

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/310774986>

Religiosity and Subjective Well-Being Among Old People: Evidence from a Transitional Country

Article in *Applied Research in Quality of Life* · November 2016

DOI: 10.1007/s11482-016-9500-9

CITATIONS

0

READS

125

4 authors, including:



Tran Quang Tuyen

Vietnam National University, Hanoi, VNU Uni...

26 PUBLICATIONS 37 CITATIONS

SEE PROFILE



Tinh Doan

The University of Waikato

26 PUBLICATIONS 49 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Corruption, provincial institution and firm performance: new evidence from Vietnam, Project QG 15.

[View project](#)



The quality of provincial governance and household welfare in Vietnam: A micro-econometric analysis using panel data [View project](#)

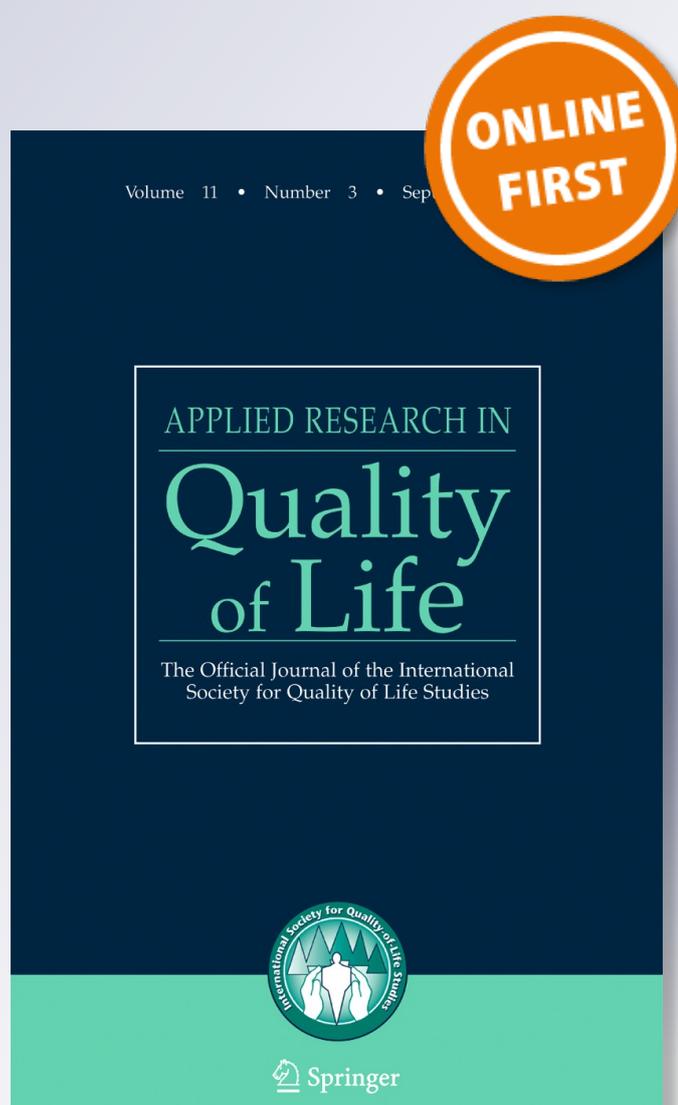
Religiosity and Subjective Well-Being Among Old People: Evidence from a Transitional Country

**Tuyen Quang Tran, Thanh Quy Nguyen,
Huong Van Vu & Tinh Thanh Doan**

Applied Research in Quality of Life
The Official Journal of the International
Society for Quality-of-Life Studies

ISSN 1871-2584

Applied Research Quality Life
DOI 10.1007/s11482-016-9500-9



Your article is protected by copyright and all rights are held exclusively by Springer Science+Business Media Dordrecht and The International Society for Quality-of-Life Studies (ISQOLS). This e-offprint is for personal use only and shall not be self-archived in electronic repositories. If you wish to self-archive your article, please use the accepted manuscript version for posting on your own website. You may further deposit the accepted manuscript version in any repository, provided it is only made publicly available 12 months after official publication or later and provided acknowledgement is given to the original source of publication and a link is inserted to the published article on Springer's website. The link must be accompanied by the following text: "The final publication is available at link.springer.com".

Religiosity and Subjective Well-Being Among Old People: Evidence from a Transitional Country

Tuyen Quang Tran¹ · Thanh Quy Nguyen² ·
Huong Van Vu³ · Tinh Thanh Doan⁴

Received: 21 June 2016 / Accepted: 15 November 2016

© Springer Science+Business Media Dordrecht and The International Society for Quality-of-Life Studies (ISQOLS) 2016

Abstract Using data from the 2011 Vietnam National Aging Survey, we examined whether religion is associated with subjective well-being (i.e. happiness or life satisfaction) among old people in Vietnam. Our regression analysis provided the first evidence that some religious affiliations are negatively related to happiness. Buddhists and Caodaists are less happy than their non-religious counterparts, even after controlling for several household and individual attributes. However, this negative association does not hold for Christians. This finding is robust to the choice of key covariates and specification of econometric models. Our finding supports the hypothesis that religiosity tends to be linked with unhappiness in transitional countries possibly because in these countries those who are religious often consist disproportionately of new, relatively unhappy recruits.

