AN EMPIRICAL INVESTIGATION OF THE SUBJECTIVE FINANCIAL WELL-BEING AND LIFE SATISFACTION OF OLDER ADULTS IN VIETNAM

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ABSTRACT: *This research examined factors predicting the financial well-being of older people and how financial well-being was associated with life satisfaction among older adults in Vietnam using a national survey. We found that income, assets, health status, and demographic factors were significantly associated with older adults' financial well-being. The results also revealed that, for older adults, subjective financial well-being was positively associated with life satisfaction, but among the objective financial well-being indicators only the number of assets was directly related to life satisfaction. On the other hand, income might be indirectly related to life satisfaction through subjective financial well-being. The results were consistent across various measures of subjective financial well-being.*

KEYWORDS: *life satisfaction, subjective financial well-being, objective financial well-being, older adults, Vietnam*

INTRODUCTION

Measuring the level of life satisfaction and factors associated with it has attracted great attention from psychologists, economists, gerontologists, and policymakers in recent years. There are many different definitions of life satisfaction. Economists often focus on decision-making aspects and determine subjective well-being as a utility measure (López Ulloa et al. 2013), while

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psychologists define it as aggregated moment-to-moment experience or an attitude towards life with hedonic and eudemonic components (Deci–Ryan 2000). Veenhoven (1996) defined life satisfaction as the extent to which a person appreciates their overall quality of life, and Ellison et al. (1989) defined life satisfaction as the cognitive assessment of a relatively consistent ground state that is influenced by social factors. Most recently, Yeo–Lee (2019) identified life satisfaction as a cognitive assessment of a whole life, not referring to any specific aspect of life.

Life satisfaction is not only a measure of how people evaluate their lives, but the level of life satisfaction itself affects people's lives. Previous studies found close relationships between life satisfaction and health-related factors such as chronic illness, difficulty sleeping, pain, obesity, smoking, and anxiety (see, for instance, Strine et al. 2008). Boehm et al. (2015) found that frequent fluctuations in life satisfaction were particularly harmful to health and longevity. Also, Nakamura–Managi (2020) showed that citizens' life satisfaction could ultimately impact the comfort of city inhabitants.

For this reason, it has been argued that life satisfaction rather than income growth should be a major focus for policymakers when developing new socioeconomic policies. If income and financial well-being have little effect on the level of life satisfaction, there would be grounds for doubting the long-term effects of public policies and organizational practices that aim to lead to a change in satisfaction, and vice versa. Diener–Seligman (2004) also argued that welfare should be assessed more directly due to the large difference between income and life satisfaction. This difference was found both in the most advanced economies (Helliwell–Putnam 2005) and in developing countries (Easterlin et al. 2012). There is no evidence that an increase in life satisfaction might result from per-capita consumption improvement. Nakamura–Managi (2020) found that, although the subjective evaluation of a respondents' city of residence is positively associated with a life satisfaction indicator, the economic aspects of objective indicators are negatively associated with life satisfaction indicators. Pak (2020), using various measures of life satisfaction, evaluated the efficacy of the 2014 social pension reform in South Korea and found that there was insufficient evidence to conclude that satisfaction with health status, parent-child relationship, and overall quality of life were improved with a pension increase.

At the same time, researchers have found a connection between financial well-being and life satisfaction. Financial well-being is a relatively new concept in life satisfaction studies of the last few decades (Collins–Urban 2018). The Office of Financial Protection for Older Americans (OFPOA 2018) defined financial well-being as people's ability to meet current and ongoing financial obligations, to feel financially secure in the present and future, and to be able to make choices that allow them to enjoy life. Financial well-being is often evaluated through the subjective assessment of the adequacy of an individual's financial resources (Easterlin 2001). This concept captures the perceived appraisal of an individuals' general financial condition, regardless of their actual financial situation.

Financial well-being is an important variable that has been included in many studies about life satisfaction. Yeo–Lee (2019) argued that subjective financial well-being could be an important predictor of overall life satisfaction for individuals during the life cycle. Likewise, Patel–Wolfe (2019) found a positive association between life satisfaction and financial well-being, and this association was strengthened among those with greater financial skills. One piece of research identified that when older people had a positive financial situation (such as feeling safe about money, and having the freedom to choose now and in the future), they had greater satisfaction in life or a positive feeling about their lives (Hira et al. 1989). On the other hand, financial problems might hinder an individual's ability to live an independent life, meet social needs or satisfy desires, and compensate for reduced capacity for self-care. The assessment of subjective financial well-being reflects the potentially different economic incentive structures that individuals of different demographic groups face and has far-reaching implications for both public policy and private decision-making, especially in developing countries. Joo–Grable (2004) asserted that by increasing the understanding of factors that influence financial well-being, policy makers would be better able to efficiently improve the quality of life of individuals and their families.

