

## ***Subjective Well-being at Old Ages: Does Educational Background Matter?***

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### **Abstract**

Given the trend of demographic transition and population ageing around the world, improving the welfare of older persons has become a key policy issue. This study aimed to investigate the relationship between education and subjective well-being in terms of two affective factors (degree of happiness and loneliness) in later life of Vietnamese. The study employed Vietnam National Ageing Survey 2011, which is the first nationally representative survey of older persons in Vietnam. Both bivariate and multivariate analyses showed that education has a strong positive relationship with happiness and loneliness. In other words, older persons with higher education tend to be happier and less lonely. Other factors, such as gender, marital status, region lived in the most, being member of a poor household, feeling there is sufficient income or material support, total number of daughters, living arrangement, difficulty in daily life activities, and self-rated health compared to other older persons, have strong relationship with these two types of subjective well-being. On the other hand, age group, religion, working status, providing financial support to kin or relatives, being member of Vietnamese Elderly Association, total numbers of sons, place of residence, and having grandchild show insignificant relationship with subjective well-being amongst older persons.

Keywords: Education, Subjective well-being, Happiness, Loneliness, Older persons, Ageing, Vietnam

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## Introduction

Education always plays an important role in all areas of social life, including economic and non-economic aspects. One of the non-economic factors considered is the benefit of education with the adults' mental health. Vietnam is one of the fastest aging countries in the world, which is projected to take only 15 to 20 years to convert from "aging population" to "aged population", while other countries It takes about 100 years to shift the population structure from "aging population" to "aged population". Besides, the Vietnamese older are faced with a series of difficult issues such as no pensions, weak physical health, medical system lacking investment for older persons' health care, etc. (Institute of Social and Medical Studies, 2012; Jones et al., 2010; Kham, 2014). Thus, the Vietnamese older persons are more likely to face mental health risks while Vietnam has not yet had a national action plan on mental health in general and for the older persons in particular (Minas et al., 2017).

As a result, building a timely population policy to cope with the aging of Vietnam's population is an urgent and prerequisite requirement. This study assesses the long-term benefits of the educational background on the subjective well-being of the older persons by finding the relationship between education levels and the happiness and loneliness of the older persons. It is because happiness and loneliness are identified as two important indicators of subjective well-being measurement (Diener, 1984, 2009; Snyder & Lopez, 2009). Education is recognized as having a relationship with happiness in other countries through factors such as high wages, good health care behaviours, high respect from society, which lead to happiness of people (Witter et al., 1984). Besides, the loneliness of the older persons is predicted due to the occurrence of generations due to changing social and family models, the loss of spouse or family members, and reduction social disrespect for the older persons, etc. (Coplan & Bowker, 2013; Truc et al., 2017). In Vietnam, there is no research at the national level on the relationship between educational background and happiness and loneliness at old age while other studies has confirmed other aspects such as social networks have important relationship with loneliness of older persons (Pinquart & Sorensen, 2001) or education have mostly confirmed to have good relationship with working age population such as advantages in working environment and economic benefits (Cuñado & de Gracia, 2012). Besides, other studies on older population only focused on social structure, living arrangement, the interaction between generations, retirement age or family relationships (Giang & Le, 2017; Le et al., 2018; Teerawichitchainan et al., 2015; Truong et al., 1997). Therefore, the research results are expected to contribute to the gap in literature and propose appropriate policies to improve the mental health of Vietnamese older persons, while affirming the role of education in terms of non-economic aspect through answering research questions: What are the relationships between level of education and subjective well-being of older persons in Vietnam, in terms of the degree of happiness and loneliness, controlling for other factors?

## Methodology

**Dataset description:** Viet Nam Ageing Survey<sup>1</sup> (VNAS) in 2011 is the first-ever nationally representative survey of older persons in Vietnam (Institute of Social and

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<sup>1</sup>VNAS 2011 data set source: The Atlantic Philanthropies (AP), Vietnam Women's Union (VWU), Institute of Social and Medical Studies (ISMS), Indochina Research and Consulting (IRC)

Medical Studies et al., 2011). The sample consists of 4,007 people aged 50 and over living in 200 communes of 12 provinces, which are representative of six ecological regions of Vietnam (Institute of Social and Medical Studies, 2012). In this study, we only look at those who are 60 years old and over; therefore, the sample size is 2,571 older persons, including 1,545 older females and 1,026 older males.