Keywords Aging · Elderly · Religiosity · Subjective well-being · Transitional countries

Introduction

There are two main routes to happiness, one associated with modernization and the other with traditional belief systems (e.g., religion) (Inglehart 2010). As an important component of modernization, economic development is considered to be conducive to

✉ Tuyen Quang Tran
tuyentq@vnu.edu.vn; tuyentranquang1973@gmail.com

¹ University of Economics and Business, Vietnam National University, Room 100, Building E4, No. 144, Xuan Thuy StreetCau Giay DistrictHanoi, Vietnam

² Institute for Education Quality Assurance, Vietnam National University, Hanoi, Vietnam

³ Department of Economics, Academy of Finance, Hanoi, Vietnam

⁴ University of Economics and Business, Vietnam National University, Hanoi, Vietnam

subjective well-being, but it is only one of many causal factors. Among others, religion seems to increase subjective well-being, even in the absence of prosperity and freedom (Inglehart 2010). Especially, religiosity tends to be more linked with happiness as people get older. Older people often adopt religion as a “coping mechanism” (Cox and Hammonds 1989) and since religious capital might accumulate across the lifetime (Iannaccone 1998), religious involvement is likely to be notably important to happiness among the elderly (Brown and Tierney 2009).

The well-being of Vietnamese older people has recently become a main concern for academic researchers (Long and Pfau 2009; Pfau and Long 2010; Truong, Bui, Goodkind, and Knodel 1997) as well as for policy makers (Vietnam Natinal Committee on Ageing [VNCA] 2012). Some studies have examined factors affecting objective well-being (e.g., poverty or income) of the elderly in Vietnam (Long and Pfau 2009; Pfau and Long 2010). Nevertheless, to the best of our knowledge, no empirical evidence exists for determinants of subjective well-being (i.e. happiness or life satisfaction) of the Vietnamese older population. Because life satisfaction better indicates the comprehensive quality of life (Veenhoven 2002)¹ and is more relevant to policy (Gilbert et al. 2016), a better understanding of factors affecting life satisfaction among older people is of much importance, especially when designing policy interventions to improve their welfare.

Our aim in this study is to examine what factors are associated with happiness among the Vietnamese elderly. Especially, we focus on the role of religion in subjective well-being among the old population. This stems from two main reasons. *First*, as already mentioned, religion is found to be a crucial determinant of happiness among the aged. *Second*, Vietnam is an interesting case to investigate because it is among transitional countries where religion has been making a comeback (Inglehart 2010) and thus it is expected to be closely linked with subjective well-being.

The structure of the paper is as follows: Section 2 provides a theoretical and empirical background. Section 3 describes the data sources and methods. Results and discussion are given in Section 4 and conclusions are reported in Section 5.

Theoretical and Empirical Background

Why Should Religion be Conductive to Happiness?

According to Inglehart (2010), there are several possible reasons that explain why would religious beliefs be conducive to happiness? *First*, many religions often encourage people to be satisfied with their life by reducing aspirations² *Second*, religion brings about a sense of solidarity. Religiosity encourages sharing and mutual support and therefore it serves as a form of social insurance where the welfare state is absent. *Third*, religious faiths provide a feeling of certainty and stability in an unpredictable and

¹ As noted by Veenhoven (2002, p. 8): “Social policy makers need both objective and subjective indicators. Though subjective indicators have their limitations, objective indicators also labor under serious shortcomings. For some purposes objective indicators are best suited, for other uses subjective indicators are preferable”.

² If an individual's level of life satisfaction reflects a balance between aspirations and attainments, one can enhance happiness either by increasing attainments, or by lowering one's aspirations. Many religions tend to do the latter, encouraging people to reduce their aspirations (Inglehart 2010).

insecure society (Norris and Inglehart 2011). For instance, religious practices are widely used as a coping method in situations of uncertainty, serious illnesses, the death of relatives or even threats to one's own life (Hogg et al. 2010; Pargament 2001; Sharp 2010). *Fourth*, religion brings about a feeling of meaningfulness and purpose in life (Norris and Inglehart 2011). By promising life after death, religion becomes a powerful tool of reducing fear of death and therefore serves a terror-management function as well (Vail et al. 2010). Inglehart (2010) noted that religion might be linked with unhappiness when unhappy people turn to religion as has occurred recently in several transitional countries. However, religiosity tends to be positively associated with happiness in the long-term.

Empirical Evidence

A large number of studies of elderly populations have confirmed a positive relationship between religious behaviour and measures of subjective well-being in several countries (Blazer and Palmore 1976; Krause 2003; Okun and Stock 1987). Some longitudinal studies find that causality is likely to run from religion to life satisfaction rather than the reverse (Childs 2010; Headey et al. 2010). While many studies have found a positive relationship between religiosity and happiness, few studies have found a negative association. A cross-country study by Inglehart (2010) found that while there is a positive correlation between happiness and religion for the whole sample, a negative relationship was detected for a sub-sample of some ex-communist countries. The author explained that this result appears to reflect a recent flow of unhappy people who have turned to religiosity after the loss of faith in Communist ideology—which once offered a sense of meaning and certainty for many people, and still does for a small group of true believers. A strongly negative association between religious participation and happiness was also found among the Elderly in China (Brown and Tierney 2009). The negative association in China might be explained by Brown and Tierney (2009) that religious controls or persecution in the current or the past (e.g., the Cultural Revolution) might affect the elderly survey respondents. However, both of these studies are unable to provide the causal link between religion and happiness due to lack of longitudinal data.

Religion in Vietnam

Viet Nam has recognized and granted permits to 37 religious associations and sects, and one devotional practice under 13 religions, encompassing over 24 million adherents, accounting for 27% of national population (IAOS 2012). The data from Gallup International (2012) reveal that about 30% of the Vietnamese population were religious and this figure was much lower than the global average (68%). The six major religions in Viet Nam in order of popularity are Buddhism, Catholicism, Caodaism, Protestantism, Hoa Hao Buddhism and Muslim.

Buddhism is a religion that was brought to Vietnam by Indian missionaries (Hung 2010) in the early years A.D from the 10th century to 15th century (IAOS 2012). Buddhism reached its zenith under the Ly-Tran Dynasty (from early 11th century to late 14th century) (Hung 2010). Buddhism in Viet Nam witnessed rapid

growth along with national independence. There are currently about 11 million Buddhist followers (IAOS 2012).