In Vietnam, little has been done to study the relationship between subjective financial well-being and life satisfaction. Previous studies either focused on determinants associated with subjective financial well-being, such as Giang et al. (2016), or focused on other determinants associated with perceived life satisfaction, such as Tran et al. (2016), Nguyen et al. (2017), and Tran–Vu (2018). There has been no research into the relationship between financial well-being and life satisfaction. Therefore, using data from a national survey on older adults, this research fills this research gap by examining factors that may affect the financial well-being of older people and how financial well-being is associated with life satisfaction. It is structured as follows: The next section reviews studies on life satisfaction and financial well-being. The third section presents data and methodology, while the fourth section presents results and includes a discussion. The last section concludes the research by summarizing the main findings and discussing some policy recommendations.

LITERATURE REVIEW

Life satisfaction cannot be objectively and externally measured because it is correlated with variables such as income, health, and relationship quality, and each person may rate these variables differently. Therefore, a person with low income, poor health, and few close relationships can still be more satisfied with life than a wealthier and healthier person. Consequently, life satisfaction is usually captured by the individual self-assessment of one's satisfaction with life. Tambyah et al. (2010) argues that subjective well-being is a common measure of life satisfaction which is not based on criteria that researchers consider to be important. Subjective well-being is based on judgments involving individuals' perceptions of the factors that they consider to be the most valuable. Diener–Seligman (2004) define subjective well-being as the subjective appreciation of individuals of both positive and negative aspects of their lives. This evaluation includes individuals' perceptions of life happiness, comprising both positive emotions such as joy and pride and negative emotions such as pain and anxiety.

Measures of financial well-being should reflect an individual's situation, aspirations, and comparison with others (Chen–Spector 1991) and can be subjectively measured in a similar way to life satisfaction. For example, Easterlin et al. (2012) measured financial well-being by the question "How satisfied are you with your family's financial situation?". The subjective assessment of financial well-being also expresses a person's individual characteristics, such as personality, attitudes, knowledge, and skills (Woodyard–Robb 2016).

Zurlo (2009) measured financial well-being with two psychosocial questions that focus on respondents' current financial situation. The latter were asked to choose which responses to statements best described how they felt about their financial situation, including "How satisfied are you with your current financial situation?" and "Do you or your family have difficulty meeting your monthly bill payments?" Similarly, Yeo and Lee (2019) measured subjective financial well-being by asking the question: "Are you satisfied with your current financial situation?"

Zyphur et al. (2015) extended the concept of subjective financial well-being by asking both about the present and the future. Subjective financial well-being was measured by five questions asking participants about their financial situation in the present day and in about ten years in the future, concerning whether the participants and their family had more money than necessary, or sufficient for their needs. Examples of subjective measurements used to capture financial satisfaction/well-being are presented in Table 1.

Table 1. *Examples of subjective measurements used to assess financial satisfaction/ well-being*

	Example questions for the measurement of financial well-being	Research
1	"How satisfied are you with your family's financial situation?"	Easterlin et al. (2012)
2	"How satisfied are you with your current financial situation?" "Do you or your family have difficulty meeting your monthly bill payments?"	Zurlo (2009)
3	"Are you satisfied with your current financial situation?"	Yeo and Lee (2019)
4	"How would you rate your financial situation these days?" "Looking ahead 10 years into the future, what do you expect your financial situation will be like at that time?" "In general, would you say you (and your family living with you) have more money than you need, just enough for your needs, or not enough to meet your needs?"	Zyphur et al. (2015)
5	*Objective indicators* used to examine financial well-being: (a) labor force participation, (b) household income, (c) financial wealth, and (d) net home equity. *Subjective indicators* used to examine financial well-being: Whether the respondent (a) has difficulty meeting monthly payments (b) is satisfied with one's present financial situation.	Wilkinson (2016)
6	CFPB (Bureau of Consumer Financial Protection) Financial Well-Being Scale "This statement describes me ..." (1) I could handle a major unexpected expense. (2) I am securing my financial future. (3) Because of my money situation, I feel like I will never have the things I want in life. (4) I can enjoy life because of the way I'm managing my money. (5) I am just getting by financially (6) I am concerned that the money I have or will save won't last. "How often would you say . . .?" (7) Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month. (8) I have money left over at the end of the month (9) I am behind with my finances. (10) My finances control my life.	Collins and Urban (2020)
7	Questions were designed to calculate scores for three components of "overall financial well-being:" (1) Meeting everyday commitments (e.g., "How often do you run short of money for food and other regular expenses?") (2) Feeling comfortable (e.g., "How well do you think this statement fits you personally – My finances allow me to do the things I want and enjoy in life?") (3) Resilience for the future (e.g., "If your income fell by a third, for how long could you meet all your expenses without needing to borrow?")	Kempson et al. (2017)