Table 2 and table 3 presents the percentage distribution, mean of sample characteristics of older persons. Table 4 and Table 5 reflect the percentage of degree of happiness, degree of loneliness and the distribution of sample characteristics by using Chi square test to determine the statistically significant differences.

**Table 2: Percentage distribution of sample characteristics of older persons in Vietnam**

	<b>Percent</b>
<b>Degree of happiness</b>	
Not at all	15.32
Some of time	38.62
Most of time	46.05
<b>Degree of loneliness</b>	
Not at all	66.16
Some of time	22.83
Most of time	11.01
<b>Education</b>	
Primary	69.58
Lower secondary	16.49
Upper secondary	6.92
Professional secondary	2.72
College/University	4.28
<b>Gender</b>	
Female	60.09
Male	39.91
<b>Age group</b>	
60-69 ages	45.04
70-79 ages	30.18
80 <sup>+</sup> ages	24.78
<b>Marital status</b>	
Married	40.14
Un-married	59.86
<b>Region lived in the most</b>	
North	44.69
Centre	25.67
South	29.64
<b>Area</b>	
Urban	26.37
Rural	73.63
<b>Religion</b>	
Free thinker	18.98
Buddhism	26.60
Christianity	9.06
Confucianism	45.35

<b>Poor household</b>	
Yes	19.29
No	80.71
<b>Still working</b>	
Yes	39.56
No	60.44
<b>Feeling there is sufficient income/material support</b>	
Yes	34.85
No	65.15
<b>Providing financial support to relatives/kin</b>	
Yes	22.09
No	77.91
<b>Member of Vietnamese Elderly Association</b>	
Yes	77.05
No	22.95
<b>Having grandchildren</b>	
Yes	95.33
No	4.67
<b>Living arrangement</b>	
Alone	9.61
Only spouse	18.98
Only children	6.69
Spouse and children (nuclear family)	13.15
Spouse, children, and grandchildren (3 generations)	21.16
Children and grandchildren	21.12
Spouse and grandchildren	2.88
Other people (no spouse, no children)	3.66
Other types	2.76
<b>Having difficult in ADLs</b>	
Yes	36.02
No	63.98
<b>Health comparison with other older persons</b>	
Much worse	11.44
Somewhat worse	41.46
About the same	25.98
Somewhat better	17.66
Much better	3.46
<b>Observations (N, %)</b>	<b>2,571 (100.00)</b>

**Table 3:** Average, min, and max of total number of sons and daughters of sample

	<b>Mean</b>	<b>Min</b>	<b>Max</b>	<b>N</b>
Total number of sons	2.31	0	9	2,571
Total number of daughters	2.31	0	10	2,571

**Table 4:** Percentage of degree of happiness and the distribution of sample characteristics

	Degree of Happiness			p
	Not at all	Some of the time	Most of the time	
<b>Education</b>				<0.0001
Primary	81.47	76.94	59.46	
Lower secondary	13.20	13.29	20.27	
Upper secondary	2.79	5.34	9.63	
Professional secondary	0.76	1.71	4.22	
College/University	1.78	2.72	6.42	
<b>Gender</b>				<0.0001
Female	68.02	68.08	50.76	
Male	31.98	31.92	49.24	
<b>Age group</b>				0.001
60-69 ages	41.12	41.59	49.24	
70-79 ages	33.76	30.72	28.55	
80+ ages	25.13	27.69	22.21	
<b>Marital status</b>				<0.0001
Married	52.03	50.35	70.44	
Un-married	47.97	49.65	29.56	
<b>Region lived in the most</b>				<0.0001
North	34.77	43.20	49.24	
Centre	38.07	22.96	23.82	
South	27.16	33.84	26.94	
<b>Area</b>				<0.0001
Urban	19.29	25.48	29.48	
Rural	80.71	74.52	70.52	
<b>Religion</b>				<0.0001
Free thinker	24.37	17.32	18.58	
Buddhism	32.74	28.50	22.97	
Christianity	7.87	9.87	8.78	
Confucianism	35.03	44.31	49.66	
<b>Poor household</b>				<0.0001
Yes	31.98	21.95	12.84	
No	68.02	78.05	87.16	
<b>Still working</b>				0.097
Yes	41.88	36.96	40.96	
No	58.12	63.04	59.04	
<b>Feeling there is sufficient income/material support</b>				<0.0001
Yes	19.80	29.51	44.34	
No	80.20	70.49	55.66	
<b>Providing financial support to relatives/kin</b>				0.014
Yes	22.84	80.87	24.32	
No	77.16	19.13	75.68	
<b>Member of Vietnamese Elderly Association</b>				0.331
Yes	75.63	76.03	78.38	
No	24.37	23.97	21.62	

