



Consumption expenditures, social capital, and subjective well-being: evidence from Australia

Fengyu Wu¹ · Francesco Sarracino¹

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Abstract

While most research has focused on how consumption influences well-being, we examine the reverse: can higher life satisfaction reduce consumption? Using panel data from the 2006–2010 waves of the Household, Income and Labour Dynamics in Australia (HILDA) Survey, we examine whether life satisfaction predicts household spending on both basic and conspicuous goods and services. We focus on how this relationship is moderated by social capital, as measured by perceived social support, absence of loneliness, and active group membership. Fixed-effects analyses reveal that among individuals with lower social support or greater loneliness, higher life satisfaction is linked to increased spending. In contrast, among those with stronger social connections, this association diminishes or even reverses. These findings suggest that social capital can buffer the link between well-being and consumption, implying that policies fostering social ties and reducing loneliness may help decouple well-being from consumption growth and promote more sustainable lifestyles.

Keywords Consumption expenditures · Subjective well-being · Life satisfaction · Social capital · Loneliness

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✉ Francesco Sarracino
Francesco.Sarracino@ext.statec.etat.lu

¹ STATEC Research, National Institute of Statistics and Economic Studies of Luxembourg, Belvaux, Luxembourg

1 Introduction

Is there a trade-off between living good lives and protecting the environment? This question is central to modern economic organization. So far, increasing the production and consumption of goods and services has been the main approach to improving lives, but it has come at a significant environmental cost. For example, the 2024 United Nations report on progress toward the Sustainable Development Goals (SDGs) showed that countries around the world made little or no progress—and in some cases even moved backward—on the three goals related to environmental quality.¹ The scientific community has been sounding alarms about the environmental consequences of modern economic systems since the 1970s. At present, two main strategies are prevailing: green growth and degrowth. The supporters of green growth maintain that technological innovation will help separate economic growth from resource consumption and environmental impact. Degrowth proponents argue that limiting production and consumption is necessary to preserve resources for future generations. However, both approaches have limitations. A third strategy has emerged more recently: neo-humanism (Sarracino & O'Connor, 2023). This approach suggests that placing well-being at the center of public decision-making can foster both social and environmental sustainability in creativity-driven economies, with a particular focus on the role of social relationships, or social capital. For instance, when trust in others and institutions is high, people are more inclined to cooperate on shared goals, such as environmental protection, and attach less importance to social comparisons (Barolini et al., 2023), a driver of conspicuous consumption.

From an economics perspective, recent developments in behavioral economics have documented that subjective well-being (SWB), which encompasses both affective experiences and cognitive evaluations of life, influences individuals' decisions and has significant economic consequences. A growing literature shows that SWB influences how individuals evaluate trade-offs, perceive future outcomes, and allocate resources across competing uses (Basabreen, 2025; Guven, 2012; Ifcher & Zarghamme, 2011; Otrachshenko & Popova, 2014). In an intertemporal setting, individuals allocate resources across consumption, savings, and labor supply to maximize utility subject to a budget constraint. If higher SWB fosters greater optimism about future income streams (Joshani, 2024), utility-maximizing individuals—expecting sufficient future resources—may place lower marginal utility on future consumption relative to present consumption, and thus optimally shift resources toward current expenditures and away from savings, holding current income constant. However, there are reasons to believe that an individual's social capital moderates the extent to which well-being translates into market consumption. Individuals embedded in dense social networks benefit from informal insurance, reciprocal exchange, emotional support, and shared resources, all of which provide non-market sources of utility (De Weerd & Dercon, 2006). As a result, social capital may reduce reliance on market consumption as a channel through which well-being is experienced or reinforced. Under low levels of social capital, higher SWB is therefore expected to be associated with greater consumption expenditure, since market goods remain a primary means

¹ <https://unstats.un.org/sdgs/report/2024/The-Sustainable-Development-Goals-Report-2024.pdf>.

of utility realization. As social capital increases, however, the marginal utility of additional market consumption may decline because relational and community-based resources partially substitute for market-based forms of consumption. Consequently, the positive association between SWB and consumption expenditures should weaken and may even reverse at higher levels of social capital.

To date, however, the link between well-being and consumption—especially the moderating role of social relationships—has received relatively limited attention. In this paper, we examine how SWB, specifically life satisfaction, influences household consumption expenditures. While most existing studies explore how consumption affects well-being, we focus on the reverse relationship, with particular attention to how social capital shapes this association. Specifically, we test whether SWB is positively associated with consumption expenditures in the absence of strong social ties, and whether this association declines or reverses as social capital increases.

One key concern is that unobserved individual characteristics—such as personality traits or long-standing preferences—may simultaneously influence social capital, SWB, and consumption expenditures. To address this issue, we apply fixed effects panel regressions to data from the 2006–2010 waves of the Household, Income, and Labour Dynamics in Australia (HILDA) survey. This is an individual-level panel dataset that provides a rich battery of information on household spending, social relations and SWB. We consider total household consumption expenditures, its two components—basic and conspicuous consumption—and three indicators of social capital: social support, absence of loneliness, and active group membership. Following the literature, we define conspicuous consumption as spending on goods or services that are both visible to others and positional (Frank, 1985; Veblen, 1899; Winkelmann, 2012),² while basic consumption refers to spending driven primarily by utilitarian value. We expect that social capital may exert a stronger moderating effect on the relationship between well-being and conspicuous spending than on that between well-being and basic spending. Individuals with strong social ties—who gain emotional support, a sense of belonging, and social recognition—may rely less on conspicuous consumption to enhance their well-being. In contrast, basic spending may be less sensitive to the moderating role of social capital because it is primarily driven by necessity rather than social signaling.

We find that, in general, there is no significant association between life satisfaction and consumption expenditures. However, for individuals with poor social lives, higher life satisfaction is linked to increased spending on both conspicuous and basic goods or services. As social support increases and loneliness decreases, the relationship between life satisfaction and consumption expenditures turns negative. We observe relatively few differences between conspicuous and basic consumption regarding the moderating effects of social capital. A difference concerns active group membership, which significantly moderates the positive association between life satisfaction and conspicuous spending, whereas the relationship between life satisfaction and basic spending remains insignificant regardless of membership status. These findings challenge the prevailing assumption that higher consumption is inher-

² Veblen (1899) coined the term “conspicuous consumption” to describe consumption intentionally used to signal status.

ently linked to greater well-being, suggesting instead that elevated consumption may reflect a deficit in social connectedness. From a broader perspective, these findings have positive implications for sustainability, suggesting that policies aimed at fostering social capital may simultaneously enhance well-being and reduce consumption, thereby mitigating environmental impact.

The remainder of the paper is structured as follows. Section 2 reviews the relevant literature. Section 3 describes the data and outlines the methodology used in the analysis. Section 4 presents the main results, including robustness checks and heterogeneity analyses. Section 5 discusses limitations, and Section 6 concludes by highlighting the key findings and their policy implications.

2 Literature review

There has been extensive discussion on how material living conditions affect subjective well-being (SWB), with most research focusing on the role of income. Although country-level studies generally agree that richer countries report higher levels of SWB in cross-sectional comparisons, there is less consensus regarding the time-series relationship between income and SWB (e.g., Easterlin, 1974; Easterlin, 1995; Easterlin et al., 2010; Easterlin & O'Connor, 2022; Hagerty & Veenhoven, 2003; Stevenson & Wolfers, 2008). Within-country individual-level studies generally find a positive, albeit moderate, effect of income (e.g., Blanchflower & Oswald, 2004; Jebb et al., 2018; Kingdon & Knight, 2007; Luttmer, 2005). More recently, there has been a growing body of literature examining how consumption expenditures influence SWB. Studies suggest that total household spending has a positive, though moderate, impact on life satisfaction (Headey et al., 2008; Guillen-Royo, 2008; Noll & Weick, 2015). Some research also indicates that life satisfaction increases with conspicuous spending but not with spending on basic goods or services (Perez-Truglia, 2013; Zimmermann, 2014; Wu, 2020).

However, relatively little is known about the reverse relationship—how SWB influences material living conditions. Some studies have shown that individuals with higher levels of SWB tend to exhibit greater labor productivity (Bellet et al., 2024) and earn higher incomes later in life (De Neve & Oswald, 2012; Graham et al., 2004; Marks & Fleming, 1999). The evidence on how SWB influences consumption expenditures, however, is mixed. Guven (2012) found that happier individuals in the Netherlands tend to save more and exhibit greater control over their spending. In contrast, Zhu et al. (2021) reported that higher levels of happiness are associated with increased spending, particularly on basic necessities, education, and gifts in rural China. Dominko & Verbič (2022) found that life satisfaction positively affects spending on dining out and leisure activities among older adults in England, suggesting that those more satisfied with their lives are also more engaged in social and leisure activities.

It is not surprising that existing studies report mixed findings, given the variety of potential pathways through which SWB may influence consumption expenditures. On the one hand, higher SWB may lead to reduced consumption expenditures through several mechanisms: enhanced self-control (Fredrickson, 2004), increased

expectations of longevity and greater concern for future health (Diener & Chan, 2011; Steptoe, 2019), and a more risk-averse approach to financial decisions (Deaton, 2005). On the other hand, higher SWB may also increase spending through alternative channels, such as greater productivity (Oswald et al., 2015), a higher likelihood of employment (Krause, 2013), and improved earnings (De Neve & Oswald, 2012).

One factor that has received relatively less attention in the relationship between SWB and consumption expenditures is the potential confounding role of social relations or social capital. Higher SWB is linked to more cooperation, prosocial behavior, social participation, and trust (Bartolini & Sarracino, 2015; Meier & Stutzer, 2008; Lyubomirsky et al., 2005). There have also been some discussions on how social capital is associated with household spending. Prior research has shown that social capital can reduce poverty—measured by household per capita expenditures or income—by enhancing access to resources and opportunities (Aker, 2007; Grootaert, 1999; Narayan & Pritchett, 1999). It can also help individuals smooth consumption by providing informal financial support during shocks (De Weerd & Dercon, 2006) and improving access to credit (Karlan et al., 2009). Moreover, social capital facilitates the sharing of food, knowledge, and other resources within communities, potentially reducing household spending on basic goods and services (Martin et al., 2004; Nosratabadi et al., 2020). Conversely, higher levels of social participation or denser social networks may also encourage social comparisons and stimulate spending on visible or conspicuous goods and services (Charles et al., 2009; Bertrand & Morse, 2016). One study that explicitly examines the role of social capital in the relationship between SWB and material living conditions is Bartolini et al. (2023), who found that the associations of income and social comparisons with SWB weaken in individuals with rich social lives.

Overall, the limited literature on the moderating role of social capital in the relationship between SWB and consumption provides mixed evidence, reflecting potentially opposing mechanisms. On the one hand, social capital may serve as a substitute for consumption by providing non-market sources of utility through interpersonal relationships, thereby reducing the well-being gains associated with additional consumption. On the other hand, greater social connectedness may increase the salience of social comparisons, thereby increasing the marginal utility of consumption and strengthening its association with SWB. If social capital primarily acts as a substitute for consumption in generating well-being, the association between consumption and SWB should weaken as social capital increases. Accordingly, we test the following hypotheses:

Hypothesis 1: SWB is positively associated with consumption expenditures among individuals with scarce social relationships.

Hypothesis 2: As social capital increases, the positive association between SWB and consumption expenditures weakens and may even reverse.

3 Data and methodology

3.1 Data

We use data from the Household, Income and Labour Dynamics in Australia (HILDA) survey, which began in 2001 and currently includes 23 waves of data.³ The HILDA survey is funded by the Australian government and conducted by the Melbourne Institute of Applied Economic and Social Research. As a nationwide panel survey, it collects a broad range of social, demographic, and socioeconomic data. Its design is heavily influenced by other household panel studies, such as the German Socio-Economic Panel (GSOEP) and the British Household Panel Survey (BHPS) (Frick et al., 2007; Watson & Wooden, 2012). An advantage of the HILDA survey is its relatively detailed household spending data, which makes this study possible. Information on household expenditures for a wide range of nondurable goods and services was first collected through the Self-Completion Questionnaire (SCQ) in Wave 5. The scope of expenditure items was expanded in Wave 6 to include consumer durables, although some items were later dropped in Wave 11. In addition, detailed information on housing and childcare expenditures is collected regularly through the Household Questionnaire. This study utilizes data from Waves 6 to 10 (2006–2010), which contain the most comprehensive set of consumption items. Excluding those without household expenditures, life satisfaction, social capital indicators, and other individual characteristics used in this study, we are left with 11,750 individuals and 45,693 observations.