Source: Authors' compilation

Financial well-being can indicate individuals' relative financial position in society. Such comparisons may indicate the level of general satisfaction with one's financial situation, expectations about one's future financial condition, and suggest awareness of the associated stresses and financial needs. However, various studies have shown that objective financial conditions and subjective financial well-being are separate concepts and do not always move in tandem. For example, DePianto (2011) found that personal income had different impacts on financial well-being and perceived relative income depending on individuals' race and gender. Plagnol (2011) found based on evidence from the US that, contrary to the common belief that financial well-being mainly depends on individuals' income, life-course financial satisfaction steadily increased from the thirties onwards, whereas life-course income showed an inverted U-pattern, with a peak at mid-life. Zyphur et al. (2015) used a sample of twins from the *Survey of Midlife Development* in the US and found that only men had higher subjective financial well-being when they had a higher income. Arber et al. (2014) used logistic regression analysis to investigate the relationship between income, subjective financial well-being, and the health of British people in mid-life and later life. Both income and subjective financial well-being were independently associated with health in mid-life, and it was particularly those with a lower income and greater subjective financial difficulties who were more liable to report "less than good" health. In later life, however, subjective financial well-being was associated with health, but the effect of income on health was mediated entirely through subjective financial well-being.

Given these conclusions, it may be concluded that subjective financial well-being and other measures of financial conditions (such as income or assets) are not identical, and it is meaningful to explore these concepts independently.

DATA AND METHODOLOGY

Data

In this study, we used the first-ever national survey on older adults in Vietnam; namely, the *Vietnam Aging Survey*, which was conducted in late 2011. The survey was designed and sampled following the *Population and Housing Census* in 2009 with a proportional-to-size approach to ensure that the information was representative of older people across the country. The survey was implemented with people aged 50 and over (defined as older adults) in six ecological regions throughout Vietnam in 12 provinces. The final sample contained 3,995 people.

In this sample, there were 2,350 women and 1,645 men, and 2,939 rural persons and 1,056 urban persons. In each of our models, the number of observations might vary and be lower due to missing values.

To measure life satisfaction, we used the question: "Overall, how satisfied would you say you are with your life?". The answers were based on a Likert scale which ranged from "1 – Very dissatisfied" to "5 – Very satisfied."

To measure subjective financial well-being, we used respondents' answers to three questions. The first question was "How sufficient is your income or support to meet your daily needs?" and possible answers included "1 – Rarely or never enough; 2 – Sometimes not enough, 3 – Enough, and 4 – More than enough." The second question was "What is your economic situation like compared to that of three years earlier?", to which there were five possible responses, including "1 – Much worse; 2 – Somewhat worse; 3 – About the same; 4 – Somewhat better; and 5 – Much better." The final question was "What is your financial situation like compared with [that of] others of your age in the neighbourhood?" to which there were five possible answers, similar to the second question. For all questions, the higher the score for each question, the better off the person was in terms of subjective financial well-being. It should be noted that the questions used in this study incorporate some comparison elements. The first question simply reflects a subjective evaluation of the respondents' financial situation, but the second and third questions involve reference points (i.e., the past and the other people). We created an index of general subjective financial well-being by adding up the points associated with these three answers to serve the purpose of a sensitivity test for the future measurement of financial well-being in relation to the survey.

To reflect the financial conditions of the individuals, we used responses to the request "Please let us know if your household has any of the following items.", where the individual could select from a list of 25 kinds of household assets, such as cars, bikes, or microwaves, to create a 'number-of-assets' variable. This list excludes highly liquid assets such as stocks, bonds, gold, or land. To measure income, we used the responses to the question: "What was the total annual income in the past 12 months of your household?" The value is adjusted for household size and classified into income groups.

Econometric model specification

In this research, we used two econometric equations to examine (1) factors associated with the subjective financial well-being of older adults, and (2) the impact of subjective financial well-being on the life satisfaction of older adults. Because subjective financial well-being was measured by four different variables, it resulted in eight models.

To examine factors affecting financial well-being, the following econometric equation was employed:

$$SFW_i=\beta_0+\beta_1 HFC+\beta_2 V_{1i}+\beta_3 V_{2i}+\varepsilon_i \quad (1)$$

Where:

– SFW_i is the level of subjective financial well-being of an older adult;
– *HFC* is a set of control variables reflecting households' financial conditions, including income of the household, and number of asset items in the household;
– V_{1i}: a set of control variables reflecting households' characteristics such as household size, living in a rural or urban area, living in the north or the south;
– V_{2i}: a set of control variables reflecting individuals' characteristics, such as age, gender, marital status, religion, regular worship, employment status, whether the older person has a grandchild, ethnicity, health status, social activity participation, compulsory education completion; and
– ε_i: an error term.

To examine the impact of subjective financial well-being on life satisfaction (*LS*), we used an econometric model in which life satisfaction was treated as a cardinal variable. The OLS method was applied to examine the relation between life satisfaction and subjective financial well-being, using the following equation:

$$LS=\gamma_0+\gamma_1 SFW+\gamma_2 HFC+\gamma_3 V_{1i}+\gamma_4 V_{2i}+\varepsilon_i \quad (2)$$

Where:

– *SFW* was measured using one of four variables; namely, (1) general subjective financial well-being index; (2) how well income can support daily needs; (3) economic situation as compared with the last three years; and (4) financial situation compared with others of the same age in the neighbourhood;
– *HFC*: a set of control variables that reflect households' financial conditions such as income of the households, and number of asset items in the household;
– V_{1i}: a set of control variables reflecting households' characteristics identical to those of Model 1; and
– V_{2i}: a set of control variables that reflect individuals' characteristics, identical to those of Model 1; and
– ε_i: an error term.