<b>Having grandchildren</b>				0.002
Yes	92.13	95.17	96.54	
No	7.87	4.83	3.46	
<b>Living arrangement</b>				<0.0001
Alone	17.01	12.69	4.56	
Only spouse	19.04	15.01	22.30	
Only children	8.38	7.35	5.57	
Spouse and children (nuclear family)	14.21	11.88	13.85	
Spouse, children, grandchildren (3 generations)	13.96	18.33	25.93	
Children and grandchildren	17.26	25.68	18.58	
Spouse and grandchildren	2.03	2.82	3.21	
Other people (no spouse, no children)	6.35	4.63	1.94	
Other types	1.78	1.61	4.05	
<b>Having difficult in ADLs</b>				<0.0001
Yes	48.98	42.90	25.93	
No	51.02	57.10	74.07	
<b>Health comparison with other older persons</b>				<0.0001
Much worse	24.11	13.49	5.49	
Somewhat worse	42.13	50.76	33.45	
About the same	21.83	22.16	30.57	
Somewhat better	10.41	11.58	25.17	
Much better	1.52	2.01	5.32	

**Table 5:** Percentage of degree of loneliness and the distribution of sample characteristics

	Degree of Loneliness			p
	Not at all	Some of time	Most of time	
<b>Education</b>				<0.0001
Primary	63.43	80.07	84.81	
Lower secondary	19.22	11.41	10.60	
Upper secondary	8.11	5.28	3.18	
Professional secondary	3.59	1.19	0.71	
College/University	5.64	2.04	0.71	
<b>Gender</b>				<0.0001
Female	53.32	70.36	79.51	
Male	46.68	29.64	20.49	
<b>Age group</b>				<0.0001
60-69 ages	50.09	34.41	36.75	
70-79 ages	28.69	34.92	29.33	
80+ ages	21.22	30.66	33.92	
<b>Marital status</b>				<0.0001
Married	73.19	41.91	16.96	
Un-married	26.81	58.09	83.04	

<b>Region lived in the most</b>				<0.0001
North	45.68	45.49	37.10	
Centre	24.34	23.51	38.16	
South	29.98	31.01	24.73	
<b>Area</b>				<0.0001
Urban	28.75	22.66	19.79	
Rural	71.25	77.34	80.21	
<b>Religion</b>				0.032
Free thinker	18.40	19.42	21.55	
Buddhism	24.99	29.98	29.33	
Christianity	9.52	7.16	10.25	
Confucianism	47.09	43.44	38.87	
<b>Poor household</b>				<0.0001
Yes	14.17	26.58	34.98	
No	85.83	73.42	65.02	
<b>Still working</b>				0.001
Yes	42.03	34.07	36.04	
No	57.97	65.93	63.96	
<b>Feeling there is sufficient income/material support</b>				<0.0001
Yes	40.09	26.58	20.49	
No	59.91	73.42	79.51	
<b>Providing financial support to relatives/kin</b>				<0.0001
Yes	25.10	14.82	19.08	
No	74.90	85.18	80.92	
<b>Member of Vietnamese Elderly Association</b>				0.144
Yes	76.31	77.00	81.63	
No	23.69	23.00	18.37	
<b>Having grandchildren</b>				<0.0001
Yes	96.12	95.40	90.46	
No	3.88	4.60	9.54	
<b>Living arrangement</b>				<0.0001
Alone	3.70	12.44	39.22	
Only spouse	21.75	16.52	7.42	
Only children	4.82	10.39	10.25	
Spouse and children (nuclear family)	15.99	9.54	3.53	
Spouse, children, grandchildren (3 generations)	27.98	10.22	2.83	
Children and grandchildren	17.05	31.69	23.67	
Spouse and grandchildren	3.12	2.90	1.41	
Other people (no spouse, no children)	2.29	4.77	9.54	
Other types	3.29	1.53	2.12	
<b>Having difficult in ADLs</b>				<0.0001
Yes	30.57	43.27	53.71	
No	69.43	56.73	46.29	
<b>Health comparison with other older persons</b>				<0.0001
Much worse	9.41	12.27	21.91	
Somewhat worse	36.92	52.47	45.94	
About the same	28.92	21.47	17.67	
Somewhat better	20.75	11.24	12.37	
Much better	4.00	2.56	2.12	