3.2 Variables

3.2.1 Consumption expenditures

Waves 6–10 of the HILDA contain 28 consumption categories. Based on the existing literature, we sort these categories into 18 broader consumption categories: vehicle purchases, clothing and footwear, furniture and household appliances, recreational devices and equipment, meals eaten out, alcohol, holidays, education, tobacco, groceries, housing, public transportation, motor vehicle repairs and maintenance, motor vehicle fuels and engine oil, phone rent and calls, and internet charges, health care (health insurance included) and child care, home utilities, and other insurance.⁴ Detailed definition of the categories can be found in Appendix Table A1. Total consumption expenditures refer to the sum of household spending across all the consumption categories listed above. The baseline classification of conspicuous versus basic consumption follows Wu (2020), drawing heavily on prior literature on conspicuous consumption, particularly Charles et al. (2009) and Friehe & Mechtel (2014). As

³ The interviews were mostly conducted from August to November each year.

⁴ HILDA collects retrospective expenditure information using a substantially more aggregated questionnaire compared to the ABS Household Expenditure Survey (HES), which records over 600 expenditure categories using a two-week expenditure diary. Although this may lead to underreporting of total household consumption expenditure in HILDA relative to official statistics, the HILDA expenditure data remain informative and of good quality, as discussed and demonstrated in Wu (2020).

Table 1 Definitions of conspicuous vs. basic goods or services

Category	Baseline: Wu (2020)	Heffetz (2011)'s Visibility Index
Vehicle purchases	C	0.73
Clothing and footwear	C	0.71
Furniture and household appliances	C	0.68
Recreational devices and equipment	C	0.66
Meals out	C	0.62
Alcohol	C	0.6
Holidays	C	0.58
Education	B	0.56
Tobacco	B	0.76
Groceries	B	0.5
Housing	B	0.5
Public transportation	B	0.45
Motor vehicle repairs and maintenance	B	0.42
Motor vehicle fuels and engine oil	B	0.39
Phone rent and calls, and internet charges	B	0.38
Health care (health insurance included) and child care	B	0.36
Home utilities	B	0.31
Other Insurance	B	0.21

Note: For the consumption goods and services reported in HILDA and classified in this study, the average Heffetz Index is 0.44 for basic (B) goods and services and 0.65 for conspicuous (C) goods and services

shown in Table 1, we classify vehicle purchases, clothing and footwear, furniture and household appliances, recreational devices and equipment, meals eaten out, alcohol, and holidays as conspicuous consumption, while all remaining items are categorized as basic. This baseline classification appears plausible based on the visibility index developed by Heffetz (2011), which measures the visibility or conspicuousness of consumption by assessing how quickly members of society notice household spending across different categories, with index values ranging from 0 to 1 and higher values indicating greater visibility. Heffetz (2011) finds a strong and positive correlation between visibility and expenditure elasticity. This implies that items with higher visibility index values are more likely to be considered luxuries and, therefore, less likely to be associated with basic needs. The last column of Table 1 presents the visibility index. Overall, the purchases we classify as conspicuous tend to rank higher on the visibility index than those categorized as basic. As robustness checks, we will explore different classifications for conspicuous and basic consumption. Consumption expenditure variables are deflated to constant 2006 prices using the Consumer Price Index (CPI) data from the Australian Bureau of Statistics.⁵ To approximate individual-level spending, household expenditures are divided by household size

⁵ To minimize the influence of outliers, we exclude observations with household expenditures or income falling in the top and bottom 0.1% of their respective distributions.

to obtain per capita values.⁶ All expenditure measures are then log-transformed⁷ to account for expected nonlinear relationships and to normalize the typically skewed distribution of consumption data.

3.2.2 Life satisfaction

The life satisfaction variable is based on the question, “*All things considered, how satisfied are you with your life?*” Responses are measured on an 11-point scale (0–10), with higher values indicating greater life satisfaction. To partially address the issue of reverse causality, we used lagged measures of life satisfaction from waves 5 to 9. The mean level of life satisfaction is 7.90, and the median is 8. The distribution is left-skewed. We perform within-person standardization of life satisfaction to facilitate interpretation of the estimated coefficients in terms of within-person standard deviation changes.⁸

3.2.3 Social capital

We use three indicators of social capital: a social support index, a measure of absence of loneliness, and another measure of active membership.⁹ Our social support index is derived from the answers to the question “*The following statements have been used by many people to describe how much support they get from other people. How much do you agree or disagree with each?*”

- *I don't have anyone that I can confide in.*
- *There is someone who can always cheer me up when I'm down.*
- *I seem to have a lot of friends.*
- *I have no one to lean on in times of trouble.*
- *I often need help from other people but can't get it.*
- *I enjoy the time I spend with the people who are important to me.*
- *People don't come to visit me as often as I would like.*
- *When I need someone to help me out, I can usually find someone.*

⁶ Results using OECD-modified equivalised household consumption expenditures and income are consistent with the baseline findings. While model fit is somewhat lower under equivalised scaling, the substantive conclusions are unchanged. The results are available upon request.

⁷ We approximate the logarithmic transformation using the inverse hyperbolic sine (IHS) function to account for a small number of observations with zero conspicuous expenditures.

⁸ The within-individual standardization of life satisfaction requires at least two observations per respondent, as a within-person standard deviation cannot be calculated for individuals observed only once. Consequently, respondents with a single eligible observation receive missing values on the standardized measure and are excluded from analyses using this variable. In the present sample, this results in the loss of 6,026 observations (approximately 10% of the sample) compared with specifications using the raw life satisfaction measure. Re-estimating the models using lagged raw life satisfaction yields substantively similar results. These additional results are available from the authors upon request.

⁹ HILDA also includes other social capital variables, such as social trust, community participation, and relationships among neighbors. However, these variables are available in at most three of the five waves with comprehensive spending data. To ensure a reasonably large sample coverage, we focus on all the variables which are available in all five waves, namely social support, loneliness, and active membership.

- *When somethings on my mind, just talking with the people I know can make me feel better.*
- *I often feel very lonely.*”

The response scale ranges from 1 to 7, with higher values indicating stronger agreement with the statement. Principal component analysis of the ten items identified two components with eigenvalues greater than 1, although these components primarily reflected the distinction between positively and negatively worded items. After reverse-coding the negatively worded items, the ten items demonstrated relatively high internal consistency, with a Cronbach’s alpha of 0.826. Therefore, in the baseline analysis, we constructed a social support index by counting the number of responses with a score greater than or equal to the sample median. This approach requires no assumption about the interval properties of the ordinal response scale and provides a straightforward count-based summary of perceived support. The measure of loneliness is based on how much one agrees or disagrees with the statement “*I often feel very lonely.*” We reverse the scale so that higher values indicate stronger disagreement with the statement (i.e., higher values correspond to lower loneliness). Similarly, in the baseline analysis, to avoid imposing interval-scale assumptions, we create a binary variable, *Not Lonely*, coded as 1 if the reversed score is greater than or equal to 6 (the median), and 0 otherwise. It is worth noting that this item appears last among the series of ten statements about perceived support in the questionnaire, and as such, responses may be influenced by answers to the preceding items. We consider *Not Lonely* separately from the social support index because it is an interesting outcome in its own right. On one hand, it serves as a concise summary of the nine questions on social support, as it is the final item in that series; on the other hand, it captures the subjective perception of social connectedness, which may have slightly different associations with the outcomes and moderating effects that differ from those of the broader social support index. The third measure of social capital is a binary indicator of active membership, derived from responses to the question: “*Are you currently an active member of a sporting, hobby, or community-based club or association?*” The variable is coded as 1 for “*Yes*” and 0 for “*No*.” Active membership is commonly regarded as a form of civic engagement—an important supply-side component of social capital that fosters trust and cooperation within communities.

3.2.4 Control variables

Following the household consumption literature, a wide variety of demographic and socioeconomic variables are included in the econometric analysis, including age categories—25–34, 35–44, 45–54, 55–64, 65–74, and 75 or above, with below 25 omitted; highest level of educational—high school, vocational degree, and bachelor’s degree or above, with below high school omitted; marital status—separated, divorced, or widowed, and never married, with married or de facto omitted; labor market status—part-time employed, unemployed, and not in the labor force, with full-time employment omitted; household composition—children (age ≤ 14) in the household and older adults (age ≥ 65) in the household; household financial resources, as indicated by natural log of household disposable income per capita;

and finally, health status, represented by a dummy on whether the respondent has any long-term health condition. In addition, we control for wave, month of interview and region dummies to account for temporal and geographic variations. Table 2 presents the summary statistics of all the variables used in the empirical analysis.

3.3 Estimation model

Consider the following regression model with individual fixed effects.

$$E_{it} = \beta LS_{i,t-1} + \rho^k SC_{it}^k \times LS_{i,t-1} + \delta^k SC_{it}^k + \gamma' X_{it} + \alpha_i + \epsilon_{it} \quad (1)$$

Table 2 Summary statistics, pooled over all waves, HILDA 2006–2010

	Mean	SD
Total household expenditures per capita	22,553	15,735
Total household conspicuous expenditures per capita	6596	8006
Total household basic expenditures per capita	15,956	10,927
Lagged standardized life satisfaction	0.00	0.88
Social support index	6.23	2.92
Not lonely	0.59	0.49
Active member	0.38	0.49
Total household income per capita	32,887	23,905
Reference group: age 15–24		
Age 25–34	0.15	0.357
Age 35–44	0.19	0.392
Age 45–54	0.19	0.394
Age 55–64	0.15	0.353
Age 65–74	0.10	0.30
Age 75–	0.07	0.26
Reference group: below high school		
High school	0.15	0.36
Vocational degree	0.29	0.45
Bachelor's degree or above	0.22	0.42
Reference group: married or de facto		
Separated, divorced, or widowed	0.15	0.35
Never married	0.21	0.41
Reference group: full-time employed		
Part-time employed	0.21	0.41
Unemployed	0.03	0.17
Not in the labour force	0.32	0.47
Children (age ≤ 14) in the household	0.32	0.47
Older adults (age ≥ 65) in the household	0.21	0.41
Long-term health condition	0.28	0.45

Notes: Number of observations: 45,693

Variables not reported: year, month of interview, and region dummies

Monetary values are expressed in Australian dollars (AUD). According to the European Central Bank, the AUD–EUR exchange rate fluctuated between approximately 0.50 and 0.70 over the 2006–2010 period. This conversion is provided for reference only and does not affect the empirical analysis

Table 3 Consumption expenditures and life satisfaction

Variables	(1)	(2)	(3)
	Ln (total household expenditures per capita)	Ln (total household conspicuous expenditures per capita)	Ln (total household basic expenditures per capita)
Lagged standardized life satisfaction	0.00195 (0.00197)	0.0101* (0.00555)	0.00111 (0.00189)
Individual Characteristics	YES	YES	YES
Individual Fixed Effects	YES	YES	YES
Region Fixed Effects	YES	YES	YES
Wave Fixed Effects	YES	YES	YES
Observations	45,693	45,693	45,693
R-squared	0.048	0.010	0.050
Number of Individuals	11,750	11,750	11,750

Robust standard errors clustered at the individual level in parentheses

Individual characteristics include household disposable income per capita, age, education, marital status, employment status, children (age ≤ 14) in the household, older adults (age ≥ 65) in the household, long-term health condition, and month dummies

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

where i , t , and k index individual, time, and social capital, respectively. E represents a measure of household expenditures per capita (total, conspicuous, or basic consumption), LS represents standardized life satisfaction, SC is an indicator of social capital, X represents a number of time-variant individual characteristics (i.e., household disposable income per capita; age; education; marital status; employment status; children (age ≤ 14) in the household; older adults (age ≥ 65) in the household; long-term health condition, month, year, and region dummies), α indicates individual regional and wave fixed effects, and ϵ is an error term. Our key estimator of interest is $\hat{\beta} + \hat{\rho}^k \times SC^k$, which denotes the effect of life satisfaction as it varies with social capital k . δ^k represents the direct effect of social capital k (for an individual with average life satisfaction). Given the observational design and the empirical strategy employed, we cannot rule out the possibility of endogeneity. Accordingly, the results are most appropriately interpreted as correlations rather than causal effects.