For all models that used equation 1 and equation 2 we used subjective financial well-being and life satisfaction as continuous variables. Therefore, multicollinearity issues had to be carefully checked to make sure that our OLS results were valid. In our research, we used the variance inflation factor test to check for the multicollinearity problem. Also, we checked for the heteroscedasticity problem using the Breusch–Pagan / Cook–Weisberg test. The results of these tests are presented in the *Appendix*.

RESULTS AND DISCUSSIONS

Factors associated with older adults' financial well-being

As previously mentioned, the financial well-being of older adults was captured through four different measures: the answers to three questions related to financial well-being, and an index of general subjective financial well-being that involved adding up the points associated with these three answers. The mean scores of the financial well-being measures are presented in Table 2. The descriptive statistics indicate how a typical older person in the dataset evaluates their financial well-being. The mean score for each question "How sufficient is your income or support to meet your daily needs?", "What is your economic situation like compared to that of three years earlier?" and "What is your financial situation like compared with [that of] others of your age in the neighbourhood?" were respectively 2.07, 2.98, and 2.48, showing that, on average, the typical older person was satisfied with his/her financial well-being. The mean score on the financial well-being index was 7.53.

Table 2. *Statistical description of financial well-being measures*

Variables	Obs. (N)	Mean	Std. Dev.	Min.	Max.
How sufficient is your income or support to meet your daily needs?	3,993	2.07	0.82	1	4
What is your economic situation like compared to that of three years earlier?	3,995	2.98	0.91	1	5
What is your financial situation like compared to [that of] others of your age in the neighbourhood?	3,990	2.48	0.95	1	5
Financial well-being index	3,988	7.53	2.03	3	14

Source: Authors' calculations, using VNAS 2011

Factors determining financial well-being are presented in Table 3. Variables related to the financial condition of the family (such as income and number of assets) were positively related to all variables representing subjective financial well-being.

Household size had statistically insignificant coefficients in the equation, thus this variable seemed to be uncorrelated to the financial well-being of older adults.

In comparison with older people in the central region, older adults in the northern region with equal individual and household characteristics on average had higher subjective financial well-being.

It is worth noting that urban older people had significantly lower subjective financial well-being than rural people. This might be explained by the fact that people in urban areas might have better financial literacy and greater financial needs so they might be more aware of and worried about their financial situation, resulting in lower subjective financial well-being. This finding is consistent with previous studies that showed that individuals tend to have greater desires relative to their current financial resources, which in turn can reduce their subjective financial well-being. Similar findings have also been reported in other studies (see, for instance, Tran–Vu (2018)).

Age was positively associated with subjective financial well-being indicators, showing that Vietnamese older people at more advanced ages tended to feel more satisfied with their financial situation than did Vietnamese older people of a younger age.

The findings showed that employment status was associated with higher general subjective financial well-being. This might reflect the fact that employment is a source of income for older people, which makes them feel more secure about their financial wellbeing. The results also showed that religious people tended to have worse financial well-being, while regular worship was not significantly associated with financial well-being.

Being of Kinh or Chinese ethnicity was associated with lower financial well-being, although older people in this group tended to have sufficient financial resources to meet their daily needs, a higher income, and a greater number of assets. Having fair health and good health were positively associated with all subjective financial well-being indicators.

It should be noted that because some questions used in this study incorporate some comparison elements, the predictor coefficients in different versions of the regression models showed different values. For example, when subjective financial well-being was measured using the answer to the question “What is your financial situation like compared to [that of] others of your age in the neighbourhood?”, the regression results were slightly different from those when subjective financial well-being was measured in line with answers to the questions related to financial sufficiency and comparison with the past. For example, factors such as being married, having grandchildren, or engaging in social activity were not significantly associated with subjective financial well-being measured according to sufficiency and time comparison, but were significantly and positively associated with subjective financial well-being measured according to neighbourhood comparison. Similarly, having completed compulsory education was statistically positively related to subjective financial well-being when measured by the financial sufficiency question only.