Catholicism was transmitted to Viet Nam in the 15th century by European missionaries. At present, there are approximately 6.5 million Catholics. Protestantism was introduced in Viet Nam in the late 19th and early 20th centuries. However, it was not until 1920 that Protestantism spread throughout the country. At present, there are over 1.5 million Protestant adherents (IAOS 2012).

Caodaism is an indigenous religion established in Tay Ninh province in 1926 (IAOS 2012). This is a syncretistic religion that combines “the gods of Europe” and the “gods of Asia” together in a conversation in order to heal the wounds of colonialism and establish a basis for mutual respect and dialogue (Hoskins 2011). This indigenous religion worships three Supreme Beings namely Buddha, Jesus Christ and Cao Dai God. At present, there are 2.5 million Cao Dai followers (IAOS 2012).

Hoa Hao, also called HoaHao Buddhism, is an indigenous religion founded in 1939 in Hoa Hao Village, Tan Chau District, An Giang Province. This religious sect is concentrated in the Mekong River delta and its membership is estimated at about 1.3 million (IAOS 2012).

In Viet Nam, Islam has its adherents too, mainly amongst the Chams of the central coast. This religion was brought to Viet Nam by the Cham people in the 10th and 11th centuries. At present, there are about 80,000 Muslims (IAOS 2012).

Data and Methods

Data

The study used data from the Vietnam National Aging Survey [VNAS] that was conducted in 2011 by General Statistical Office of Vietnam [GSO]. The main objective of VNAS was to collect data on the characteristics and quality of life of as well as social securities for older people (those aged 50 and over). 12 provinces were randomly selected from six ecological zones. In each selected province, 200 communes were randomly selected and then two villages were randomly selected from each selected commune. Finally, 15 people aged 50 years old and above were randomly selected. The total number of interviewed people is 4007, of those, 1218 were near-elderly (50–59) and 2789 were 60 and older. 3515 people were Kinh, and 492 people were ethnic minorities. 2887 people live in rural areas, and 1120 people live in urban areas.

The survey collected data on personal information (such as age, gender, marital status, religion, social activities, life style, education, employment, etc.) and household information (housing conditions, family relationship, living arrangements, assets and household income). Especially, the survey collects information about the quality of life such as health status and life satisfaction.

Happiness Indicator

The measure of subjective satisfaction is the most widely used in happiness studies (Dolan et al. 2008; Ferrer-i-Carbonell and Ramos 2014; Schneider 2015). The outcome variable in the current study is the life satisfaction or happiness scores of respondents,

obtained from a multiple-choice question: “Taken all together, how are you satisfied with your life at present?” The five possible responses to the question are “very dissatisfied”, “dissatisfied”, “neither satisfied nor dissatisfied”, “satisfied”, and “very satisfied”. For our analysis, happiness is constructed with a value ranging from 1 to 5, corresponding to “very dissatisfied”, “dissatisfied”, “neither satisfied nor dissatisfied”, “satisfied”, and “very satisfied”, respectively.

Table 1 reports the sample summary statistics about happiness. About 57% of all respondents reported being happy or very happy while around 22% said that they were neither satisfied nor dissatisfied and about 11% being dissatisfied or very dissatisfied. In overall, the share of older people who were happy (satisfied or very satisfied with their life) in the 2011 VNAS is quite similar to that of the Elderly in China (Brown and Tierney 2009). A close look at the data by religious affiliation in Table 1 shows that while the proportion of respondents who were satisfied or very satisfied is not different between non-religious people and their religious counterparts (Buddhists or Christianity), this figure is higher for non-religious people than for Christianity and Caodaists.

Measures of Religiosity

In this study, religion is the variable of interest that is measured through religious affiliation and frequency of worship. Religious affiliation is the self-identified association of a person with a religion, denomination or sub-denominational religious group. This is one of the most frequently used measures of religiosity (Konopack 2007). Table 2 shows that about 34.70% of respondents were religious and this figure was higher for female respondents (39%) than for male respondents (28.40%).³ Buddhism accounts for the largest share of religious population (72.30%), followed by Christianity (25.2%), Caodaism (2.5%) and other religions (0.03%).

Table 1 Distribution of individual happiness by religion

Level of life satisfaction or happiness	Religious affiliation				
	All	Buddhism	Christianity	Caodaism	Non-religion
1. Very dissatisfied (%)	1.6	1.8	2.71	2.9	1.3
2. Dissatisfied (%)	9.1	10.6	6.93	17.6	8.7
3. Neither satisfied nor dissatisfied (%)	22.5	22.6	22.89	26.5	22.4
4. Satisfied (%)	54	51.1	52.71	41.2	55.5
5. Very Satisfied (%)	12.8	13.9	14.76	11.8	12.1
Mean of happiness scores	3.67 (0.87)	3.65 (0.91)	3.70 (0.90)	3.41 (1.01)	3.70 (0.83)
Observations	3999	1002	350	34	2612

Standard deviation in parentheses

³ The proportion of older population who were religious in the 2011 VNAS is higher than the proportion of people who are religious among Vietnam’s population (all age groups) (30%) in 2011. See more in the worldwide poll conducted by WIN-Gallup International (Gallup International 2012).

Table 2 Distribution of respondents by religion

Religious affiliation	Whole sample		Male		Female	
	Number	%	Number	%	Number	%
Buddhism	1002	25.06	325	19.74	677	28.77
Christianity	350	8.75	132	8.02	218	9.26
Caodaism	34	0.85	10	0.61	24	1.02
Other religions	1	0.03	0	0	1	0.04
No religion	2612	65.32	1179	71.63	1433	60.9
Total	3999	100	1646	100	2353	100

Source: Authors' calculation from the 2011 VNAS

Table 3 presents the frequency of worship among the Vietnamese elderly. About 32% of respondents conducted worship daily or weekly and this figure is higher for female (35%) than for male (29.6%). Around 44% of respondents practiced worship at least once per month and this figure is slightly higher for male (46%) and for female (43%). About 23% of respondent had worship only at special events and this proportion is quite similar between male and female respondents.