4 Results

4.1 Baseline results

We first examine the relationship between life satisfaction and household expenditures, without including any social capital variables. As shown in Table 3, household expenditures per capita are not significantly associated with lagged life satisfaction, except for conspicuous expenditures per capita, which show a positive and margin-

ally significant coefficient.¹⁰ Specifically, a one-standard-deviation (within-person) increase in life satisfaction is associated with an approximately 1.0% increase in conspicuous expenditures per capita in the following period.¹¹ The results suggest that the average relationship between spending and life satisfaction may be small.¹²

What about the potential moderating role of social capital? We try to answer this question by adding the interaction between each social capital indicator and lagged life satisfaction into the regressions (and its associated main effects), and the corresponding results are shown in Table 4. To illustrate the results, we show the estimates with confidence intervals on the effects of lagged life satisfaction on various types of expenditures by the level of each social capital indicator in Fig. 1. Panel A.1 of this figure shows that when social support is at its lowest level (social support index = 0), the relationship between lagged life satisfaction and total household spending per capita is significantly positive. However, as the social support index increases, the effect size diminishes and becomes statistically insignificant, eventually turning negative. More precisely, a one-standard-deviation increase in life satisfaction is associated with approximately a 0.4–1.3% increase in total expenditures per capita in the following period when the social support index is relatively low (0–5), whereas this relationship becomes statistically insignificant when the social support index exceeds 5. This implies that the positive association between household spending and life satisfaction can be fully mitigated with higher levels of social support. Similarly, if an individual is lonely, household spending per capita is positively associated with lagged life satisfaction (Panel A.2). One-standard-deviation increase in life satisfaction corresponds approximately to 1.2% increase in total expenditures per capita in the following period, a magnitude comparable to that observed at low levels of social support (index 0–2). However, among individuals who are not lonely, the association turns negative and statistically significant, with a magnitude of approximately a 0.5% decrease in total expenditures per capita in the following period. For active membership, household spending per capita is not significantly associated with lagged life satisfaction regardless of membership status (Panel A.3).

The results for the social support index and loneliness are generally consistent across models using conspicuous and basic expenditures as outcome variables. There are, however, some differences worth noting. When the social support index is at its maximum or individuals are not lonely, the association between lagged life satisfaction and basic spending becomes negative and significant (Panels B.1 and B.2). In contrast, when conspicuous spending is used as the outcome variable, the association becomes negative in magnitude but remains statistically insignificant when social capital is high (Panels C.1 and C.2). Regarding active membership, we find that if an

¹⁰ The full regression results underlying Table 3, including estimated coefficients for selected control variables (excluding individual, region, wave, and month fixed effects), are reported in Appendix Table A2.

¹¹ In substantive terms, this effect is small in magnitude but economically meaningful in the context of discretionary spending categories such as conspicuous consumption, where even modest percentage changes may reflect shifts in non-essential consumption behavior.

¹² The within R-squared is higher for basic consumption than conspicuous consumption, which is expected given that within-person changes in necessities are more closely tied to observable time-varying factors such as income and household composition, whereas fluctuations in luxury and status spending are more sensitive to transient social dynamics and aspirational motives that are inherently harder to capture.

Table 4 Consumption expenditures and life satisfaction: the moderating role of social capital

Variables	Ln (total household expenditures per capita)			Ln (total household conspicuous expenditures per capita)			Ln (total household basic expenditures per capita)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lagged standardized life satisfaction	0.0126*** (0.00479)	0.0115*** (0.00328)	0.00170 (0.00254)	0.0393*** (0.0142)	0.0288*** (0.00997)	0.0171** (0.00755)	0.0119*** (0.00456)	0.0112*** (0.00314)	-0.000763 (0.00244)
Social support index	-0.000659 (0.00115)			0.00717** (0.00330)			-0.00224** (0.00110)		
Lagged standardized life satisfaction*Social support index	-0.00170** (0.000693)			-0.00467** (0.00195)			-0.00174*** (0.000661)		
Not lonely		-0.00907* (0.00536)			0.00407 (0.0158)			-0.00898* (0.00517)	
Lagged standardized life satisfaction*Not lonely		-0.0161*** (0.00429)			-0.0314** (0.0124)			-0.0168*** (0.00412)	
Active member			0.0127** (0.00620)			0.0363** (0.0167)			0.00607 (0.00594)
Lagged standardized life satisfaction*Active member			0.000538 (0.00428)			-0.0187 (0.0118)			0.00486 (0.00407)
Observations	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693
R-squared	0.048	0.048	0.048	0.010	0.010	0.010	0.050	0.051	0.050
Number of Individuals	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750

Robust standard errors clustered at the individual level in parentheses

The control variables are the same as those in Table 3

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

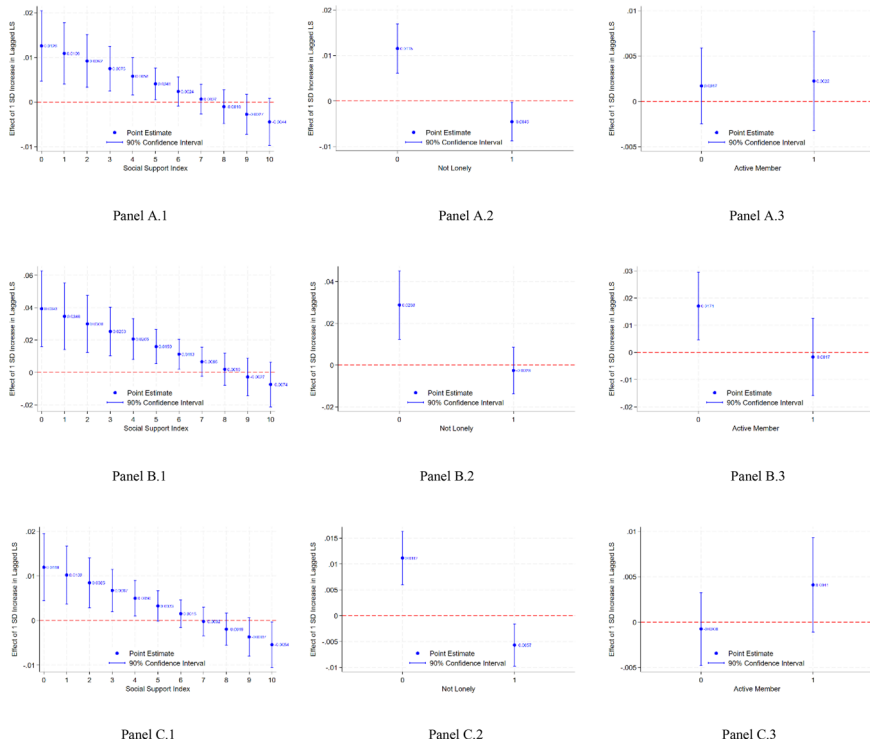


Fig. 1 The effects of lagged life satisfaction on expenditures by the level of social capital (social support index, not lonely & active membership). **Panel A** Outcome variable: total expenditures. **Panel B** Outcome variable: conspicuous expenditures. **Panel C** Outcome variable: basic expenditures. Notes: The figure displays the estimates of $\beta + \rho^k \times SC_{it}^k$, along with 90% confidence intervals

individual is not an active member of a club or association, a higher level of lagged life satisfaction is associated with a higher level of conspicuous spending, but the association is insignificant if one is an active member (Panel B.3). On the other hand, lagged life satisfaction is not associated with basic spending regardless of membership status.¹³ Regarding the magnitudes, it is noteworthy that when social capital is low, the associations between life satisfaction and conspicuous spending are considerably larger than those observed for total or basic spending. For instance, among lonely individuals, a one-standard-deviation increase in life satisfaction is associated with an approximately 3% increase in conspicuous spending, compared with about a

¹³ For completeness, we extend the analysis beyond 2010 using expenditure categories consistently available across later HILDA waves. Total consumption and conspicuous consumption cannot be meaningfully constructed over the full period, as only three conspicuous consumption categories—clothing and footwear, meals out, and alcohol—remain consistently available after 2010. These categories account for less than 40% of total conspicuous consumption in our original measure. In contrast, all basic consumption categories are available across all waves, allowing the analysis of basic consumption to be extended to 2006–2022. These results are reported in Appendix Table A3. The estimates from the extended-period analysis are qualitatively unchanged but less statistically significant than those based on the original 2006–2010 sample.

1.1–1.2% increase in basic and total spending. This suggests that, despite the substantially larger magnitude observed for conspicuous spending, these associations are all mitigated among individuals who do not feel lonely.

We also conduct separate analyses for 18 spending categories, with the results presented in Appendix Table A4. The moderating role of social support appears significant in spending on recreational devices and equipment, education, health care (including health insurance) and childcare, utilities, and other types of insurance (such as home, contents, and motor vehicle insurance). In comparison, the moderating role of *Not Lonely* is only significant for spending on recreational devices and equipment, housing, and utilities. The moderating effect of active membership does not appear significant for any category of spending, independently.

Regarding the average association between social capital and spending, results in Table 4 indicate that *Not Lonely* is associated with lower total household expenditures per capita, whereas active membership is associated with higher expenditures. Meanwhile, the relationship between overall social support and household expenditures per capita is not statistically significant (columns (1)–(3)). A closer look at expenditure types helps explain this contrasting pattern. Higher social support and active membership are both associated with higher conspicuous spending (columns (4)–(6)). In contrast, higher social support and not feeling lonely are associated with lower basic spending (columns (7)–(9)). These findings suggest that the relationship between household spending and social capital varies depending on the type of consumption. Some of these associations may be partly mechanical in nature. For instance, Appendix Table A4 shows that individuals who participate in sports, hobby, or community-based clubs and associations tend to spend more on categories such as clothing and footwear, recreational devices and equipment, and meals eaten out, which are directly related to participation in these activities.¹⁴ In Appendix Table A5, it can also be observed that adding social capital variables has little effect on the coefficients of lagged life satisfaction, suggesting that social capital is unlikely to confound the estimated relationship between life satisfaction and spending.¹⁵

4.2 Robustness checks

We conduct several robustness checks using conspicuous and basic spending as outcome variables, based on different categorizations of consumption. First, we considered the definition of conspicuous consumption from Friehe and Mechtel (2014), which excludes alcohol as conspicuous. In addition, there have been discussions

¹⁴ As for the average associations between social capital and 18 spending categories, we find that greater social support is generally linked to higher spending on furniture and household appliances, recreational devices and equipment, and holidays—all of which are relatively conspicuous forms of consumption—as well as on other types of insurance. Feeling not lonely is associated with more spending on furniture and household appliances, holidays, and education, but with less spending on alcohol and tobacco. Finally, active membership is associated with greater spending on clothing and footwear, recreational devices and equipment, meals eaten out, holidays, education, motor vehicle repairs and maintenance, health care and childcare, utilities, and other insurance.

¹⁵ Consistent with this interpretation, pairwise correlations between lagged life satisfaction and the three social capital measures are small in magnitude (close to zero) and statistically insignificant across all cases, indicating weak associations between lagged life satisfaction and social capital in our sample.

on whether education and tobacco should be categorized as conspicuous. Spending on education may be relatively visible due to school uniforms, while spending on tobacco products is also highly visible according to Heffetz's visibility index. However, tobacco may not meet the second criterion of conspicuous consumption—that the good is positional (Friehe & Mechtel, 2014; Wu, 2020).¹⁶ The results for conspicuous and basic expenditures based on these three alternative definitions remain robust compared to the baseline results (Appendix Figs. A1 and A2; Appendix Table A6). In addition, we conduct robustness checks using alternative specifications of the social capital variables. In particular, the social support measure is recalculated as the simple mean of the ten items, with negatively worded items reverse-coded, while *Not Lonely* is reconstructed as a continuous reverse-coded score based on responses to the loneliness question. The results, presented in Appendix Table A7, remain consistent with the baseline findings, suggesting that our findings are not sensitive to these coding choices.

4.3 Heterogeneity analysis

We perform heterogeneity analyses by gender and age to better understand the main results. For brevity, we present the findings for total spending in the main text and report those for conspicuous and basic spending in the [Appendices](#). Overall, the moderating effects of social capital appear more pronounced among females than males. Specifically, among females, the positive association between lagged life satisfaction and total spending becomes statistically insignificant and even turns negative when social support is high or when individuals report low levels of loneliness (Panels A and B of Fig. 2). In contrast, for males, the association between lagged life satisfaction and total spending remains statistically insignificant regardless of social support or loneliness levels. When using conspicuous spending as the outcome variable, we find that the association between lagged life satisfaction and conspicuous spending is positive and statistically significant among individuals who are not active members of clubs or associations but becomes insignificant among those who are active members (Panel C of Appendix Fig. A3). For males, however, the associations remain statistically insignificant regardless of membership status. The results for basic spending as the outcome variable are generally consistent with those observed for total spending (Appendix Fig. A4). However, it is important to note that point estimates significantly different from zero do not imply statistically significant differences between groups. The differences in the moderating effects between genders are not statistically significant, as indicated by the largely overlapping confidence intervals across subpanels (e.g., Panels A.1 versus A.2).¹⁷

¹⁶ Our results are not robust to the alternative operationalization of conspicuous consumption as proposed by Charles et al. (2009), who consider only vehicle purchases and clothing and footwear as conspicuous consumption.