Table 3. *Factors affecting subjective financial well-being*

Variables	Model 1 Financial well-being index	Model 2 Financial well-being (Sufficiency)	Model 3 Financial well-being (Time comparison)	Model 4 Financial well-being (Neighbourhood comparison)
High income	1.083*** (0.096)	0.345*** (0.040)	0.335*** (0.049)	0.399*** (0.047)
Middle income	0.475*** (0.074)	0.097*** (0.031)	0.217*** (0.038)	0.161*** (0.036)
Asset number	0.203*** (0.010)	0.068*** (0.004)	0.039*** (0.005)	0.096*** (0.005)
Household size	-0.018 (0.045)	-0.002 (0.019)	0.041** (0.021)	-0.055** (0.025)
North	0.322*** (0.085)	-0.045 (0.035)	0.249*** (0.044)	0.112*** (0.042)
South	0.087 (0.086)	0.120*** (0.036)	-0.038 (0.046)	0.004 (0.044)
Urban	-0.668*** (0.072)	-0.066** (0.030)	-0.254*** (0.036)	-0.349*** (0.035)
Age	0.021*** (0.003)	0.010*** (0.001)	0.003* (0.001)	0.008*** (0.001)
Gender	-0.008 (0.063)	-0.025 (0.026)	0.008 (0.032)	0.007 (0.030)
Married	-0.014 (0.069)	-0.050* (0.029)	-0.041 (0.036)	0.077** (0.034)
Religion	-0.205** (0.080)	-0.042 (0.034)	-0.105** (0.043)	-0.057 (0.041)
Regular worship	0.048 (0.072)	0.012 (0.030)	0.003 (0.037)	0.032 (0.035)

Employment	0.707**	0.040	0.447***	0.219*
	(0.277)	(0.116)	(0.134)	(0.129)
Grandchildren	0.101	-0.020	0.030	0.091**
	(0.092)	(0.039)	(0.048)	(0.044)
Ethnicity	-0.210**	0.030	-0.081*	-0.156***
	(0.094)	(0.039)	(0.047)	(0.047)
Fair health	0.714***	0.244***	0.180***	0.290***
	(0.063)	(0.026)	(0.031)	(0.029)
Good health	0.982***	0.362***	0.302***	0.321***
	(0.125)	(0.052)	(0.064)	(0.066)
Social activity	0.085	0.006	0.015	0.061**
	(0.059)	(0.025)	(0.030)	(0.029)
Compulsory education	0.109	0.060**	0.016	0.036
	(0.069)	(0.029)	(0.035)	(0.033)
Constant	2.936***	0.496**	1.481***	0.951***
	(0.526)	(0.219)	(0.248)	(0.271)
Observations (N)	3,908	3,913	3,915	3,910
R-squared	0.307	0.251	0.103	0.269

*Notes: Robust standard errors in parentheses for Model 1 and Model 2. Standard errors in parentheses for Model 3 and Model 4; *** p<0.01, ** p<0.05, * p<0.1 .*
Source: Authors' calculations, using VNAS 2011

Financial well-being and life satisfaction

The regression results that help in examining the relation between subjective financial well-being and life satisfaction are presented in Table 4. For all subjective financial well-being measures, there was a significant positive relationship between subjective financial well-being and life satisfaction. Also, it is important to note that the coefficient for the variables 'high income' and 'mid-level income' of the family did not affect the life satisfaction of older individuals directly, but only indirectly through the financial well-being variables. This indirect mechanism effect is also identified in previous literature, which describes how people with a lower income were more likely to be financially stressed when financially disadvantageous events occurred. For example, Murphy and Scott (2014) found that when the housing crash and economic downturn happened, respondents who suffered from negative equity tended to feel the financial stresses of that situation, which undoubtedly spilled over into other areas of their lives. Wilkinson (2016) found that decreases in objective financial resources were associated with an increase in financial strain during the Great Recession. Livani and Graham (2019) found that the source of income and the way in which income is generated matters to individuals, even in situations of extreme economic and political uncertainty.

The number of assets of the family, however, was found to affect the level of life satisfaction directly in our models. This finding was consistent with the conclusion of Hubbard et al. (2014) that people with more financial resources reported better subjective well-being even when they were frail because financial resources may provide a partial buffer against the detrimental psychological effects of frailty. Asset accumulation thus plays an important role in both financial and overall well-being among the elderly.

People living in the northern region had a higher level of life satisfaction than their counterparts in the central region. Urban older people had a lower level of life satisfaction than did their rural counterparts. At first sight, this seems counterintuitive, as urban people might have more access to utility (e.g., healthcare facilities) than rural people and therefore may enjoy their old age in better condition, even after controlling for income and number of assets. As argued by Mirowsky and Ross (1999), however, individual- or community-based economic advantages might elevate people's expectations about living standards, and thus reduce their level of satisfaction with life.

The study found that age was positively related to the life satisfaction of older people. However, there was no statistically significant gender-based difference in terms of the level of life satisfaction of older people. Similarly, employment seemed to have no strong association with the level of life satisfaction of older people.

In line with the findings of Luhmann et al. (2012), the result showed that marital status was an important predictor of life satisfaction for older people. Married older people had higher life satisfaction, which demonstrates the importance of having a family to older people. Widowed or divorced individuals might suffer from the consequences of divorce or marriage long after the event, and their level of happiness may not return to its original state.

Following a religion did not improve the life satisfaction of older people. However, people who worshipped regularly had life satisfaction scores that were on average about 0.1 point higher than those who did not.

Having grandchildren, completing compulsory education, and household size did not affect life satisfaction. Similarly, ethnicity did not affect the life satisfaction of older people.