**Method of analysis:** We run 2 separate regression models for both happiness and loneliness. In which, model 1 only runs regression between level of education and degree of happiness, degree of loneliness, model 2 includes all controlling variables. We use ordered-logistic regression and obtain odds ratio to stress out the relationship between level of education and subjective well-being which are two affective factors, namely degree of happiness, and degree of loneliness. The equation of ordered logistic regression is as follows:

$$W_i = X_i\beta + C_i\Omega + \varepsilon_i$$

**Dependent variables (W<sub>i</sub>):** The dependent variables are “Degree of happiness” and “Degree of loneliness”, ranking from “not at all”, “some of the time” to “most of the time”.

**Independent variables (X<sub>i</sub>):** Educational background variable representing 5 levels, which are (i) primary school, (iii) lower secondary school, (iv) upper secondary school, (v) professional secondary, and (vi) College/University.

**Other control variables (C<sub>i</sub>):** Demographic characteristics (age group, marital status, gender, and religion), socio-economic characteristics (feeling there is sufficient income or material support, providing financial support to kin/relatives, being member of a poor household, region lived the most, place of residence (urban/rural), and working status), family networks (total number of sons, total number of daughters, having grand-child, and living arrangement), social networks (being member of Vietnamese Elderly Association), health status (Difficulty in Activities Daily Life (ADLs) and self-rated health compared to other older persons). ADLs is measured by four main activities which are eating, getting dressed and undressed, bathing/washing, getting up from the position of lying down, and getting and using toilet.

$\Gamma$ , is the error term that contains measurement errors, and un-observed-characteristics, such as self-confidence, aspiration, or the differences in willing to accept life events of individuals, etc. We assume mistakes in people’s answers are random and thus do not bias the estimation results.

## Empirical findings and discussion

**Table 6:** Ordered-logistic regression between level of education and degree of happiness

	Degree of happiness	
	Model 1	Model 2
<b>Education</b> (Ref: Primary)		
Lower Secondary	1.920*** (0.203)	1.251* (0.150)
Upper secondary	2.779*** (0.444)	1.716*** (0.309)
Professional Secondary	3.885*** (1.032)	2.144*** (0.614)
College/University	3.405*** (0.713)	2.013*** (0.466)
<b>Female</b> (Ref: Male)		0.764***

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	(0.0730)
<b>Married</b> (Ref: Un-married)	1.346
	(0.378)
<b>Age group</b> (Ref: 60-70 ages)	
70-80 ages	0.874
	(0.0883)
80+ ages	0.850
	(0.102)
<b>Urban</b> (Ref: Rural)	0.947
	(0.0941)
<b>Religion</b> (Ref: Free thinker)	
Buddhism	0.921
	(0.113)
Christianity	1.043
	(0.169)
Confucianism	1.149
	(0.145)
<b>Region lived in the most</b> (Ref: South)	
North	1.247*
	(0.147)
Centre	0.999
	(0.117)
<b>Poor household</b> (Ref: Non-poor household)	0.706***
	(0.0729)
<b>Feeling there is sufficient income/material support</b> (Ref: Insufficient)	1.579***
	(0.142)
<b>Living arrangement</b> (Ref: Living alone)	
Only spouse	1.582
	(0.491)
Only children	1.540**
	(0.297)
Spouse, children (nuclear family)	1.296
	(0.413)
Spouse, children, grandchild (3 generations)	1.776*
	(0.552)
Children, grandchildren	1.690***
	(0.255)
Spouse, grandchildren	1.388
	(0.527)
Other people (No spouse, no children)	0.987
	(0.231)
Other types of living arrangement	3.082**
	(1.066)
<b>Having difficult in ADLs</b> (Ref: Not having difficult in ADLs)	0.626***
	(0.0552)