Empirical evidence often shows that both religious affiliation and frequency of worship are positively associated with life satisfaction (Dolan et al. 2008; Krause 2003; Myers 2000) and the association is stronger for older than younger people (Witter et al. 1985). Therefore, religious individuals were expected to be happier than non-religious individuals. Happiness is also expected to have a positive relationship with frequency of worship. Nevertheless, religion might be linked with unhappiness possibly because Vietnam is a transitional country where unhappy people turn to religion as hypothesized by Inglehart (2010). The discussion suggests that the association between religion and happiness might be positive or negative in the current study.

Other Explanatory Variables

The literature suggests that life satisfaction or happiness is associated with a large number of different factors. Following previous studies (e.g., Brown and Tierney 2009; Cheah and Tang 2013; Dolan et al. 2008; Gray et al. 2008; Morawetz et al. 1977; Nguyen et al. 2015; Schneider 2015; Smyth and Qian 2008; Sumngern et al. 2010), a

Table 3 Frequency of worship

Frequency of worship	Whole sample		Male		Female	
	Number	%	Number	%	Number	%
Daily or weekly	1241	32.21	471	29.55	770	34.09
At least once a month	1700	44.12	734	46.05	966	42.76
Only at special occasions	899	23.33	385	24.15	514	22.75

Source: Authors' calculation from the 2011 VNAS

Table 4 Definition, measurements and summary statistics of included variables

Variables	Definition	Mean	SD	Min	Max
Happiness	1 = "very dissatisfied"; 2 = "dissatisfied"; 3 = "neither satisfied nor dissatisfied"; 4 = "satisfied", and 5 = "very satisfied"	3.67	0.87	1	5
Religion					
Religious affiliation					
Buddhism	1 = Buddhist; 0 = otherwise	0.25	0.43	0	1
Christianity	1 = Catholic or Protestant; 0 = otherwise	0.09	0.28	0	1
Caodaism	1 = Caodaist; 0 = otherwise	0.01	0.09	0	1
Worship frequency					
1 = daily or weekly worship; 0 = otherwise					
Daily/weekly		0.23	0.42	0	1
Monthly	1 = monthly worship; 0 = otherwise	0.44	0.50	0	1
Individual characteristics					
Age	Age of respondents	66.33	11.36	50	108
Gender	1 = male; 0 = female	0.41	0.49	0	1
Widowed	1 = being widowed; 0 = not	0.30	0.46	0	1
Living arrangement	1 = living with children/grandchildren; 0 = not	0.34	0.47	0	1
Ethnicity	1 = Kinh & Hoa; 0 = minorities	0.88	0.33	0	1
Employed	1 = employed; 0 = not	0.52	0.50	0	1
Education					
Primary	1 = completed primary school; 0 otherwise	0.21	0.41	0	1
Lower secondary	1 = completed lower secondary; 0 otherwise	0.18	0.38	0	1
Upper secondary	1 = completed upper secondary; 0 otherwise	0.09	0.29	0	1
Higher secondary	1 = higher than upper secondary; 0 otherwise	0.07	0.25	0	1
Social activities					
Frequency of social activities	0 = never; 1 = seldom; 2 = few times per year; 3 = monthly; 4 = weekly; 5 = daily	0.99	1.37	0	5
Health status					
Normal	1 = normal health; 0 = otherwise	0.31	0.46	0	1
Healthy	1 = healthy; 0 = otherwise	0.05	0.23	0	1
Economic condition					
Annual household income (Y): million dong (MD)					
Middle income	1 if Y = 10 MD & Y < 50 MD; 0 otherwise	0.47	0.50	0	1
High income	1 if Y ≥ 50 MD; 0 otherwise	0.31	0.46	0	1
Relative income					
Same	1 if similar to neighbours; 0 otherwise	0.31	0.46	0	1
Higher	1 if higher than neighbours; 0 otherwise	0.40	0.49	0	1
Debt	1 = yes; 0 = not	0.39	0.49	0	1
Location					

Table 4 (continued)

Variables	Definition	Mean	SD	Min	Max
North	1 if living in the North; 0 otherwise	0.45	0.50	0	1
South	1 if living in the South; 0 otherwise	0.30	0.46	0	1

The omitted categories in the dummy variable analyses are: female sex; ethnic minorities; not work; no primary school; married; living without children/grandchildren; non-religious; worship at special events; not healthy; low household income; lower than neighbours; no debt; the central

set of control variables, including individual and household characteristics, were included in the econometric models. The definition, measurements and summary statistics of the variables are given in Table 4.

The socio-economic control variables include age, gender, ethnicity, family status, social activities, education, employment, economic condition and health. The literature reveals that both absolute and relative incomes have a positive association with happiness (Ball and Chernova 2008; Dolan et al. 2008; Oshio et al. 2011). Therefore, both absolute and relative incomes were included in the models, which were expected to be positively linked with individual happiness. Being in debt is also expected to reduce happiness. Empirical evidence demonstrates that health status has a strongly positive relationship with subjective well-being (Dolan et al. 2008). Among other factors, health status is predicted to be most positively related to happiness in the current study.

Some studies show a positive effect of each additional level of education on life satisfaction (Blanchflower and Oswald 2005) and this effect is stronger in low income countries (Fehey and Smyth 2004; Ferrer-i-Carbonell 2005). Thus, it is expected that education would increase with the level of happiness. The frequency of participation in social activities is also expected to be positively linked with happiness. Finally, widowed individuals are expected to be less happy than married individuals in this study.