Similarly to the previous model, health status significantly affected life satisfaction. Health was an important predictor of both financial well-being and life satisfaction. If older people are healthy, it is easier for them to maintain good financial conditions. Also, good health allowed older people to enjoy their life more. This finding was consistent with many previous studies, such as those of Borg et al. (2008), Hubbard et al. (2014) and Yang et al. (2016).

Similarly to previous studies (such as Zhang–Zhang 2017), it was found that older people who take part in social activities had a higher level of life satisfaction. It might be that when people feel unhappy they take part in social activities as a remedy, and this increases satisfaction with life.

Table 4. *Subjective financial well-being and life satisfaction*

Variables	Model 5 Life satisfaction	Model 6 Life satisfaction	Model 7 Life satisfaction	Model 8 Life satisfaction
Financial well-being index	0.139*** (0.008)			
Financial well-being (Sufficiency)		0.260*** (0.019)		
Financial well-being (Time comparison)			0.176*** (0.016)	
Financial well-being (Neighbourhood comparison)				0.209*** (0.017)
High income	-0.023 (0.046)	0.040 (0.047)	0.074 (0.047)	0.047 (0.047)
Middle income	-0.037 (0.038)	0.005 (0.039)	-0.007 (0.039)	-0.005 (0.039)
Asset number	0.028*** (0.005)	0.038*** (0.005)	0.048*** (0.005)	0.036*** (0.005)
Household size	0.027 (0.017)	0.024 (0.017)	0.016 (0.017)	0.037** (0.018)
North	0.087** (0.041)	0.141*** (0.041)	0.090** (0.041)	0.107*** (0.042)
South	0.005 (0.043)	-0.014 (0.043)	0.027 (0.043)	0.017 (0.044)
Urban	-0.048 (0.035)	-0.133*** (0.035)	-0.103*** (0.036)	-0.072** (0.036)
Age	0.004*** (0.001)	0.005*** (0.001)	0.007*** (0.001)	0.005*** (0.001)
Gender	-0.013 (0.029)	-0.011 (0.030)	-0.016 (0.030)	-0.016 (0.030)
Married	0.154*** (0.033)	0.167*** (0.034)	0.160*** (0.034)	0.137*** (0.034)
Religion	-0.035 (0.038)	-0.056 (0.038)	-0.044 (0.039)	-0.052 (0.039)
Regular worship	0.102*** (0.035)	0.105*** (0.036)	0.108*** (0.036)	0.102*** (0.036)

Employment	-0.249**	-0.151	-0.216*	-0.162
	(0.115)	(0.111)	(0.118)	(0.124)
Grandchildren	0.021	0.041	0.026	0.016
	(0.046)	(0.047)	(0.048)	(0.047)
Ethnicity	0.011	-0.021	-0.006	0.014
	(0.045)	(0.046)	(0.047)	(0.047)
Fair health	0.127***	0.164***	0.197***	0.167***
	(0.028)	(0.028)	(0.029)	(0.029)
Good health	0.194***	0.239***	0.275***	0.266***
	(0.058)	(0.059)	(0.059)	(0.059)
Social activity	0.049*	0.055**	0.058**	0.047*
	(0.028)	(0.028)	(0.028)	(0.028)
Compulsory education	0.006	0.008	0.018	0.016
	(0.033)	(0.034)	(0.034)	(0.034)
Constant	1.892***	2.169***	2.042***	2.058***
	(0.224)	(0.223)	(0.230)	(0.235)
Observations (N)	3,691	3,696	3,698	3,693
R-squared	0.200	0.170	0.156	0.165

*Note: Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.*
Source: Authors' calculations, using VNAS 2011

CONCLUSIONS AND POLICY IMPLICATIONS

This research attempted to investigate various factors associated with the level of subjective financial well-being of Vietnamese older adults and the relationship between subjective financial well-being and life satisfaction.

When looking at the difference in the levels of subjective financial well-being among different socio-economic groups, the subjective financial well-being levels differed according to different characteristics such as household income, asset levels, age, working status, ethnicity, and health. In contrast to previous studies which suggested a weakening of the relationship between objective and subjective evaluations of financial well-being with age (such as Francoeur (2002)), we found a strong association between financial well-being and income and the asset level of older adults

Overall, this research confirmed a positive relationship between financial well-being and the life satisfaction of older people. Subjectively evaluated financial condition substantially mattered for life satisfaction, regardless of the actual level of financial resources. It may be concluded that, for older adults in Vietnam, financial well-being played a central role in improving life satisfaction. This study demonstrated that the perception of financial well-being of individuals could influence their life satisfaction level. The results also support the arguments of Stoller and Stoller (2003) that, despite absolute low levels of income, older people might be satisfied as long as they feel as financially well off as their peers.

These results have important implications, as economists in developing countries often focus on income and wealth as indicators of happiness and satisfaction in life. Having a higher income gives individuals access to recreational goods and opportunities, and a range of activities that improve life satisfaction. According to cumulative inequality theory (Ferraro–Shippee 2009), both objective and subjective evaluations of financial well-being contribute to life satisfaction. In this research, it was clearly shown that household income did not directly affect the life satisfaction of individuals; rather, it only affected it indirectly via subjective financial well-being or via asset accumulation over time.