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<b>Health comparison with other older persons</b> (Ref: Much worse)		
Somewhat worse		2.072*** (0.267)
About the same		2.855*** (0.414)
Somewhat better		4.544*** (0.734)
Much better		4.987*** (1.366)
<b>Total number of daughters</b>		1.013 (0.0267)
<b>Total number of sons</b>		1.019 (0.0277)
<b>Still working</b> (Ref: Not working)		0.859 (0.0797)
<b>Providing financial support to relatives/kin</b> (Ref: Not providing)		0.884 (0.0943)
<b>Member of Vietnamese Elderly Association</b> (Ref: Non-member VES)		1.111 (0.114)
<b>Having grandchildren</b> (Ref: Not having grandchildren)		1.223 (0.256)
N	2571	2571
pseudo R-sq	0.023	0.100

**Notes:** Standard errors in parentheses. *Ref.:* Reference category. *N:* Number of observations. *Significance levels:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 7:** Ordered-logistic regression between level of education and degree of loneliness

	Degree of loneliness	
	Model 1	Model 2
<b>Education</b> (Ref: Primary)		
Lower Secondary	0.454*** (0.0564)	0.788* (0.114)
Upper secondary	0.433*** (0.0798)	0.944 (0.202)
Professional Secondary	0.223*** (0.0800)	0.455** (0.175)
College/University	0.218*** (0.0629)	0.407*** (0.132)
<b>Female</b> (Ref: Male)		1.036 (0.118)
<b>Married</b> (Ref: Un-married)		0.359*** (0.112)

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<b>Age group</b> (Ref: 60-70 ages)	
70-80 ages	1.072 (0.125)
80+ ages	1.189 (0.161)
<b>Urban</b> (Ref: Rural)	1.046 (0.122)
<b>Religion</b> (Ref: Free thinker)	
Buddhism	0.946 (0.133)
Christianity	0.766 (0.147)
Confucianism	0.802 (0.118)
<b>Region lived in the most</b> (Ref: South)	
North	1.150 (0.158)
Centre	1.353** (0.183)
<b>Poor household</b> (Ref: Non-poor household)	1.488*** (0.166)
<b>Feeling there is sufficient income/material support</b> (Ref: Insufficient)	0.640*** (0.0692)
<b>Living arrangement</b> (Ref: Living alone)	
Only spouse	0.264*** (0.0906)
Only children	0.333*** (0.0660)
Spouse, children (nuclear family)	0.212*** (0.0760)
Spouse, children, grandchild (3 generations)	0.126*** (0.0446)
Children, grandchildren	0.264*** (0.0422)
Spouse, grandchildren	0.382** (0.160)
Other people (No spouse, no children)	0.511*** (0.125)
Other types of living arrangement	0.213*** (0.0816)
<b>Having difficult in ADLs</b> (Ref: Not having difficult in ADLs)	1.437*** (0.144)

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<b>Health comparison with other older persons (Ref: Much worse)</b>		
Somewhat worse		0.784* (0.111)
About the same		0.536*** (0.0873)
Somewhat better		0.443*** (0.0811)
Much better		0.561* (0.172)
<b>Total number of daughters</b>		0.946* (0.0286)
<b>Total number of sons</b>		0.965 (0.0299)
<b>Still working (Ref: Not working)</b>		1.109 (0.120)
<b>Providing financial support to relatives/kin (Ref: Not providing)</b>		0.842 (0.108)
<b>Member of Vietnamese Elderly Association (Ref: Non-member VES)</b>		1.089 (0.132)
<b>Having grandchildren (Ref: Not having grandchildren)</b>		1.205 (0.285)
N	2571	2571
pseudo R-sq	0.024	0.170