¹⁷ To formally test for gender heterogeneity, we re-estimate pooled models augmented with a three-way interaction between lagged life satisfaction, each social capital measure, and gender. The three-way interaction term is statistically insignificant across all specifications, suggesting that the moderating effects do not differ significantly between males and females.

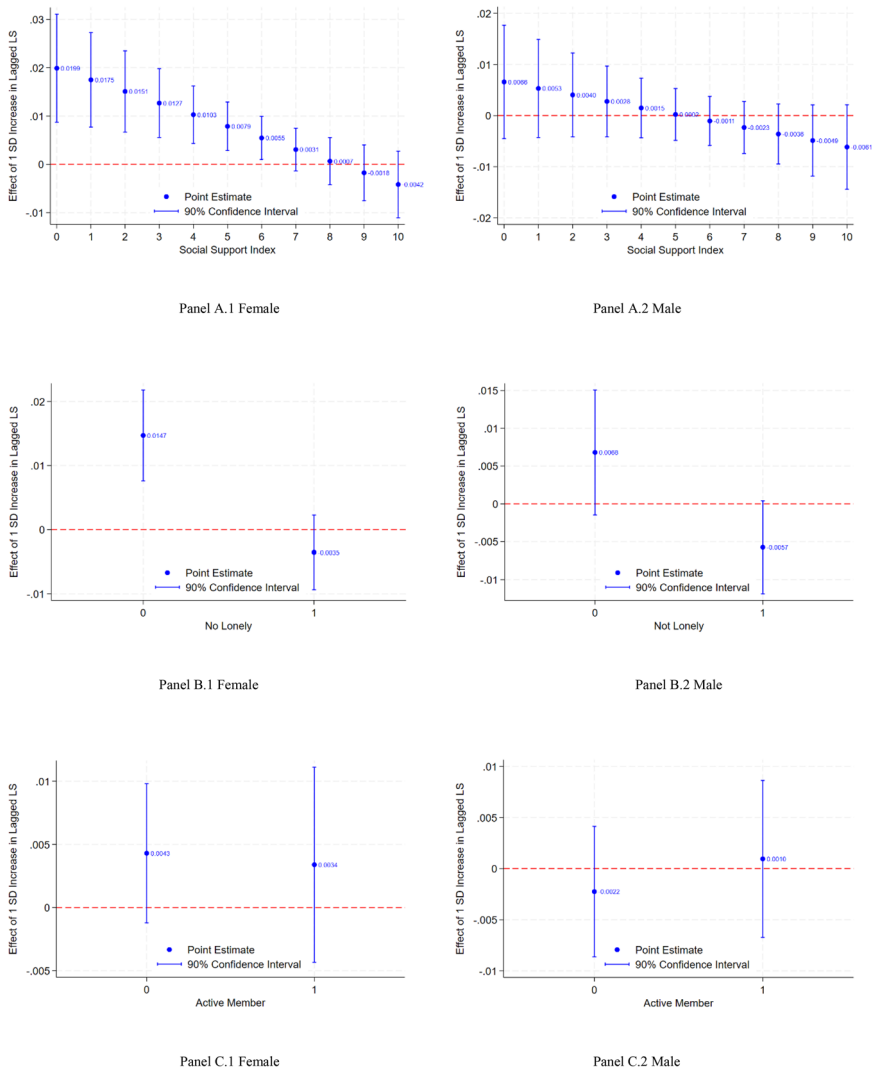


Fig. 2 Heterogeneity analysis by gender (outcome variable: total expenditures). Panel **A** The role of social support. Panel **B** The role of not lonely. Panel **C** The role of active membership.

To categorize age meaningfully, we define four age groups: 15–24 (younger individuals), 25–49 (lower middle-aged or prime-aged adults), 50–66 (upper middle-aged), and 67 and above (those who have reached retirement age). While no clear patterns emerge across age groups for the three spending outcomes, there are some interesting findings for each outcome individually. For instance, we observe, for total spending, both the youngest and the oldest groups enjoy significant moderating effects of social support and *Not Lonely* (Panels A.1 & 4 and Panels B.1 & 4 of Fig. 3). Among prime-age individuals, *Not Lonely* also significantly moderates the positive association between lagged life satisfaction and total spending (Panel B.2).

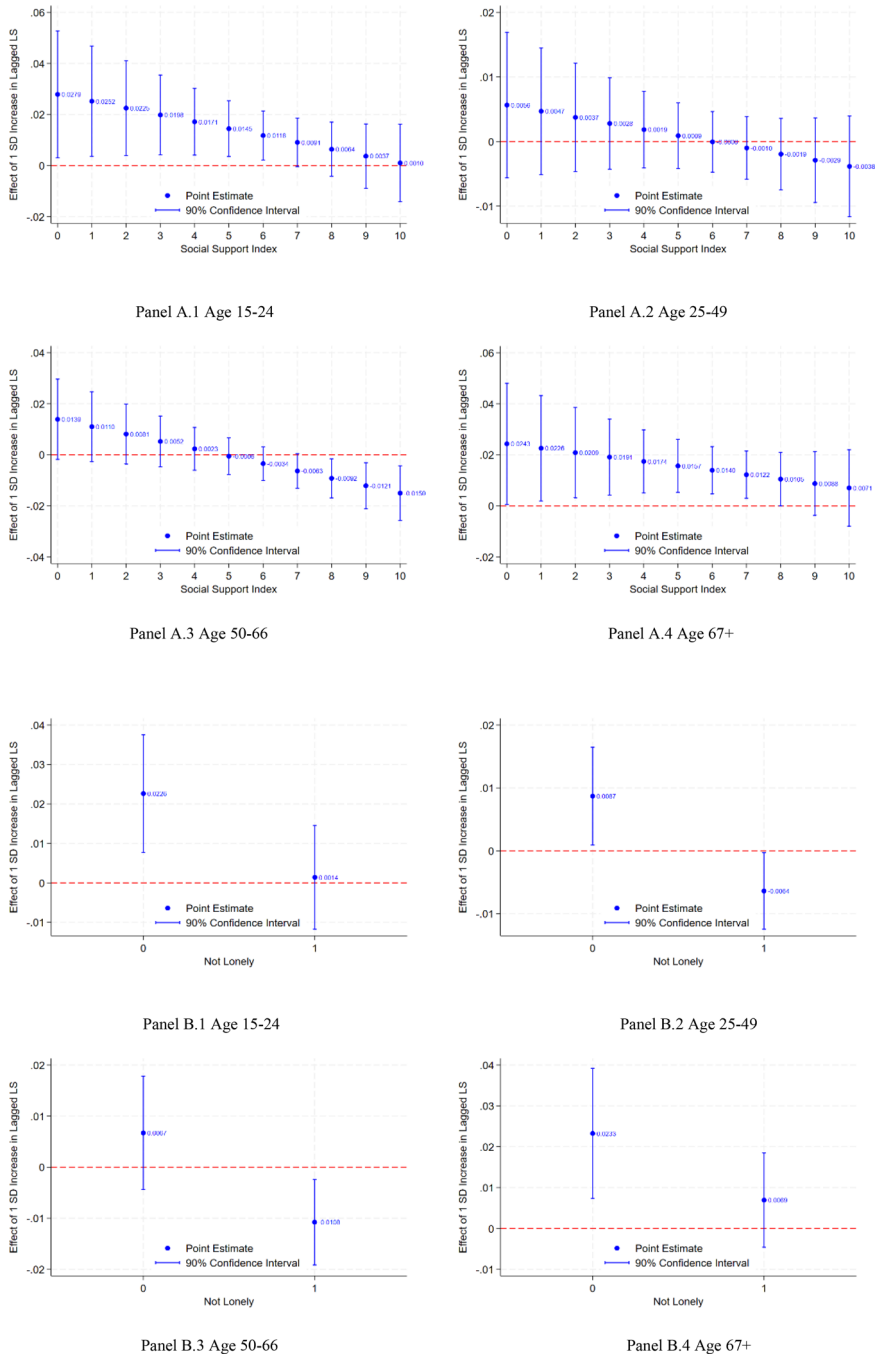
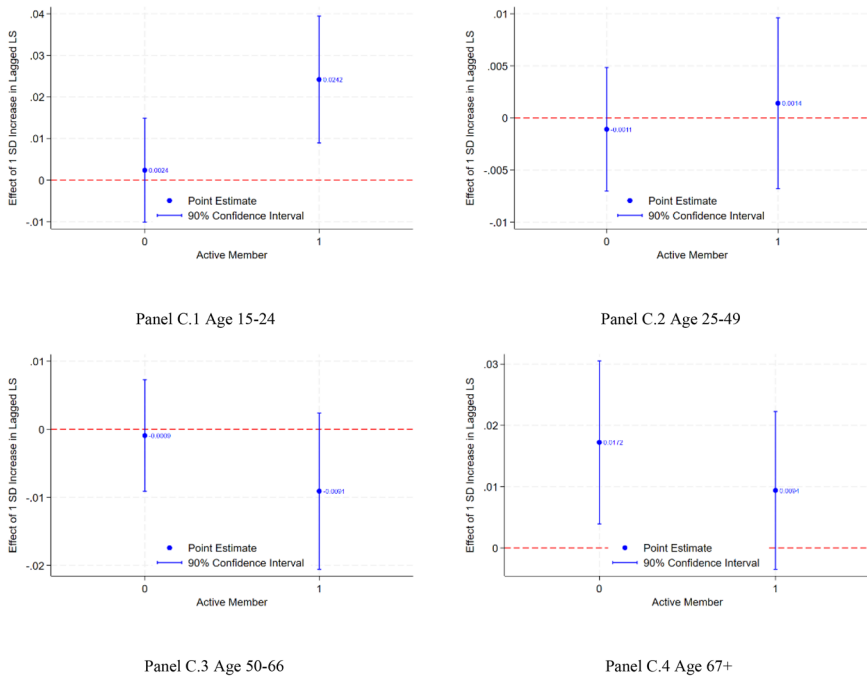


Fig. 3 Heterogeneity analysis by age (outcome variable: total expenditures). **Panel A** The role of social support. **Panel B** The role of not lonely. **Panel C** The role of active membership. Notes: The figure displays the estimates of $\beta + \rho^k \times SC_{it}^k$, along with 90% confidence intervals

**Fig. 3** (continued)

For upper middle-aged individuals, the association between lagged life satisfaction and total spending is not significant among individuals with low social support or high loneliness, but the relationships are negative and statistically significant among individuals with high social support or those who are not feeling lonely (Panel A.3 & B.3). Regarding the role of active membership, we also observe the moderating effect of active membership is significant among people in the oldest age group (Panel C.1). Interestingly, in the youngest age group, the relationship between lagged life satisfaction and total spending is statistically insignificant for individuals who are not active members but, for those who are active members, it is positive and statistically significant (Panel C.4).

For conspicuous spending, we find that the moderating effects of social support and *Not Lonely* are statistically significant only among the oldest age group (those who have reached retirement age), while the moderating effect of active membership is significant only for individuals in the prime-age group (Appendix Fig. A5). For basic spending, the moderating effect of social support is significant for both the youngest group (15–24) and the upper middle-aged group (Panel A of Appendix Fig. A6). *Not Lonely*, on the other hand, significantly moderates the relationship between lagged life satisfaction and basic spending across all age groups, although the strength of the effect varies (Panel B). Interestingly, with respect to active membership, the relationship between lagged life satisfaction and basic spending is positive and statistically significant among active members in the youngest age group but remains insignificant for their non-active counterparts (Panel C.1). It is also worth noting that in all

cases, the age differences in the moderating effects are not statistically significant, as indicated by the overlapping confidence intervals across subpanels.¹⁸

5 Limitations

Our findings should be interpreted in light of a few limitations. First, although we employ individual fixed-effects models and use lagged life satisfaction to mitigate concerns about reverse causality, the analysis remains observational and does not allow for strong causal inference. Endogeneity may still arise from unobserved time-varying factors—such as changes in aspirations, financial expectations, or stressful life events—that simultaneously affect SWB, social capital, and consumption expenditures. Besides, the relationships among these variables are likely reciprocal. Consumption may influence SWB through material living conditions or social comparison, while social capital may both shape and be shaped by well-being and spending behavior. The use of lagged explanatory variables helps reduce concerns about simultaneity, but it cannot fully eliminate dynamic feedback effects.