In addition to the effect of perceived financial well-being, this study also suggested that health conditions have a significant impact on life satisfaction among older adults. The common tendency is for aging to very often be accompanied by impaired health, increased vulnerability to ailments, and fewer opportunities for social engagement, which in turn leads to a decrease in life satisfaction. The results of this study confirmed the importance of health in improving both the subjective financial well-being and life satisfaction of older people.

According to the activity theory of aging, the life satisfaction of older adults may be enhanced by participating in social activities because this might offer a sense of purpose, psychological effectiveness, and personal connection (Yeo–Lee 2019). We also found evidence that social activity improves the life satisfaction of older people. On the other hand, the practice of regular worship seemed to be strongly associated with a higher level of life satisfaction, and this may be explained by the fact that many Vietnamese older people believe that praying will not only bring them luck but also peace and tranquillity, which helps develop positive attitudes towards life. This result supports those of previous studies in Vietnam (such as Tran et al. 2016) and other countries in the world (for instance, Van Praag et al. 2010; Ngamaba–Soni 2018). This finding was especially interesting because we found that having a religion did not significantly affect older people's life satisfaction level. Thus, whether an older adult identified with a religion did not affect their life satisfaction, but active worship really mattered.

The findings of this study also indicated that older adults living in different regions had different levels of subjective financial well-being and life satisfaction. The same was also true of those living in urban and rural areas. Thus, the government should consider the differences in the living locations of older adults when designing appropriate policies for improving subjective financial well-being and life satisfaction.

To the best of our knowledge, this study was one of the first pieces of research to examine the relationship between financial well-being and life satisfaction for older Vietnamese adults. Most previous studies have just focused on objective financial determinants (such as income), while this study provided an examination of factors associated with subjective financial well-being of older people.

These findings should be useful for specialists working with older people and their families. They may also help guide older individuals to make more suitable economic decisions related to future well-being and life satisfaction.

These findings suggest some strategies for improving older people's life satisfaction. For successful aging, local authorities and civil and mass organizations should develop seminars or online training to improve financial education, and these educational programs could be designed to prepare people for approaching retirement. Financial education for retirement planning is important and intervention programs for people should be developed to encourage their active involvement in financial planning from their middle-ages onwards, or earlier. Initiatives that can inform about the practice of financial planning and retirement income management would make a big difference to the financial well-being and life satisfaction of individuals in their golden days. Guiding workers into voluntary retirement plans should also involve increasing retirement-related savings and raising awareness of any retirement saving deficits.

Although the findings are remarkable, this study has several limitations which should be considered, as discussed below.

First, as the study used a cross-sectional data set it might preclude the ordering of causality to a certain extent. Thus, it was difficult to determine temporal relationships between the predictors and life satisfaction. Employing a longer period with many measurement points would be a solution, which can be accomplished with the future waves of the *Vietnam Aging Survey*.

Second, measurement error could not be ruled out in the study. Related to the measurement issue, it was also challenging to ascertain whether life satisfaction measured with a single question could accurately reflect the life satisfaction levels of older Vietnamese people. Thus, a study that utilizes more accurate variables that capture both subjective financial well-being and life satisfaction would be desirable.

Third, another limitation of this study is related to the secondary data we used. In the above discussion it was argued that people who are more aware of their financial situation might be more worried, regardless of whether they are worse off in terms of their financial conditions. However, in this research we did not have the information about the financial literacy level and financial behaviours of the respondents. Future research should seek remedy to this limitation and explore the potential relationship between financial well-being, financial literacy, financial behaviours, and life satisfaction, including the direction, extent, and strength of the relationships.

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APPENDICES

Appendix 1: Sensitivity tests for Multicollinearity

As mentioned previously, multicollinearity might be a serious issue in our models. We carried out the tests and report results in Tables 5 and 6. As presented in Table 5, the VIF values of all variables in the subjective financial well-being model were equal to or smaller than 2.61. The mean VIF of all variables in the models was 1.51. Similarly, Table 6 shows that the VIF values of all variables in the life satisfaction-subjective well-being models were equal to or smaller than 2.73, and the mean VIF of all variables in the models ranged from 1.50 to 1.53. According to O'Brien (2007), a VIF value of less than four indicates that a model does not suffer from excessive multicollinearity. Therefore, it may be concluded that both Model 1 and Model 2 were suitable for our analyses.