Table 4 shows that the average age for respondents in the sample is 66.33 and men account for about 41% of the sample. 88% of the sample are ethnic majorities (Kinh and Hoa) while only 12% are ethnic minorities. Regarding employment status, 52% of respondents reported that they still worked and 48% did not work in the past 12 months. 21, 18 and 9% of respondents completed primary school, lower secondary school and upper secondary school, respectively while only 7% of respondents had a higher level of education. 30% of respondents were widowed and 34% lived with their children /grandchildren. The data show that 31% of respondents self-rated their health as normal, while only 5% were healthy.

Looking at economic condition, about 47% of respondents estimated that their total household income ranged from 10 million dong (VND) to less than 50 million VND. 22% of respondents earned total household income less than 10 million VND while 31% of respondents had household income equal or higher than 50 million VND. Regarding relative income, the data reveal that 31% of respondents self-rated that their household income as same as neighbours while 40% of respondents said that their household income higher than neighbours. Finally, about 40% of respondents reported that their household was in debt.

Econometric Models

The following equation was used to examine the relationship between religious behaviour and individual happiness:

$$HP_i = a + \beta_1 X_i + \beta_2 R_i + e_i$$

where i is subscript for individual and HP_i represents the respondent's self-reported happiness. X represents the vector of control variables, including individual characteristics, education, social activity, health, economic condition and location variables, R is a vector of religious variables (i.e., religious affiliation and frequency of worship) and e_i is an error term in the model.

In modeling the determinants of happiness or life satisfaction, happiness can be used as cardinal or ordinal, depending on researchers' assumption (Ferrerri Carbonell and Ramos 2014). A number of studies have confirmed that the results remain practically unchanged whether one models happiness as either a cardinal variable (e.g., using an Ordinary Least Square (OLS) estimator) or an ordinal variable (e.g., using an ordered categorical estimator) (Ferrerri Carbonell and Frijters 2004). However, OLS coefficients directly denote the marginal effects (Wooldridge 2013) and thus are more intuitive and interpretable by a wide range of readers (Jiang et al. 2012). For ease of estimation and interpretability of the regression coefficient, we opt to treat happiness as a cardinal variable and use a conventional OLS regression model to investigate the relationship between religion and individual happiness. However, ordered logit models were also estimated to check for the robustness to the model specifications.

Empirical Results and Discussion

Association Between Religion and Happiness

Regression results are reported in Table 5. In Model 1, we included one dummy variable for religious participation and two dummy variables for daily/weekly worship and monthly worship and the reference group is "only worship at special events". In Model 2, we included three dummy variables representing three categories of religious affiliation of individuals (Buddhism, Christianity and Caodaism) and the reference group is non-religious people. The coefficient on religious participation in Model 1 is negative but not statistically significant at the 0.1 level (p -value = 0.132). This result seems to suggest that there is no difference in happiness between religious adherents and their non-religious counterparts. However, the coefficients on Buddhism and Caodaism in Model 2 are negative and highly statistically significant. This result confirms that Buddhism and Caodaism have a negative relationship with subjective-well-being. Specifically, holding all other variables constant, individuals who are Buddhists and Caodaists would have, on average life satisfaction scores that were 0.18 points and 0.44 points lower than non-religious individuals, respectively. Nevertheless, this negative association does not hold for Christianity because the coefficient on Christianity is positive and not statistically significant (p -value = 0.62). The result in Model 2 also indicates that a higher frequency of worship is also associated with a

Table 5 Factors associated with subjective well-being

	Model 1		Model 2	
	Coefficient	SE	Coefficient	SE
Religion				
Religious or not	-0.092	(0.060)		
Buddhism			-0.178***	(0.058)
Christianity			0.068	(0.135)
Caodaism			-0.441**	(0.170)
Daily/weekly worship	-0.107	(0.093)	-0.139*	(0.082)
Monthly worship	-0.090	(0.078)	-0.087	(0.078)
Individual characteristics				
Age	0.004	(0.003)	0.003	(0.003)
Gender	0.041	(0.046)	0.042	(0.043)
Widowed	-0.054	(0.059)	-0.049	(0.057)
Living with children/grandchildren	0.013	(0.041)	0.015	(0.041)
Ethnicity	0.081	(0.104)	0.037	(0.093)
Employed	0.001	(0.073)	-0.004	(0.071)
Education				
Primary	0.192***	(0.066)	0.172***	(0.062)
Lower secondary	0.196***	(0.062)	0.190***	(0.058)
Upper secondary	-0.002	(0.108)	-0.026	(0.101)
Higher level	0.116	(0.098)	0.097	(0.095)
Social activities	0.033*	(0.018)	0.035*	(0.018)
Health status				
Normal	0.255***	(0.060)	0.246***	(0.058)
Healthy	0.388***	(0.113)	0.382***	(0.109)
Economic condition				
Middle income	0.147**	(0.065)	0.141**	(0.063)
High income	0.392***	(0.051)	0.395***	(0.049)
Income as same as neighbour	0.023	(0.068)	0.028	(0.067)
Income higher than neighbour	0.172*	(0.086)	0.180**	(0.084)
Having a debt	-0.169**	(0.063)	-0.161**	(0.061)
Location				
The North	0.123**	(0.047)	0.107**	(0.048)
The South	0.149	(0.090)	0.146*	(0.083)
Constant	2.943***	(0.316)	3.033***	(0.303)
Observations	3466		3459	
R-squared	0.143		0.151	

Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The omitted categories in the dummy variable analyses are: female sex; ethnic minorities; not work; no primary school; married; living without children/grandchildren; non-religious; worship at special events; not healthy; low household income; lower than neighbours; no debt; the central

lower level of happiness. For instance, holding all other things constant, individuals who worshiped daily or weekly had, on average a 0.14 lower life satisfaction score than those who worshiped only at special events. Similar finding is also found among older people in China (Brown and Tierney 2009).