Second, the study relies on self-reported measures of life satisfaction, social capital, and expenditures, which may be subject to reporting bias and measurement error. In addition, there are potential concerns regarding the construct validity of the social capital indicators. For example, the social support index is based on subjective perceptions of interpersonal relationships and may partially overlap conceptually with emotional well-being, complicating efforts to clearly distinguish relational resources from broader psychosocial states. Likewise, loneliness is captured using a single survey item, which may not fully capture the complexity of social isolation.

Third, the classification of expenditures into conspicuous and basic categories inevitably involves some degree of arbitrariness. Although the baseline categorization follows prior literature and the robustness checks yield broadly consistent results, some expenditure categories may simultaneously serve functional and positional purposes depending on context and individual preferences. The interpretation of conspicuous consumption should therefore be treated with caution.

Fourth, while the findings are consistent with the hypothesis that stronger social ties may weaken the association between well-being and consumption, the underlying mechanisms cannot be directly identified with the available data. The moderating effects of social capital may reflect reduced social comparison, greater emotional support, differences in coping strategies, or broader lifestyle preferences. Future research using stronger causal identification strategies and richer measures of social interactions could help clarify these mechanisms further.

Finally, our analysis focuses on Australia, and the results may not be fully generalizable. They may plausibly be extended to other developed English-speaking countries—such as the United States, Canada, New Zealand, and the United Kingdom—which share broadly similar institutional frameworks and cultural contexts. However, the moderating role of social capital may differ in societies characterized by stronger collectivist norms or distinct consumption patterns. Future cross-country

¹⁸ This is also confirmed by pooled regressions with formal interaction tests across age groups.

comparative research would therefore be valuable in assessing the broader external validity of these findings.

6 Conclusions

This study investigated how subjective well-being (SWB), specifically life satisfaction, is associated with consumption expenditures, and, more importantly, the moderating role of social capital. Using panel data from the HILDA Survey in Australia and fixed effects regressions, we focused on both conspicuous and basic forms of spending. Our analysis reveals that the association between life satisfaction and consumption expenditures is not uniform but depends significantly on individuals' social capital.

Among those with low social support or high loneliness, higher life satisfaction is associated with greater spending of different forms. The estimated coefficients are modest in magnitude but economically meaningful in the context of household expenditure behavior, particularly given that the estimates are identified after controlling for individual fixed effects and a rich set of time-varying covariates. The positive associations between SWB and spending weaken or even reverse among individuals with strong social ties or low levels of loneliness. Moreover, when social capital is low, the positive associations between life satisfaction and spending are systematically stronger for conspicuous spending than for total or basic spending, suggesting that social capital may be particularly important in moderating conspicuous forms of consumption. These results suggest that social capital plays a buffering role in the link between well-being and consumption. We also document a direct relationship between social capital and consumption expenditures, although the sign varies by consumption type. In general, higher social capital is associated with more conspicuous spending but less basic spending.

Our findings challenge the preconception that consumer spending is inherently linked to well-being. Instead, the study highlights how consumption may be driven by a scarcity of social relationships, suggesting that fostering social connections could enhance well-being without necessarily increasing consumption. This is encouraging news for the sustainability of modern societies because it indicates that promoting people's well-being and protecting the environment need not be in conflict.

To the extent that these findings are generalizable, they carry important policy implications. Strengthening social connections may help decouple well-being from consumption growth, thereby supporting more sustainable patterns of living without compromising people's well-being—a goal that has remained elusive for other approaches to environmental protection, such as degrowth. Efforts to enhance both well-being and environmental sustainability could benefit from greater investment in social infrastructure—such as community centers, inclusive public spaces, and programs that foster civic engagement and reduce loneliness (Sarracino & O'Connor, 2025). Integrating social capital considerations into sustainability and well-being policy agendas could be a promising pathway toward more inclusive and environmentally responsible growth models.

Appendix

Appendix Figures

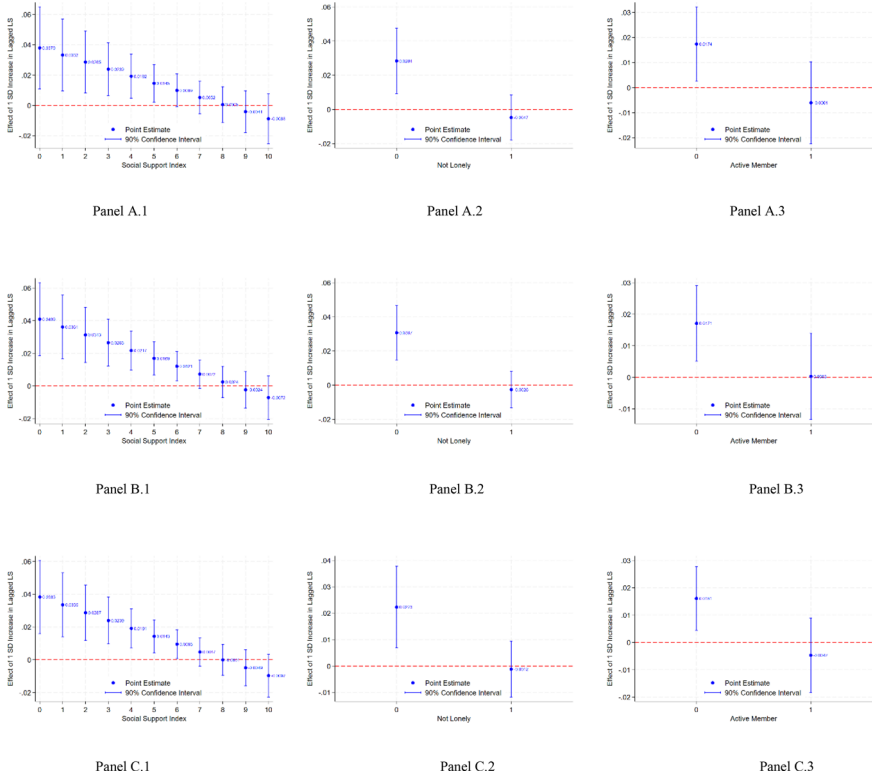


Fig. A1 Robustness checks (outcome variable: conspicuous expenditures). Panel **A** Definition by Friehe & Mechtel (2014). Panel **B** Education as conspicuous consumption. Panel **C** Tobacco as conspicuous consumption. Notes: The figure displays the estimates of $\beta + \rho^k \times SC_{it}^k$, along with 90% confidence intervals

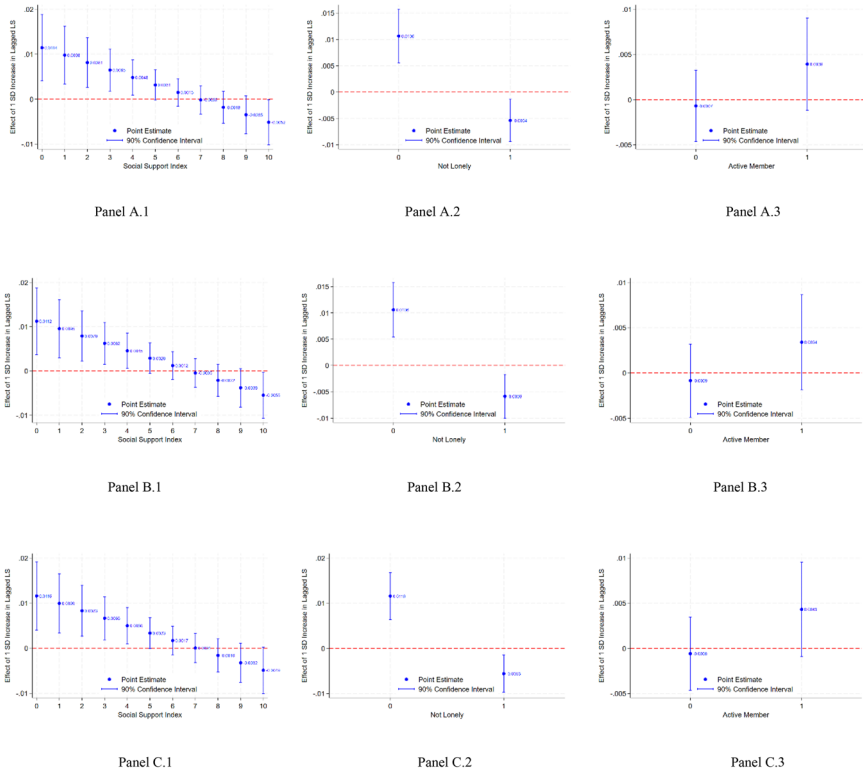


Fig. A2 Robustness checks (outcome variable: basic expenditures). Panel A Definition by Friehe & Mechtel (2014). Panel B Education as conspicuous consumption. Panel C Tobacco as conspicuous consumption. Notes: The figure displays the estimates of $\beta + \rho^k \times SC_{it}^k$, along with 90% confidence intervals

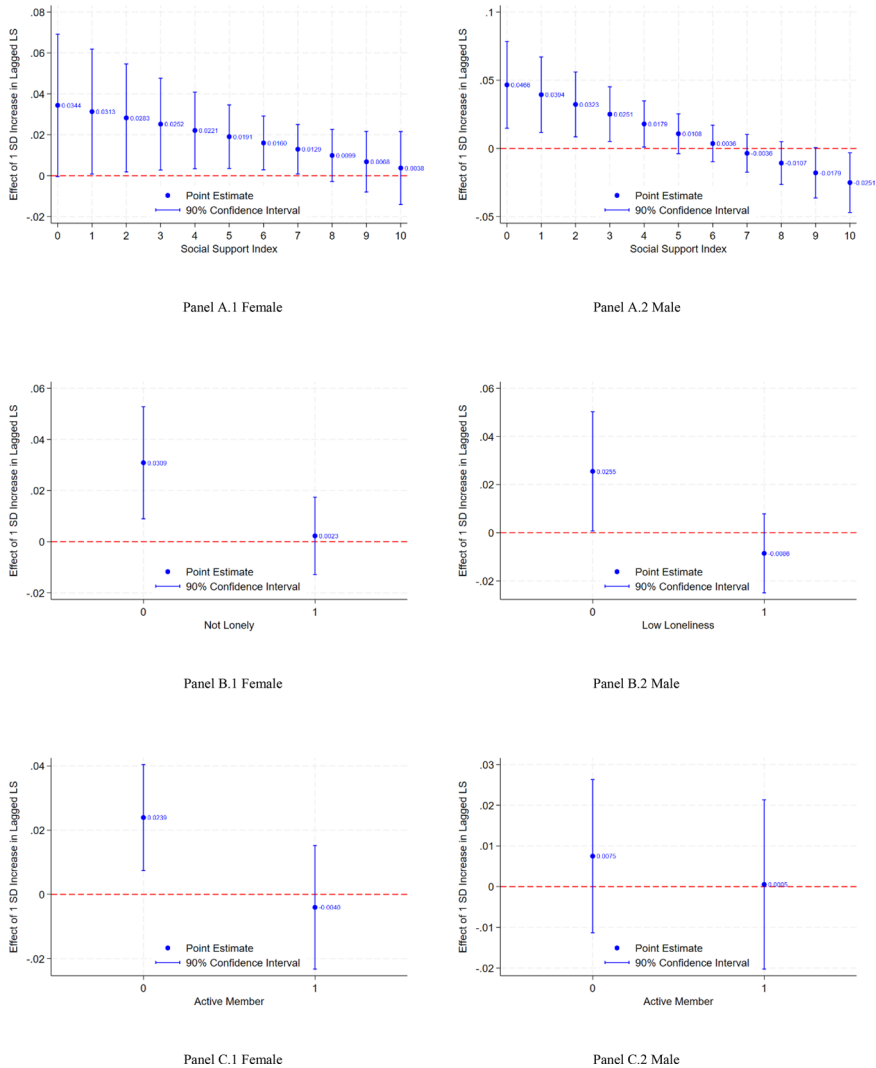


Fig. A3 Heterogeneity analysis by gender (outcome variable: conspicuous expenditures). Panel **A** The role of social support. Panel **B** The role of not lonely. Panel **C** The role of active membership. Notes: The figure displays the estimates of $\beta + \rho^k \times SC_{it}^k$, along with 90% confidence intervals

