stay the same (0)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

Do you think that the following statement is true or false? "If you were to invest \$1,000 in a stock mutual fund, it would be possible to have less than \$1,000 when you withdraw your money." (6)

- ☐ True (1)

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- ☐ False (0)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

Do you think that the following statement is true or false? "A stock mutual fund combines the money of many investors to buy a variety of stocks." (7)

- ☐ True (1)
- ☐ False (0)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

Do you think that the following statement is true or false? "After age 65, you have to withdraw at least some money from your superannuation fund." (8)

- ☐ True (1)
- ☐ False
- ☐ It depends on the type of superannuation fund (0)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

Do you think that the following statement is true or false? "A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less." (9)

- ☐ True (1)
- ☐ False (0)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

Suppose you have \$100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have in this account in total? (10)

- ☐ More than \$200 (1)
- ☐ Exactly \$200 (0)
- ☐ Less than \$200 (0)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

Which of the following statements is correct? (11)

- ☐ Once one invests in a mutual fund, one cannot withdraw the money in the first year. (0)
- ☐ Mutual funds can invest in several assets, for example invest in both stocks and bonds. (1)
- ☐ Mutual funds pay a guaranteed rate of return which depends on their past performance. (0)
- ☐ None of the above (0)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

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Which of the following statements is correct? If somebody buys a bond of firm B:
(12)

- ☐ He owns a part of firm B (0)
- ☐ He has lent money to firm B (1)
- ☐ He is liable for firm B's debts (0)
- ☐ None of the above (0)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

Suppose you owe \$3,000 on your credit card. You pay a minimum payment of \$30 each month. At an annual percentage rate of 12% (or 1% per month), how many years would it take to eliminate your credit card debt if you made no additional new charges? (13)

- ☐ Less than 5 years (0)
- ☐ Between 5 and 10 years (0)
- ☐ Between 10 and 15 years (0)
- ☐ Never (1)
- ☐ Don't know (0)
- ☐ Refuse to answer (0)

This section has a series of statements about your life aspirations. Read each statement and decide how important each statement is to you as follows: 1 – Very unimportant 2 – unimportant 3 – Somewhat important 4 - Important 5 – Very important Mark the alternative that best describes your opinion. There are no right or wrong answers, just your opinion.

	1. Very unimportant (1)	2. Unimportant (2)	3. Somewhat important (3)	4. Important (4)	5. Very important (5)
Your name will be known by many people. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will have a lot of expensive possessions. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will be famous. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will donate time or money to charity (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will have good friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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that you can count on. (5)					
You will have a job that pays well. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will share your life with someone you love. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will be admired by many people. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will have people who care about you and are supportive. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will work for the betterment of society. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will be your own boss. (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will have a job with high social status. (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will work to make the world a better place (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your name will appear frequently in the media. (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will know people that you can have fun with. (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will help others improve their lives. (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will be financially	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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successful. (17)					
You will do something that brings you much recognition. (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will help people in need. (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will have a couple of good friends who you can talk about personal things with. (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We thank you for your time spent taking this survey.
Your response has been recorded.

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Appendix D

Eight Item Saving Behaviour Scale

1. I regularly save money so that I will have a sufficient deposit when applying for a home loan.
2. Before purchasing items that I need, I shop around for the best buy so that saving for my deposit is not compromised.
3. I do not save as much for my deposit as I would like to because of unnecessary purchases.*
4. I do not save as much for my deposit as I would like to because I do not stick to my budget.*
5. I have modified my lifestyle in order to grow my deposit.
6. My deposit savings are on track with my personal time-line.
7. I avoid being in locations where I will be tempted to dip into my deposit savings.
8. I keep my deposit savings separate from my emergency savings.

Items with an asterisk* denote reverse scored items.

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Appendix E

Table 10

Four Reasons for Goals with the Original Wording by Sheldon and Elliot (1998)

Reason	Type	Wording
External	Controlled	Striving because somebody else wants you to or thinks you ought to, or because you'll get something from somebody if you do. That is, you probably wouldn't strive for this if you didn't get some kind of reward, praise, or approval for it.
Introjected	Controlled	Striving because you would feel ashamed, guilty, or anxious if you didn't. Rather than striving just because someone else thinks you ought to, you feel that you ought to strive for that something.
Identified	Autonomous	Striving because you really believe that it's an important goal to have. Although this goal may once have been taught to you by others, now you endorse it freely and value it wholeheartedly.
Intrinsic	Autonomous	Striving because of the fun and enjoyment which the goal provides me. While there may be many good reasons for the goal, the primary 'reason' is simply your interest in the experience itself.