While our findings contrast with most previous results in the happiness literature (Dolan et al. 2008; Koenig et al. 2001; Witter et al. 1985), they are partly consistent with reported results for China (Brown and Tierney 2009) that the elderly Chinese who were religious were less happy than their non-religious counterparts. Similar findings are also reported for some transitional countries where religion is linked with individual unhappiness (Inglehart 2010). Thus, a possible explanation for the case of Vietnam, is similar to that used by Inglehart (2010) for several post-communist countries, is that the negative relationship between religiosity and happiness possibly because unhappy people have turned to religion. However, we are unable to confirm this causal relationship in Vietnam due to lack of longitudinal data.

Association Between Other Factors and Happiness

The results in Model 2 show that age, gender, ethnicity and employment are not associated with happiness. The result indicates no difference in happiness between those living with and without children/grandchildren. This evidence is also found among older people in rural Thailand (Gray et al. 2008). This finding suggests that living with one's own child might have a net zero effect on an elderly's life satisfaction. As discussed by Chyi and Mao (2012), on the one hand, living with their children/grandchildren helps older people with easy access to receive emotional and daily life support, which can enhance their life satisfaction. On the other hand, coresiding with their children/grandchildren might lead to tensions and conflicts, which in turn can make the elderly less happy.⁴

The result shows that some level of education has a positive effect on life satisfaction. Individuals with primary or lower secondary school diplomas tend to be happier than those without primary schooling. However, this positive effect does not hold for those with upper secondary diploma or higher qualifications. This finding is similar to that in Switzerland (Stutzer 2004) which found that middle education level is linked with the highest level of happiness and China (Brown and Tierney 2009) where only primary school is positively associated with happiness. The results in Model 2 also reveal that participating more frequently in social activities is linked with a higher level of happiness. This finding is in accordance with previous findings (Dolan et al. 2008; Matsushima and Matsunaga 2015). By actively participating in social activities, older people are able to develop good social networks and integrate into society. Thus, engaging in social activities is an important source of life satisfaction for the elderly (Khan and Tahir 2014).

⁴ Another possible explanation, is similar to that used by Gray et al. (2008), is that while many Vietnamese old people in rural areas do not live with their children or grandchildren, their home close to their children/grandchildren's home. Furthermore, although the elderly do not co-reside with their children/grandchildren, their children/grandchildren still contribute positively to their material well-being and still maintain contact and visits.

In line with the happiness literature (Dolan et al. 2008; Kingdon and Knight 2007; Wang et al. 2015), our study finds that health has a substantial and positive association with happiness. As expected, we find that both absolute and relative incomes have strongly positive effects on happiness. Holding all other variables constant, individuals that belong to high income and middle income households would have life satisfaction scores that were 0.39 points and 0.14 points higher than those of individuals in low income households, respectively. The result confirms that having a debt also reduces individual happiness by 0.16 scores. Regarding location variables, the result shows that individuals living in the North and the South tend to be happier than those living in the Central, controlling for other factors.

Robustness Checks

There is a danger of over-controlling as a consequence of including too many predictors at the individual level in happiness equations. Unfortunately, there is no well-established theory of which control variables really matter and should therefore be included (Oshio and Kobayashi 2011). Hence, we examined how sensitivity to religion is affected by the choice of individual attributes to be controlled for. We estimated separate equations with different sets of controlled variables. Models 2 and 3 in Table 6 report how the coefficients on religious affiliations and their *p*-values were affected by including income and health status in the models. As evident in Table 6, while including income or health status results in a modest decrease in the magnitude of coefficient of Caodaism variable, it seems not to change the value of coefficient of Buddhism variable. The coefficient of Buddhism variable varied from -0.23 (without control variables) to -0.18 (with a full set of control variables). However, it must be also noted that the *p*-value unchanged and is highly statistically significant (*p*-value < 0.01). Similarly, the coefficient of Caodaism variable varied from -0.53 to -0.44 and the *p*-value slightly increased but is still statistically significant at the 0.05 level. The coefficient of Christianity variable varied from 0.07 to 0.13 but the *p*-value remains

Table 6 Comparing the coefficient on religion variables estimated with a selected set of covariates

Variables of interest	1	2	3	4	5
Buddhism	-0.23*** (0.066)	-0.21*** (0.062)	-0.22*** (0.057)	-0.20*** (0.055)	-0.18** (0.058)
Christianity	0.13 (0.162)	0.09 (0.147)	0.12 (0.150)	0.07 (0.132)	0.07 (0.135)
Caodaism	-0.53*** (0.168)	-0.55*** (0.189)	-0.46** (0.172)	-0.50** (0.189)	-0.44** (0.170)
Controlled variables	No	Income	Health	Both income and health	All controlled variables
Constant	3.82*** (0.039)	3.44*** (0.075)	3.64*** (0.034)	3.36*** (0.068)	3.11*** (0.308)
Observations	3759	3632	3759	3632	3601
R-squared	0.024	0.095	0.072	0.123	0.154

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

very highly statistically insignificant ($0.42 < p\text{-value} < 0.62$). The result confirms that while the sign and statistical significance of coefficients on religious variables remain almost unchanged across the models, their magnitudes modestly change when including more controlling variables. This suggests that the findings are quite robust to the choice of controlled variables.

In addition, for the robustness test for the model specifications, we also ran several ordered logit models with the same variables. The ordered logit and OLS results are very similar: there is no difference at all in the sign and the significance levels are almost the same for each of coefficients (the ordered logit regression results are available on requests). This demonstrates that the findings are robust to the choice between a linear and an ordered categorical estimator.