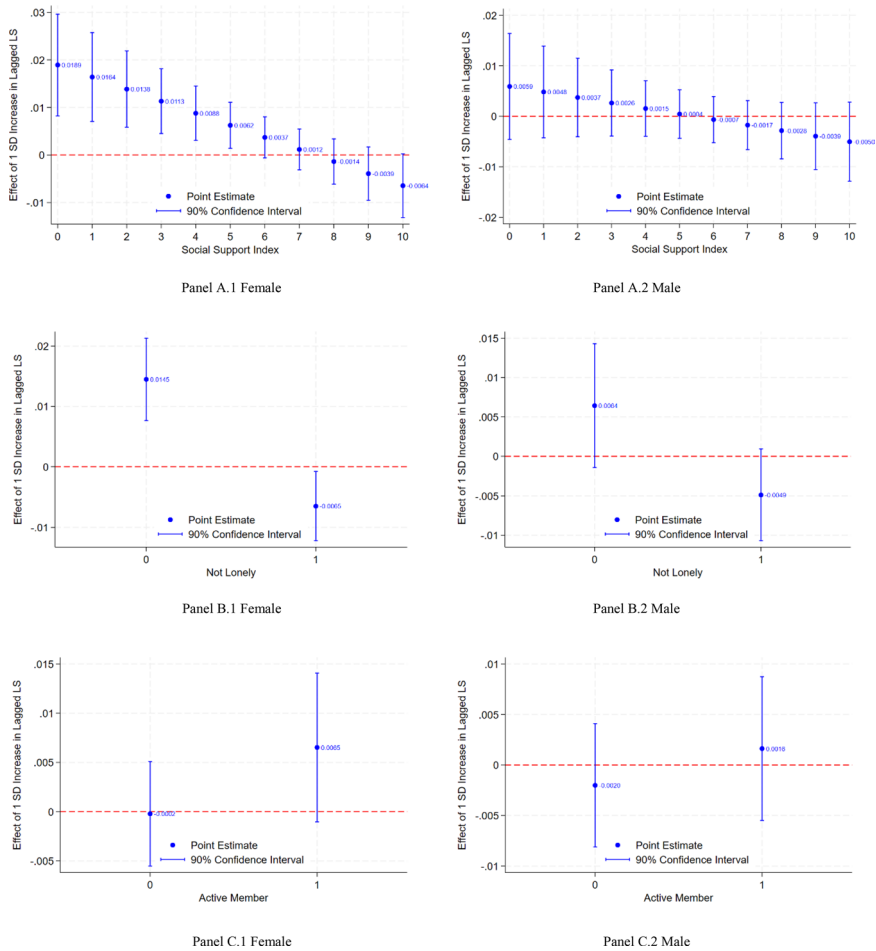


Fig. A4 Heterogeneity analysis by gender (outcome variable: basic expenditures). **Panel A** The role of social support. **Panel B** The role of not lonely. **Panel C** The role of active membership. Notes: The figure displays the estimates of $\beta + \rho^k \times SC_{it}^k$, along with 90% confidence intervals

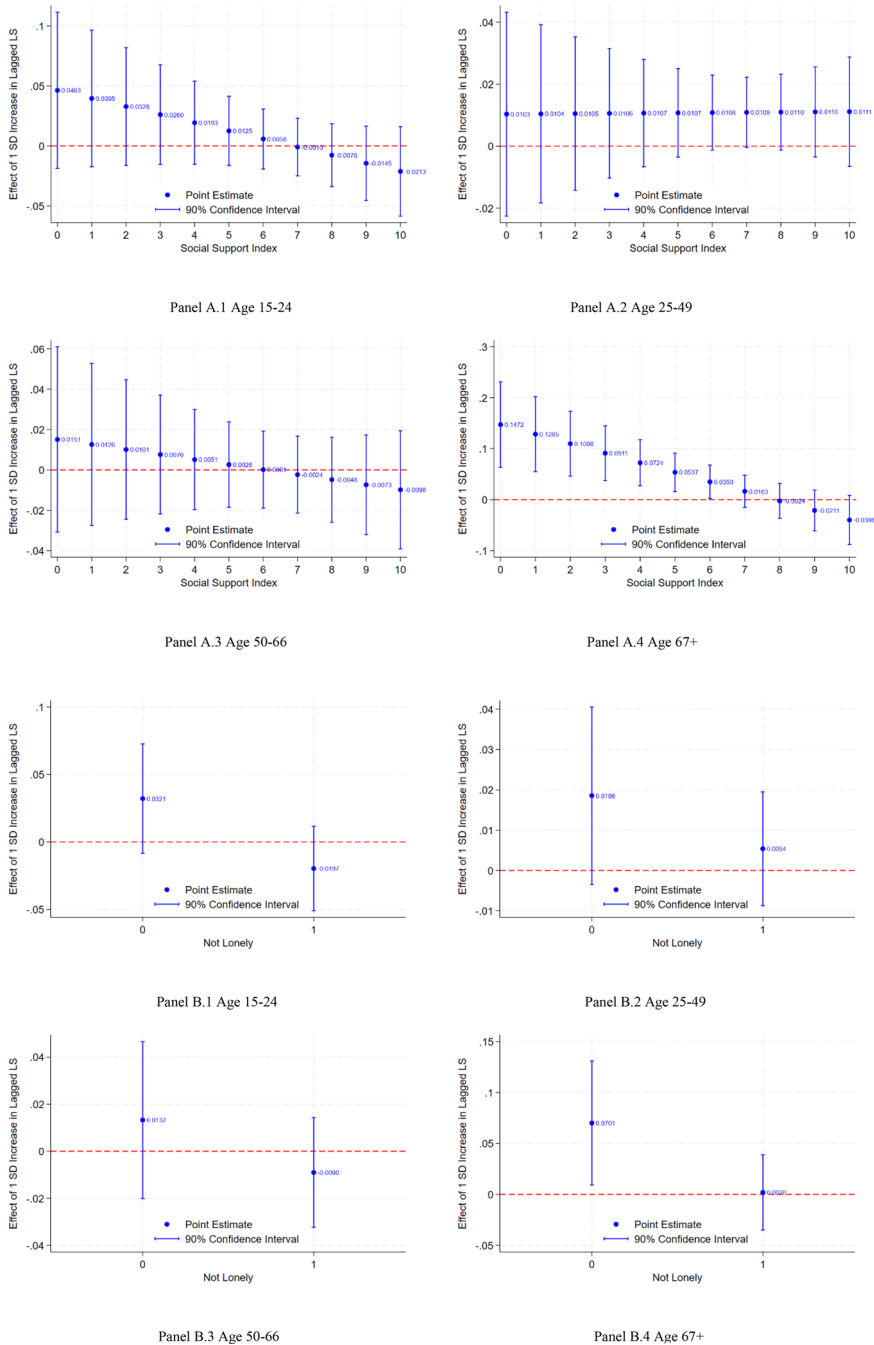


Fig. A5 Heterogeneity analysis by age (outcome variable: conspicuous expenditures). Panel **A** The role of social support. Panel **B** The role of not lonely. Panel **C** The role of active membership. Notes: The figure displays the estimates of $\beta + \rho^k \times SC_{it}^k$, along with 90% confidence intervals

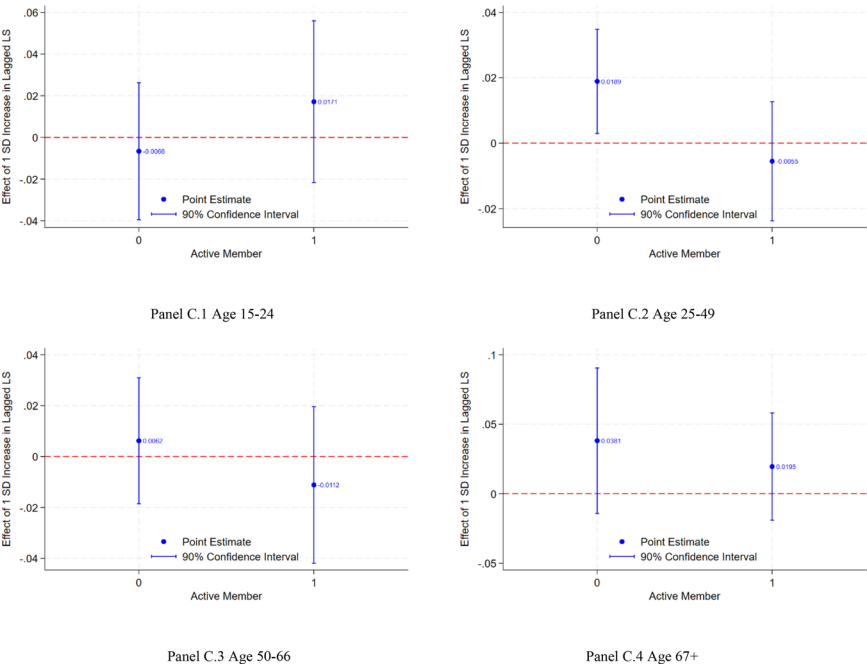


Fig. A5 (continued)

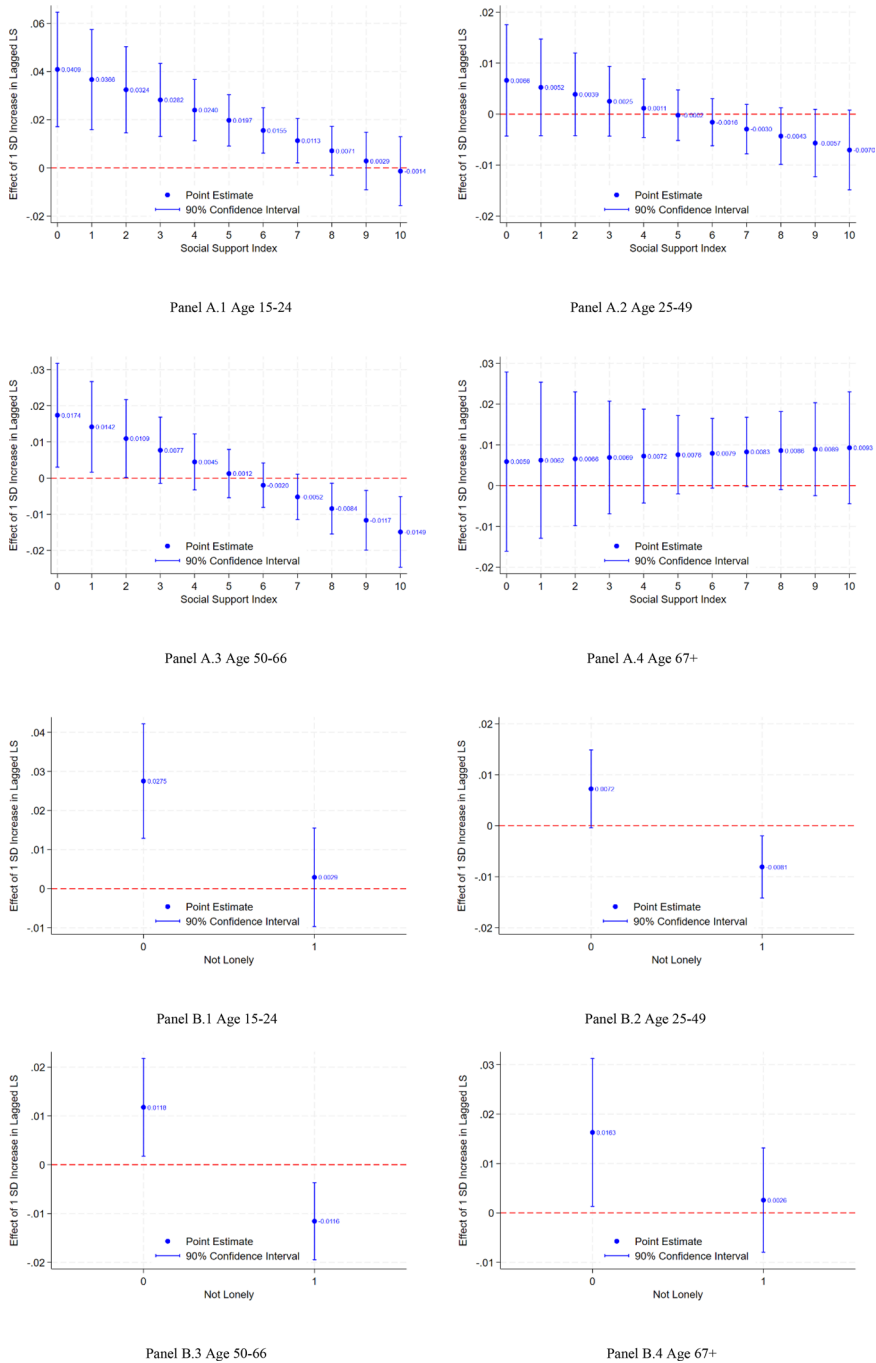


Fig. A6 Heterogeneity analysis by age (outcome variable: basic expenditures). **Panel A** The role of social support. **Panel B** The role of not lonely. **Panel C** The role of active membership. Notes: The figure displays the estimates of $\beta + \rho^k \times SC^k_{it}$, along with 90% confidence intervals