Appendix F

Thirty-two Item Aspiration Index by Kasser and Ryan (1996)

1. You will be physically healthy. (*physical fitness*)
2. Your name will be known by many people. (*social recognition*)
3. You will have people comment often about how attractive you look. (*attractive appearance*)
4. You will have a lot of expensive possessions. (*financial success*)
5. You will be famous. (*social recognition*)
6. You will donate time or money to charity. (*community feeling*)
7. You will feel good about your level of physical fitness. (*physical fitness*)
8. You will be the one in charge of your life. (*self acceptance*)
9. You will have good friends that you can count on. (*affiliation*)
10. You will keep up with fashions in hair and clothing (*attractive appearance*)
11. You will have a job that pays well. (*financial success*)
12. You will share your life with someone you love. (*affiliation*)
13. You will be admired by many people. (*social recognition*)
14. At the end of your life, you will look back on your life as meaningful and complete. (*self acceptance*)
15. You will have people who care about you and are supportive (*affiliation*)
16. You will work for the betterment of society. (*community feeling*)
17. You will be your own boss. (*financial success*)
18. You will achieve the “look” you’ve been after (*attractive appearance*)
19. You will deal effectively with problems that come up in your life. (*self acceptance*)
20. You will feel energetic and full of life. (*physical fitness*)
21. You will have a job with high social status. (*financial success*)
22. You will work to make the world a better place. (*community feeling*)
23. You will successfully hide the signs of aging. (*attractive appearance*)
24. Your name will appear frequently in the media. (*social recognition*)
25. You will know people that you can have fun with. (*affiliation*)

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26. You will be relatively free from sickness. (*physical fitness*)
27. You will help others improve their lives. (*community feeling*)
28. You will know and accept who you really are. (*self acceptance*)
29. You will be financially successful. (*financial success*)
30. You will do something that brings you much recognition. (*social recognition*)
31. You will help people in need. (*community feeling*)
32. You will have a couple of good friends that you can talk to about personal things. (*affiliation*)

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Appendix G

Thirteen Item Financial Literacy Scale by Fernandes, Lynch, and Netemeyer (2014)

1. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy:

- More than today with the money in this account.
- Exactly the same as today with the money in this account.
- Less than today with the money in this account.*
- Don't know
- Refuse to answer

2. Do you think that the following statement is true or false? "Bonds are normally riskier than stocks."

- True
- False*
- Don't know
- Refuse to answer

3. Considering a long time period (for example, 10 or 20 years), which asset described below normally gives the highest return:

- Savings accounts
- Stocks*
- Bonds
- Don't know
- Refuse to answer

4. Normally, which asset described below displays the highest fluctuations over time:

- Savings accounts
- Stocks*
- Bonds
- Don't know
- Refuse to answer

5. When an investor spreads his money among different assets, does the risk of losing a lot of money:

- Increase
- Decrease*
- Stay the same
- Don't know
- Refuse to answer

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6. Do you think that the following statement is true or false? “If you were to invest \$1,000 in a stock mutual fund, it would be possible to have less than \$1,000 when you withdraw your money.”

- True*
- False
- Don’t know
- Refuse to answer

7. Do you think that the following statement is true or false? “A stock mutual fund combines the money of many investors to buy a variety of stocks.”

- True*
- False
- Don’t know
- Refuse to answer

8. Do you think that the following statement is true or false? “After age 65, you have to withdraw at least some money from your superannuation fund.”

- True*
- False
- Don’t know
- Refuse to answer

9. Do you think that the following statement is true or false? “A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.”

- True*
- False
- Don’t know
- Refuse to answer

10. Suppose you have \$100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have in this account in total?

- More than \$200*
- Exactly \$200
- Less than \$200
- Don’t know
- Refuse to answer

11. Which of the following statements is correct?

- Once one invests in a mutual fund, one cannot withdraw the money in the first year.
- Mutual funds can invest in several assets, for example invest in both stocks and bonds.*

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- Mutual funds pay a guaranteed rate of return which depends on their past performance.
- None of the above
- Don't know
- Refuse to answer

12. Which of the following statements is correct? If somebody buys a bond of firm B:

- He owns a part of firm B
- He has lent money to firm B*
- He is liable for firm B's debts
- None of the above
- Don't know
- Refuse to answer

13. Suppose you owe \$3,000 on your credit card. You pay a minimum payment of \$30 each month. At an annual percentage rate of 12% (or 1% per month), how many years would it take to eliminate your credit card debt if you made no additional new charges?

- Less than 5 years
- Between 5 and 10 years
- Between 10 and 15 years
- Never*
- Don't know
- Refuse to answer

Answers with an asterisk* denote the correct answer to items.

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Appendix H

Eighteen Item Materialism Scale by Richins and Dawson (1992)

1. I admire people who own expensive homes, cars and clothes.
2. Some of the most important achievements in life include acquiring material possessions.
3. I don't place much emphasis on the amount of material objects people own as a sign of success.*
4. The things I own say a lot about how well I'm doing in life.
5. I like to own things that impress people.
6. I don't pay much attention to the material objects other people own.*
7. I usually buy only the things I need.*
8. I try to keep my life simple, as far as possessions are concerned.*
9. The things I own aren't all that important to me.*
10. I enjoy spending money on things that aren't practical.
11. Buying things gives me a lot of pleasure.
12. I like a lot of luxury in my life.
13. I put less emphasis on material things than most people I know.*
14. I have all the things I really need to enjoy life.*
15. My life would be better if I owned certain things I don't have
16. I wouldn't be any happier if I owned nicer things.*
17. I'd be happier if I could afford to buy more things.
18. It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like.

Items with an asterisk* denote reverse scored items.