Conclusion

The main purpose of this study was to explore whether religiosity is associated with subjective-wellbeing among the elderly in Vietnam. Our regression analysis confirms that Buddhist and Caodaist adherents tend to report themselves as being less happy than their non-religious counterparts, even after controlling for several individual and household attributes. The results are robust to the choice of control variables as well as the specification of econometric models. The findings are consistent with reported results for China (Brown and Tierney 2009) and some ex-communist East European countries (Inglehart 2010) but contrast with most studies in the literature (Koenig et al. 2001). Our findings support the hypothesis stated by Inglehart (2010) that in transitional countries, religion has been coming back and it has not recruited adherents equally from all strata. It has tended to attract the least happy people - those who feel the greatest demand for a sense of meaning, reassurance, predictability, and social support. The findings of this study can be generalized to other transitional countries which are similar in socio-economic characteristics. Thereby, the study contributes new evidence concerning the relationship between religion and happiness, given the context of rapidly aging population and profound socio-economic transformation in these transitional countries.

Interestingly, our study finds that while happiness has a positive link with primary or lower secondary diplomas, it has no relationship with upper secondary diploma or higher qualifications. The current study also answered the question: To what extent do absolute income and relative income influence individual happiness? The results confirm that both the income of the household and the income of other households have a substantial impact on subjective well-being. In addition, being in debt is found to reduce individual happiness. We also find that the level of participation in social activities is positively linked with individual happiness. An implication here is that the elderly might improve their life satisfaction by actively engaging in social activities. As expected, health status is found to be an important determinant of happiness among the elderly. Combined together, the findings of our study suggest that both wealth and health are much of importance to the quality of life of older people in Vietnam. This suggests the social policy agenda for the elderly should focus on improving their economic and health status.

We recognized that our study has some shortcomings. First, similar to many other happiness studies, our study considers happiness only as a single term and was evaluated by respondents. Given that the nature of happiness is multi-dimensional, the validity of perceived happiness as reported from the survey should be further addressed. Second, we are unable to examine the causal relationship between religion and happiness due to lack of longitudinal data. Furthermore, using panel data for estimating a happiness equation help mitigate the bias because it controls for time invariant unobservable individual characteristics (Ferreri Carbonell and Ramos 2014). This suggests that future research should examine the casual relationship with the availability of longitudinal data. Third, while our study seems to support the negative association between religiosity and life satisfaction, we do not give sufficient explanations about how and why it was the case. This is because the data available did not contain specific information with which we can clarify the mechanism through which religion is related to happiness. This offers an interesting topic for future research. Fourth, our findings were observed only among old people. This implies that the implication should not be generalized to the whole population. Different age groups might have different religious behaviours. Future research should examine the life satisfaction-religion relationship for the whole population, given that data are available for all age groups. Finally, our estimates might suffer from omitting some variables that might affect happiness such as satisfaction with relationships, money, and life purpose. This suggests that such variables should be accounted for in future research.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest in this study.

References

- Ball, R., & Chernova, K. (2008). Absolute income, relative income, and happiness. *Social Indicators Research*, 88(3), 497–529.
- Blanchflower, D. G., & Oswald, A. J. (2005). Happiness and the Human development index: the paradox of Australia. *Australian Economic Review*, 38(3), 307–318.
- Blazer, D., & Palmore, E. (1976). Religion and aging in a longitudinal panel. *The Gerontologist*, 16(1 Part 1), 82–85.
- Brown, P. H., & Tierney, B. (2009). Religion and subjective well-being among the elderly in China. *The Journal of Socio-Economics*, 38(2), 310–319.
- Cheah, Y. K., & Tang, C. F. (2013). The socio-demographic determinants of self-rated happiness: the case of Penang, Malaysia. *Hitotsubashi Journal of Economics*, 54(1), 1–16.
- Childs, E. (2010). Religious attendance and happiness: examining gaps in the current literature-A research note. *Journal for the Scientific Study of Religion*, 49(3), 550–560.
- Chyi, H., & Mao, S. (2012). The determinants of happiness of China's elderly population. *Journal of Happiness Studies*, 13(1), 167–185.
- Cox, H., & Hammonds, A. (1989). Religiosity, aging, and life satisfaction. *Journal of Religion and Aging*, 5(1–2), 1–21.
- Dolan, P., Peasgood, T., & White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology*, 29(1), 94–122.
- Fehy, T., & Smyth, E. (2004). Do subjective indicators measure welfare? *European Societies*, 6(1), 5–27.