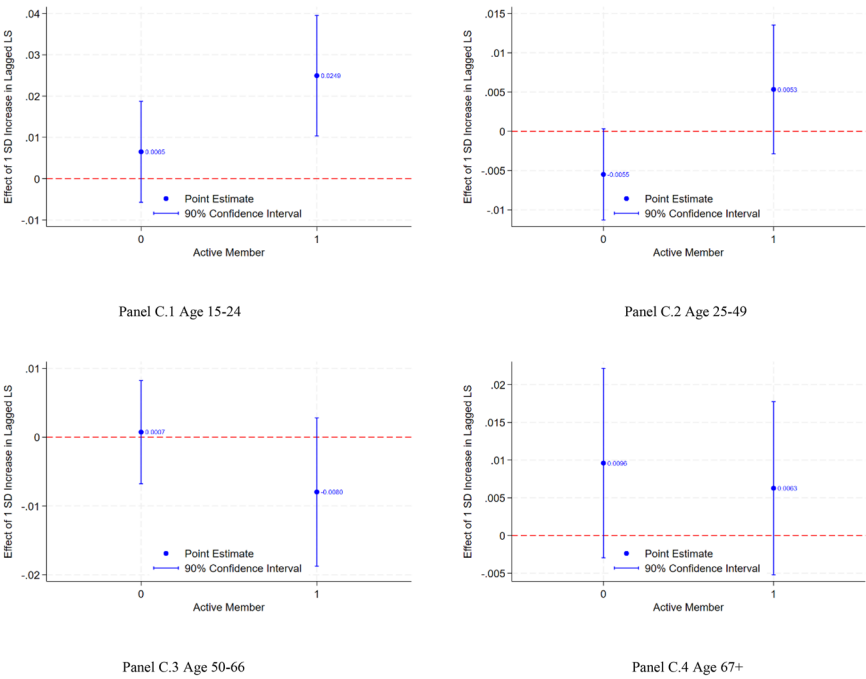


Fig. A6 (continued)

Appendix Tables

Table A1 Consumption categories

Category	Definition
Vehicle purchases	Buying brand new or used motor vehicles, motorbikes, or other
Clothing and footwear	Men's, women's and children's clothing and footwear
Furniture and household appliances	Any bedroom and outdoor furniture (do not include floor coverings), household appliances, such as ovens, fridges, washing machines, and air conditioners
Recreational devices and equipment	Computers and related devices (such as printers, digital cameras, iPods, MP3 players, electronic organizers and game consoles), televisions, home entertainment systems, and other audio visual equipment (such as DVD players and video cameras)
Meals eaten out	Restaurants, take-away food, and bought lunches and snacks. Do not include alcohol
Alcohol	Alcohol consumed at home or with meals eaten out
Holidays	Holidays and holiday travel costs (include short & long holidays)
Education	Education fees paid to schools, universities, and other education providers (include private tuition fees)
Tobacco	Cigarettes and other tobacco products
Groceries	Food, cleaning products, pet food, and personal care products, excluding alcohol or tobacco
Housing	Rent, mortgage and repairs, and renovations and maintenance to your home
Public transportation	Public transport and taxis
Motor vehicle repairs and maintenance	Motor vehicle repairs and maintenance (include regular servicing)
Motor vehicle fuels and engine oil	Motor vehicle fuel (petrol, diesel, LPG) and engine oil
Phone rent and calls, and internet charges	Telephone rent and calls (include rent and charges on mobile phones), and internet charges
Health care (health insurance included) and child care	Health care spending includes fees paid to doctors, dentists, opticians, physiotherapists, chiropractors and any other health practitioner, medicines, prescriptions and pharmaceuticals (include alternative medicines.), and private health insurance; child care spending includes child care costs for children while parents work, during school holidays, and non-employment related childcare, for school-aged and not yet at school children. Assumes 12 weeks school holidays a year for school aged children
Home utilities	Electricity bills, gas bills, and other heating fuel (such as firewood and heating oil)
Other Insurance	Home and contents, and motor vehicle insurance

Table A2 Consumption expenditures and life satisfaction (with estimated coefficients for selected control variables)

Variables	(1) Ln (total household expenditures per capita)	(2) Ln (total household conspicuous expenditures per capita)	(3) Ln (total household basic expenditures per capita)
Lagged standardized life satisfaction	0.00195 (0.00197)	0.0101* (0.00555)	0.00111 (0.00189)
Ln (total household income per capita)	0.0182*** (0.00280)	0.0418*** (0.00660)	0.0109*** (0.00258)
Age 25–34	0.0624*** (0.0193)	0.0776 (0.0502)	0.0762*** (0.0190)
Age 35–44	0.0417* (0.0253)	0.00338 (0.0643)	0.0743*** (0.0251)
Age 45–54	0.0477 (0.0297)	0.0528 (0.0758)	0.0651** (0.0292)
Age 55–64	0.0670* (0.0350)	0.107 (0.0906)	0.0686** (0.0342)
Age 65–74	0.200*** (0.0454)	0.181 (0.126)	0.213*** (0.0447)
Age 75–	0.174*** (0.0523)	0.0535 (0.150)	0.201*** (0.0503)
High school	-0.0533*** (0.0178)	-0.0706 (0.0490)	-0.0598*** (0.0177)
Vocational degree	0.0236 (0.0237)	0.0343 (0.0655)	-0.00521 (0.0227)
Bachelor's degree or above	0.0664* (0.0398)	0.114 (0.106)	-0.00696 (0.0366)
Separated, divorced, or widowed	0.219*** (0.0227)	0.127** (0.0589)	0.235*** (0.0221)
Never married	0.0883*** (0.0199)	0.00300 (0.0448)	0.0851*** (0.0195)
Part-time employed	-0.0288*** (0.00867)	-0.0605*** (0.0211)	-0.0241*** (0.00857)
Unemployed	-0.0923*** (0.0153)	-0.217*** (0.0492)	-0.0833*** (0.0150)
Not in the labour force	-0.0655*** (0.0112)	-0.125*** (0.0297)	-0.0673*** (0.0109)
Children (age ≤ 14) in the household	-0.253*** (0.0118)	-0.248*** (0.0262)	-0.239*** (0.0115)
Older adults (age ≥ 65) in the household	-0.240*** (0.0250)	-0.218*** (0.0698)	-0.251*** (0.0261)
Long-term health condition	-0.00524 (0.00698)	0.00337 (0.0206)	-0.00223 (0.00640)
Observations	45,693	45,693	45,693

Table A2 (continued)

	(1)	(2)	(3)
Variables	Ln (total household expenditures per capita)	Ln (total household conspicuous expenditures per capita)	Ln (total household basic expenditures per capita)
R-squared	0.048	0.010	0.050
Number of Individuals	11,750	11,750	11,750

Robust standard errors clustered at the individual level in parentheses

The controls not reported include individual fixed effects, region fixed effects, wave fixed effects, and month fixed effects

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A3 Basic consumption expenditures and life satisfaction: the moderating role of social capital (HILDA 2006–2022)

Variables	Ln (total household basic expenditures per capita)		
	(1)	(2)	(3)
Lagged standardized life satisfaction	0.00329 (0.00216)	0.00294** (0.00145)	0.00175 (0.00118)
Social support index	0.00103* (0.000529)		
Lagged standardized life satisfaction*Social support index	-0.000293 (0.000314)		
Not lonely		-0.00189 (0.00248)	
Lagged standardized life satisfaction*Not lonely		-0.00222 (0.00187)	
Active member			-0.00279 (0.00289)
Lagged standardized life satisfaction*Active member			-0.000370 (0.00195)
Observations	215,732	215,732	215,732
R-squared	0.080	0.080	0.080
Number of Individuals	23,070	23,070	23,070

Robust standard errors clustered at the individual level in parentheses

The control variables are the same as those in Table 3

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A4 18 specific categories of consumption expenditures and life satisfaction: the role of social capital

Panel A The Role of Social Support

		Lagged stan- dardized life satisfaction	Social support index	Lagged stan- dardized life satisfaction*Social support index	Observations	R-squared	Num- ber of indi- viduals
(1)	Ln (expenditures on vehicle purchases per capita)	0.004	(0.047) 0.003	(0.011) -0.001	(0.007) 45,693	0.005	11,750
(2)	Ln (expenditures on clothing and footwear per capita)	-0.004	(0.022) 0.006	(0.005) 0.002	(0.003) 45,693	0.005	11,750
(3)	Ln (expenditures on furniture and household appliances per capita)	-0.004	(0.042) 0.029***	(0.010) 0.001	(0.006) 45,693	0.009	11,750
(4)	Ln (expenditures on recreational devices and equipment per capita)	0.090**	(0.036) 0.018**	(0.009) -0.015***	(0.005) 45,693	0.006	11,750
(5)	Ln (expenditures on meals out per capita)	-0.002	(0.028) 0.003	(0.006) 0.001	(0.004) 45,693	0.007	11,750
(6)	Ln (expenditures on alcohol per capita)	-0.001	(0.026) -0.007	(0.006) 0.001	(0.004) 45,693	0.008	11,750
(7)	Ln (expenditures on holidays per capita)	0.077**	(0.033) 0.025***	(0.008) -0.005	(0.005) 45,693	0.007	11,750
(8)	Ln (expenditures on education per capita)	0.049*	(0.026) 0.005	(0.006) -0.007*	(0.004) 45,693	0.022	11,750
(9)	Ln (expenditures on tobacco per capita)	-0.009	(0.025) -0.007	(0.006) 0.001	(0.003) 45,693	0.005	11,750
(10)	Ln (expenditures on groceries per capita)	0.003	(0.010) -0.000	(0.002) 0.000	(0.001) 45,693	0.007	11,750
(11)	Ln (expenditures on housing per capita)	0.019	(0.025) -0.006	(0.006) -0.002	(0.004) 45,693	0.007	11,750
(12)	Ln (expenditures on public transportation per capita)	-0.017	(0.028) -0.005	(0.006) 0.001	(0.004) 45,693	0.014	11,750
(13)	Ln (expenditures on motor vehicle repairs and maintenance per capita)	0.033	(0.023) 0.004	(0.005) -0.001	(0.003) 45,693	0.006	11,750
(14)	Ln (expenditures on motor vehicle fuels and engine oil per capita)	0.008	(0.018) 0.005	(0.004) 0.000	(0.003) 45,693	0.009	11,750
(15)	Ln (expenditures on phone rent and calls, and internet charges per capita)	-0.003	(0.014) -0.003	(0.003) 0.000	(0.002) 45,693	0.007	11,750
(16)	Ln (expenditures on health care (health insurance included) and childcare per capita)	0.038***	(0.018) -0.005	(0.004) -0.005*	(0.002) 45,693	0.011	11,750

Table A4 (continued)