Table 5. *Variance inflation factor (VIF) for financial well-being determinant models*

	Financial well-being index		Financial well-being (Sufficiency)		Financial well-being (Time comparison)		Financial well-being (Neighbourhood comparison)	
Variables	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
High income	2.61	0.383	2.61	0.383	2.61	0.383	2.61	0.383
North	2.39	0.418	2.38	0.420	2.38	0.420	2.39	0.418
South	2.21	0.453	2.20	0.454	2.20	0.454	2.21	0.454
Asset number	1.95	0.512	1.96	0.510	1.96	0.510	1.95	0.512
Middle income	1.88	0.531	1.88	0.531	1.88	0.532	1.88	0.531
Compulsory education	1.52	0.659	1.52	0.658	1.52	0.659	1.52	0.659
Age	1.51	0.661	1.51	0.661	1.51	0.661	1.51	0.661

Regular worship	1.50	0.668	1.50	0.669	1.50	0.669	1.50	0.668
Married	1.46	0.687	1.46	0.687	1.46	0.687	1.46	0.687
Urban	1.36	0.737	1.36	0.735	1.36	0.736	1.36	0.737
Religion	1.35	0.742	1.35	0.743	1.35	0.742	1.35	0.742
Gender	1.30	0.771	1.30	0.771	1.30	0.770	1.30	0.771
Grandchildren	1.18	0.849	1.18	0.849	1.18	0.850	1.18	0.849
Social activity	1.14	0.876	1.14	0.876	1.14	0.876	1.14	0.876
Fair health	1.14	0.877	1.14	0.877	1.14	0.877	1.14	0.877
Ethnicity	1.10	0.908	1.10	0.908	1.10	0.908	1.10	0.908
Good health	1.09	0.921	1.09	0.919	1.09	0.919	1.09	0.921
Household size	1.06	0.948	1.06	0.946	1.06	0.946	1.06	0.948
Employment	1.01	0.988	1.01	0.988	1.01	0.988	1.01	0.988
Mean VIF	*1.51*		*1.51*		*1.51*		*1.51*	

Source: Authors' calculations using VNAS 2011

Table 6. *Variance inflation factor (VIF) for life satisfaction determinant models*

Variables	VIF	Variables	VIF	Variables	VIF	Variables	VIF
Financial well-being index	1.44	Financial well-being (Sufficiency)	1.33	Financial well-being (Time comparison)	1.12	Financial well-being (Neighbourhood comparison)	1.37
High-income	2.72	High-income	2.69	High-income	2.67	High-income	2.68
North	2.39	North	2.37	North	2.39	North	2.38
South	2.20	South	2.20	South	2.20	South	2.20
Asset number	2.19	Asset number	2.11	Asset number	2.01	Asset number	2.18
Middle-income	1.93	Middle-income	1.92	Middle-income	1.92	Middle-income	1.92
Age	1.91	Age	1.91	Age	1.89	Age	1.89
Employment	1.52	Employment	1.52	Employment	1.53	Employment	1.52
Compulsory education	1.52	Compulsory education	1.52	Compulsory education	1.52	Compulsory education	1.52
Regular worship	1.49	Regular worship	1.49	Regular worship	1.49	Regular worship	1.49
Married	1.43	Married	1.44	Married	1.44	Married	1.44
Urban	1.42	Urban	1.39	Urban	1.41	Urban	1.43
Religion	1.34	Religion	1.34	Religion	1.34	Religion	1.34
Gender	1.30	Gender	1.30	Gender	1.31	Gender	1.30
Fair health	1.19	Fair health	1.18	Fair health	1.18	Fair health	1.18
Grandchildren	1.18	Grandchildren	1.17	Grandchildren	1.16	Grandchildren	1.18
Social activity	1.15	Social activity	1.15	Social activity	1.15	Social activity	1.15
Good health	1.11	Good health	1.11	Good health	1.10	Good health	1.10
Ethnicity	1.10	Ethnicity	1.10	Ethnicity	1.10	Ethnicity	1.10
Household size	1.06	Household size	1.06	Household size	1.06	Household size	1.06
Mean VIF	*1.58*	*Mean VIF*	*1.57*	*Mean VIF*	*1.55*	*Mean VIF*	*1.57*

Source: Authors' calculations, using VNAS 2011

Appendix 2: Sensitivity tests for heteroscedasticity

The results of the Breusch–Pagan / Cook–Weisberg test for checking the heteroscedasticity problem are presented in Table 7. According to the results, *p*-values for Model 1 and 2 were larger than 0.05. Thus, for this model we could not reject the null hypothesis that the variance of the residuals was homogenous, and we could use the standard errors when reporting OLS regression results. For Model 3 to Model 8, *p*-values were all smaller than 0.05, thus we could reject the hypothesis of homoscedasticity (i.e., that the heteroscedasticity problem exists) and use a robust estimator of variance when reporting OLS regression results.

Table 7. *Breusch–Pagan / Cook–Weisberg test for heteroscedasticity*

Financial well-being determinant models				
	Financial well-being index	Financial well-being (Sufficiency)	Financial well-being (Time comparison)	Financial well-being (Neighbourhood comparison)
Chi2 (1)	3.47	0.06	15.10	4.42
Prob > chi2	0.063	0.810	0.000	0.036
Life satisfaction – financial well-being models				
	Financial well-being index	Financial well-being (Sufficiency)	Financial well-being (Time comparison)	Financial well-being (Neighbourhood comparison)
Chi2 (1)	183.60	185.99	137.08	168.62
Prob > chi2	0	0	0	0

Source: Authors' calculations using VNAS 2011