- Ferreri Carbonell, A. (2005). Income and well-being: an empirical analysis of the comparison income effect. *Journal of Public Economics*, 89(5), 997–1019.
- Ferrer-i- Carbonell, A., & Frijters, P. (2004). How important is methodology for the estimates of the determinants of Happiness? *The Economic Journal*, 114(497), 641–659.
- Ferreri Carbonell, A., & Ramos, X. (2014). Inequality and happiness. *Journal of Economic Surveys*, 28(5), 1016–1027.
- Gallup International. (2012). *Global Index of religiosity and atheism*. Zurich: Gallup International.
- Gilbert, A., Colley, K., & Roberts, D. (2016). Are rural residents happier? A quantitative analysis of subjective wellbeing in Scotland. *Journal of Rural Studies*, 44(1), 37–45.
- Gray, R. S., Rukunnuaykit, P., Kittisuksathit, S., & Thongthai, V. (2008). Inner happiness among Thai elderly. *Journal of Cross-Cultural Gerontology*, 23(3), 211–224.
- Headley, B., Schupp, J., Tucci, I., & Wagner, G. G. (2010). Authentic happiness theory supported by impact of religion on life satisfaction: a longitudinal analysis with data for Germany. *The Journal of Positive Psychology*, 5(1), 73–82.
- Hogg, M. A., Adelman, J. R., & Blagg, R. D. (2010). Religion in the face of uncertainty: an uncertainty-identity theory account of religiousness. *Personality and Social Psychology Review*, 14(1), 72–83.
- Hoskins, J. A. (2011). What are Vietnam's indigenous religions? *Newletter of the Center for South East Asian Studies*, 64, 3–7.
- Hung, D. Q. (2010). *Nghiên cứu tôn giáo – nhân vật và sự kiện [Religious study: characteristics and facts]*. Ho Chi Minh City: Ho Chi Minh City General Publishing House.
- Iannaccone, L. R. (1998). Introduction to the economics of religion. *Journal of Economic Literature*, 36(3), 1465–1495.
- IAOS. (2012). About Viet Nam - religion and beliefs, from <https://iaos2014.gso.gov.vn/content.php?id=religionandbeliefsvn>.
- Inglehart, R. (2010). Faith and freedom: Traditional and modern ways to happiness. In E. Diener, D. Kahneman, & J. Helliwell (Eds.), *International differences in well-being* (pp. 351–397). Oxford: Oxford University Press.
- Jiang, S., Lu, M., & Sato, H. (2012). Identity, inequality, and happiness: evidence from urban China. *World Development*, 40(6), 1190–1200.
- Khan, A. R., & Tahir, I. (2014). Influence of social factors to the quality of life of the elderly in Malaysia. *Open Medicine Journal*, 1(1), 29–35.
- Kingdon, G. G., & Knight, J. (2007). Community, comparisons and subjective well-being in a divided society. *Journal of Economic Behavior & Organization*, 64(1), 69–90.
- Koenig, H., King, D., & Carson, V. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.
- Konopack, J. F. (2007). *Religiosity and physical activity as quality of life determinants in middle-aged to older adults*. Ph.D, University of Illinois at Urbana-Champaign, United States, Illinois.
- Krause, N. (2003). Religious meaning and subjective well-being in late life. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58(3), S160–S170.
- Long, G. T., & Pfau, W. D. (2009). Vulnerability of Vietnamese elderly to poverty: determinants and policy implications. *Asian Economic Journal*, 23(4), 419–437.
- Matsushima, M., & Matsunaga, Y. (2015). Social Capital and Subjective Well-Being in Japan. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 26(4), 1016–1045.
- Morawetz, D., Atia, E., Bin-Nun, G., Felous, L., Gariplerden, Y., Harris, E., . . . Zarfaty, Y. (1977). Income distribution and self-rated happiness: some empirical evidence. *The Economic Journal*, 511–522.
- Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist*, 55(1), 56.
- Nguyen, J. K., Fleming, C. M., & Su, J. J. (2015). Does income inequality make us less happy? *Australian Economic Review*, 48(1), 15–32.
- Norris, P., & Inglehart, R. (2011). *Sacred and secular: Religion and politics worldwide*. New York: Cambridge University Press.
- Okun, M. A., & Stock, W. A. (1987). Correlates and components of subjective well-being among the elderly. *Journal of Applied Gerontology*, 6(1), 95–112.
- Oshio, T., & Kobayashi, M. (2011). Area-level income inequality and individual happiness: evidence from Japan. *Journal of Happiness Studies*, 12(4), 633–649.
- Oshio, T., Nozaki, K., & Kobayashi, M. (2011). Relative income and happiness in Asia: evidence from nationwide surveys in China, Japan, and Korea. *Social Indicators Research*, 104(3), 351–367.
- Pargament, K. I. (2001). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford Press.

- Pfau, W. D., & Long, G. T. (2010). Remittances, living arrangements and the welfare of the elderly in Vietnam. *Asian and Pacific Migration Journal*, 19(4), 447–472.
- Schneider, S. M. (2015). Income Inequality and Subjective Wellbeing: Trends, Challenges, and Research Directions. *Journal of Happiness Studies*, 1–21.
- Sharp, S. (2010). How does prayer help manage emotions? *Social Psychology Quarterly*, 73(4), 417–437.
- Smyth, R., & Qian, X. (2008). Inequality and happiness in urban China. *Economics Bulletin*, 4(23), 1–10.
- Stutzer, A. (2004). The role of income aspirations in individual happiness. *Journal of Economic Behavior & Organization*, 54(1), 89–109.
- Sumngem, C., Azeredo, Z., Subgranon, R., Sungvorawongphana, N., & Matos, E. (2010). Happiness among the elderly in communities: a study in senior clubs of Chonburi Province, Thailand. *Japan Journal of Nursing Science*, 7(1), 47–54.
- Truong, S. A., Bui, T., Goodkind, D., & Knodel, J. (1997). Living arrangements patrilineality and sources of support among elderly Vietnamese. *Asia-Pacific Population Journal*, 12(4), 69–88.
- Vail, K. E., Rothschild, Z. K., Weise, D. R., Solomon, S., Pyszczynski, T., & Greenberg, J. (2010). A terror management analysis of the psychological functions of religion. *Personality and Social Psychology Review*, 14(1), 84–94.
- Veenhoven, R. (2002). Why social policy needs subjective indicators. *Social Indicators Research*, 58(1–3), 33–46.
- VNCA. (2012). *Vietnamese 10 years of implementation of the Madrid international plan of action on aging*. Hanoi: Vietnam National Committee on Aging.
- Wang, P., Pan, J., & Luo, Z. (2015). The impact of income inequality on individual happiness: evidence from China. *Social Indicators Research*, 121(2), 413–435.
- Witter, R. A., Stock, W. A., Okun, M. A., Haring, M. J. (1985). Religion and subjective well-being in adulthood: A quantitative synthesis. *Review of Religious Research*, 332–342.
- Wooldridge, J. M. (2013). *Introductory econometrics: A modern approach* (5th ed.). Mason: South-Western Cengage Learning.