Panel A The Role of Social Support						
	Lagged standardized life satisfaction	Social support index	Lagged standardized life satisfaction*Social support index	Observations	R-squared	Number of individuals
(17) Ln (expenditures on home utilities per capita)	0.056*** (0.015)	-0.002 (0.020)	-0.007*** (0.004)	45,693 (0.002)	0.008	11,750
(18) Ln (expenditures on other insurance per capita)	0.040*** (0.020)	0.010*** (0.005)	-0.005* (0.005)	45,693 (0.003)	0.008	11,750
Panel B The Role of Not Lonely						
	Lagged standardized life satisfaction	Not lonely	Lagged standardized life satisfaction*Not lonely	Observations	R-squared	Number of individuals
(1) Ln (expenditures on vehicle purchases per capita)	0.021 (0.031)	-0.056 (0.015)	-0.037 (0.053)	45,693 (0.042)	0.005	11,750
(2) Ln (expenditures on clothing and footwear per capita)	-0.005 (0.015)	-0.003 (0.028)	0.023 (0.024)	45,693 (0.019)	0.005	11,750
(3) Ln (expenditures on furniture and household appliances per capita)	-0.016 (0.024)	0.097*** (0.024)	0.033 (0.047)	45,693 (0.037)	0.009	11,750
(4) Ln (expenditures on recreational devices and equipment per capita)	0.045* (0.018)	0.057 (0.018)	-0.076** (0.040)	45,693 (0.032)	0.006	11,750
(5) Ln (expenditures on meals out per capita)	-0.012 (0.018)	0.024 (0.018)	0.024 (0.030)	45,693 (0.023)	0.007	11,750
(6) Ln (expenditures on alcohol per capita)	-0.020 (0.023)	-0.050* (0.023)	0.042* (0.029)	45,693 (0.022)	0.008	11,750
(7) Ln (expenditures on holidays per capita)	0.065*** (0.018)	0.096*** (0.018)	-0.028 (0.037)	45,693 (0.029)	0.007	11,750
(8) Ln (expenditures on education per capita)	0.025 (0.017)	0.057*** (0.017)	-0.035 (0.029)	45,693 (0.023)	0.022	11,750
(9) Ln (expenditures on tobacco per capita)	-0.017 (0.007)	-0.061** (0.007)	0.025 (0.025)	45,693 (0.021)	0.006	11,750
(10) Ln (expenditures on groceries per capita)	0.009 (0.017)	0.011 (0.017)	-0.006 (0.011)	45,693 (0.008)	0.007	11,750
(11) Ln (expenditures on housing per capita)	0.042*** (0.017)	0.008 (0.017)	-0.057*** (0.028)	45,693 (0.023)	0.007	11,750

Table A4 (continued)

Panel B The Role of Not Lonely						
	Lagged stan- dardized life satisfaction	Not lonely	Lagged stan- dardized life satisfaction*Not lonely	Observations	R-squared	Num- ber of indi- viduals
(12) Ln (expenditures on public transportation per capita)	-0.026	(0.018) -0.037	(0.029) 0.029	(0.024) 45,693	0.014	11,750
(13) Ln (expenditures on motor vehicle repairs and maintenance per capita)	0.037**	(0.016) 0.026	(0.025) -0.017	(0.020) 45,693	0.006	11,750
(14) Ln (expenditures on motor vehicle fuels and engine oil per capita)	0.019	(0.012) 0.012	(0.020) -0.017	(0.016) 45,693	0.009	11,750
(15) Ln (expenditures on phone rent and calls, and internet charges per capita)	-0.005	(0.009) -0.025	(0.016) 0.005	(0.012) 45,693	0.007	11,750
(16) Ln (expenditures on health care (health insurance included) and childcare per capita)	0.006	(0.012) -0.027	(0.018) 0.003	(0.015) 45,693	0.011	11,750
(17) Ln (expenditures on home utilities per capita)	0.037***	(0.009) -0.008	(0.016) -0.041***	(0.012) 45,693	0.008	11,750
(18) Ln (expenditures on other insurance per capita)	0.017	(0.014) 0.031	(0.021) -0.013	(0.017) 45,693	0.008	11,750
Panel C The Role of Active Membership						
	Lagged stan- dardized life satisfaction	Active member	Lagged stan- dardized life satisfaction*Active member	Observations	R-squared	Num- ber of indi- viduals
(1) Ln (expenditures on vehicle purchases per capita)	0.006	(0.026) 0.074	(0.063) -0.021	(0.043) 45,693	0.005	11,750
(2) Ln (expenditures on clothing and footwear per capita)	0.018	(0.012) 0.113***	(0.027) -0.025	(0.018) 45,693	0.005	11,750
(3) Ln (expenditures on furniture and household appliances per capita)	-0.009	(0.022) 0.016	(0.052) 0.032	(0.038) 45,693	0.009	11,750

Table A4 (continued)

Panel C The Role of Active Membership						
	Lagged stan- dardized life satisfaction	Active member	Lagged stan- dardized life satisfaction*Active member	Observations	R-squared	Num- ber of indi- viduals
(4)	Ln (expenditures on recreational devices and equipment per capita)	-0.012 (0.019)	0.120*** (0.045)	0.029 (0.032)	0.006	11,750
(5)	Ln (expenditures on meals out per capita)	-0.008 (0.014)	0.083*** (0.032)	0.024 (0.023)	0.007	11,750
(6)	Ln (expenditures on alcohol per capita)	0.012 (0.014)	0.010 (0.032)	-0.018 (0.021)	0.008	11,750
(7)	Ln (expenditures on holidays per capita)	0.043*** (0.018)	0.135*** (0.042)	0.011 (0.028)	0.007	11,750
(8)	Ln (expenditures on education per capita)	0.007 (0.014)	0.060* (0.036)	-0.007 (0.023)	0.022	11,750
(9)	Ln (expenditures on tobacco per capita)	-0.007 (0.013)	-0.023 (0.029)	0.012 (0.019)	0.005	11,750
(10)	Ln (expenditures on groceries per capita)	0.003 (0.005)	0.005 (0.012)	0.006 (0.009)	0.007	11,750
(11)	Ln (expenditures on housing per capita)	-0.001 (0.013)	-0.032 (0.032)	0.025 (0.023)	0.007	11,750
(12)	Ln (expenditures on public transportation per capita)	-0.022 (0.014)	-0.002 (0.034)	0.036 (0.023)	0.014	11,750
(13)	Ln (expenditures on motor vehicle repairs and maintenance per capita)	0.034*** (0.012)	0.052* (0.029)	-0.021 (0.019)	0.006	11,750
(14)	Ln (expenditures on motor vehicle fuels and engine oil per capita)	0.007 (0.010)	0.025 (0.023)	0.006 (0.015)	0.009	11,750
(15)	Ln (expenditures on phone rent and calls, and internet charges per capita)	-0.011 (0.008)	0.017 (0.017)	0.023*** (0.011)	0.007	11,750
(16)	Ln (expenditures on health care (health in- surance included) and childcare per capita)	0.008 (0.009)	0.042*** (0.020)	-0.001 (0.014)	0.011	11,750

Table A4 (continued)

Panel C The Role of Active Membership

		Lagged stan- dardized life satisfaction	Active member	Lagged stan- dardized life satisfaction*Active member	Observations	R-squared	Num- ber of indi- viduals
(17)	Ln (expenditures on home utilities per capita)	0.014*	(0.007) 0.046**	(0.018) -0.003	(0.012) 45,693	0.008	11,750
(18)	Ln (expenditures on other insurance per capita)	0.010	(0.010) 0.048**	(0.024) -0.002	(0.016) 45,693	0.008	11,750

Robust standard errors clustered at the individual level in parentheses

The control variables are the same as those in Table 3

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A5 Consumption expenditures, life satisfaction, and social capital

Variables	Ln (total household expenditures per capita)			Ln (total household conspicuous expenditures per capita)			Ln (total household basic expenditures per capita)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lagged standardized life satisfaction	0.00194 (0.00197)	0.00195 (0.00197)	0.00190 (0.00197)	0.0101* (0.00555)	0.0101* (0.00555)	0.00993* (0.00554)	0.00110 (0.00189)	0.00111 (0.00189)	0.00109 (0.00189)
Social support index	-0.000690 (0.00115)			0.00708** (0.00330)			-0.00227** (0.00110)		
Not lonely		-0.00907* (0.00536)			0.00406 (0.0158)			-0.00899* (0.00517)	
Active member			0.0127** (0.00620)			0.0361** (0.0167)			0.00614 (0.00594)
Observations	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693
R-squared	0.048	0.048	0.048	0.010	0.010	0.010	0.050	0.050	0.050
Number of Individuals	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750

Robust standard errors clustered at the individual level in parentheses

The control variables are the same as those in Table 3

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A6 Robustness checks: different categorizations of consumption expenditures

Friche & Mechtel (2014)				Education as Conspicuous				Tobacco as Conspicuous										
Variables	Ln (total household conspicuous expenditures per capita)			Ln (total household basic expenditures per capita)	Ln (total household conspicuous expenditures per capita)			Ln (total household basic expenditures per capita)	Ln (total household conspicuous expenditures per capita)			Ln (total household basic expenditures per capita)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Lagged standardized life satisfaction	0.0222**	0.0284**	0.0174*	0.00580**	0.0106***	-0.000704	0.0235***	0.0307***	0.0171**	0.00586**	0.0106***	-0.000868	0.0230***	0.0223**	0.0161**	0.00580**	0.0116***	-0.000593
	(0.0108)	(0.0117)	(0.00902)	(0.00286)	(0.00309)	(0.00240)	(0.00900)	(0.00967)	(0.00728)	(0.00293)	(0.00316)	(0.00246)	(0.00886)	(0.00940)	(0.00708)	(0.00292)	(0.00316)	(0.00246)
Social support index	0.0284			-0.00332			0.00787			-0.00320			0.0120			-0.00438		
	(0.0189)			(0.00537)			(0.0152)			(0.00548)			(0.0147)			(0.00552)		
Lagged standardized life satisfaction*	-0.0252*			-0.00877**			-0.0235**			-0.00947**			-0.0274**			-		0.00837**
Social support index	(0.0139)			(0.00393)			(0.0116)			(0.00403)			(0.0114)			(0.00402)		
Not lonely		0.0271			-0.00967*			0.00506						-0.00337			-0.00830	
		(0.0181)			(0.00509)			(0.0153)						(0.0146)			(0.00521)	
Lagged standardized life satisfaction*		-0.0331**			-0.0160***			-0.0333***						-0.0235**			-0.0172***	
Not lonely		(0.0145)			(0.00405)			(0.0119)						(0.0117)			(0.00415)	
Active member			0.0545***			0.00640			0.0333**			0.00529			0.0341**			0.00686
			(0.0188)		(0.00585)				(0.0162)			(0.00597)			(0.0155)			(0.00601)

Table 10 (continued)

Variables	Friche & Meehl (2014)				Education as Conspicuous				Tobacco as Conspicuous									
	Ln (total household conspicuous expenditures per capita)				Ln (total household basic expenditures per capita)				Ln (total household conspicuous expenditures per capita)				Ln (total household basic expenditures per capita)					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Lagged standardized life satisfaction* Active member			-0.0234*			0.00463			-0.0168			0.00425			-0.0208*			0.00490
Observations	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693	45,693
R-squared	0.008	0.008	0.008	0.054	0.054	0.053	0.009	0.009	0.009	0.050	0.050	0.050	0.011	0.011	0.011	0.049	0.050	0.049
Number of individuals	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750	11,750

Robust standard errors clustered at the individual level in parentheses

The control variables are the same as those in Table 3

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A7 Consumption expenditures and life satisfaction: the moderating role of social capital (alternative measures of social support index and not lonely)

Variables	Ln (total household expenditures per capita)		Ln (total household conspicuous expenditures per capita)		Ln (total household basic expenditures per capita)	
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged standardized life satisfaction	0.0317***	0.0237***	0.0819**	0.0628***	0.0283***	0.0212***
	(0.0111)	(0.00684)	(0.0346)	(0.0223)	(0.0106)	(0.00648)
Social support index (10-item average)	-0.00348		0.0242**		-0.00698**	
	(0.00341)		(0.0108)		(0.00327)	
Lagged standardized life satisfaction*Social support index (10-item average)	-0.00548***		-0.0133**		-0.00502***	
	(0.00201)		(0.00610)		(0.00191)	
Not lonely (continuous)		-0.00236		0.00132		-0.00209
		(0.00157)		(0.00503)		(0.00150)
Lagged standardized life satisfaction* Not lonely (continuous)		-		-		-
		0.00407***		0.00988**		0.00376***
		(0.00121)		(0.00385)		(0.00115)
Observations	45,693	45,693	45,693	45,693	45,693	45,693
R-squared	0.048	0.048	0.010	0.010	0.050	0.050
Number of Individuals	11,750	11,750	11,750	11,750	11,750	11,750

Robust standard errors clustered at the individual level in parentheses

Social support index (10-item average) is constructed as the mean of ten items, with negatively worded items reverse-coded. Not lonely (continuous) is a continuous measure derived as a reverse-coded loneliness scale

The control variables are the same as those in Table 3

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

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Author contributions F.W.: Conceptualization, Methodology, Formal analysis, Data curation, Writing – original draft, Writing – review & editing, Visualization. F.S.: Conceptualization, Funding acquisition, Methodology, Writing – original draft, Writing – review & editing.

Data availability The data that support the findings of this study are available from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, subject to a formal request and approval process. Restrictions apply to the availability of these data, which were used under license for this study. Researchers interested in accessing HILDA data can obtain them through the official HILDA website: <https://melbourneinstitute.unimelb.edu.au/hilda>.

Declarations

Conflict of interests The authors declare no competing interests.

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