**Notes:** Standard errors in parentheses. *Ref.:* Reference category. *N:* Number of observations.

*Significance levels:* \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Bivariate analysis (model 1) shows that the higher the level of education, the higher the odds of having higher “degree of happiness”. The odds of happiness at "Lower secondary", "Upper secondary", "Professional secondary" and "College/University" levels are nearly 2.0 times, 2.8 times, 3.9 times, and nearly 3.5 times higher than the odds of happiness at “Primary level”, respectively. In contrast to the degree of happiness, the higher level of education, the lower the odds of loneliness. The odds of loneliness at "Lower secondary", "Upper secondary", "Professional secondary" and "College/University" level are 1.2 times, 2.3 times, 4.5 times, and 4.6 times lower than the odds of loneliness at “Primary level”, respectively.

Similar to bivariate analysis, multivariate ordered logistic regression analysis (model 2) shows that older persons with higher education tend to be happier and less lonely. The odds of happiness at "Lower secondary", "Upper secondary", "Professional secondary" and "College/University" levels are 1.25 times (OR=1.251, 95%CI: 0.99-1.58), 1.72 times (OR=1.716, 95%CI: 1.20-2.44), 2.14 times (OR=2.144, 95%CI: 1.22-3.75), and nearly 2.0 times (OR=2.013, 95%CI: 1.27-3.17) higher than the odds of happiness at “Primary level”, respectively. In contrast to the degree of happiness, the higher level of education, the lower the odds of loneliness. The odds of loneliness at "Lower secondary", "Professional secondary" and "College/University" level are

1.27 times (OR=0.788, CI: 0.59-1.04), 2.20 times (OR=0.455, CI: 0.21-0.96), and 2.46 times (OR=0.407, CI: 0.21-0.76) lower than the odds of loneliness at “Primary level”, respectively.

There is strong relationship between "Feeling there is sufficient income and material support" and subjective well-being of Vietnamese older persons. Obviously, older persons who feel that they receive sufficient income and material support in their life, have nearly 1.6 times higher the odds of happiness compared to those who feel that they receive insufficient income and material support. Moreover, they have approximately 1.6 times lower the odds of loneliness compared to those who feel that they receive insufficient income and material support. Besides, "poor household status" has homogeneous results with "sufficient income/support". Older persons who are living in poor households which are classified by government, have the odds of happiness 1.4 times lower, and the odds of loneliness nearly 1.5 times higher than those who do not belong to poor households.

It is interesting to conclude that Vietnam Elderly Association (VEA), which is the first formal and largest ever national association for older persons in Vietnam, has no statistically significant contribution to the degree of happiness and loneliness of Vietnamese older persons. Similarly, compared to age 60-69, other age groups have statistically insignificant difference in terms of happiness and loneliness. There is no statistically significant difference in both the degree of happiness and loneliness among the different religions, which are Buddhism, Christianity, and Confucianism, compared to being a Free-thinker. Married people are not different in degree of happiness compared to people who are unmarried (including those who are single, separated, and divorced). However, married older person tends to be less lonely nearly 2.8 times compared to unmarried older person.

Regarding region, there is no statistically significant difference in degree of loneliness between those who spend most of the time of their life in Northern Vietnam and those who spend most of the time of their life in Southern Vietnam. Those who spend most of the time of their life in Centre region have the odds of having higher degree of loneliness 1.35 times higher than the odds of having higher degree of loneliness of Southern people. Those who spend most of the time of their life in Northern Vietnam have the odds of having higher degree of happiness 1.25 times higher than the odds of having higher degree of happiness of Southern people. There is no statistically significant difference in the odds of having higher degree of happiness between Central people and Southern people.

Additionally, family networks variables have various roles in the contribution to subjective well-being of old age. The number of sons has insignificant contribution in different indicator of subjective well-being at later life. There is no relationship between total number of daughters and degree of happiness. The number of daughters has modest significant difference in the odds of having higher degree of loneliness of older persons, increasing one daughter is associated with 1.06 times lower odds of having higher degree of loneliness. Besides, having or not having grandchild, and having financial support for kin/relatives have no significant distinction in terms of subjective well-being of older persons in Vietnam.

On the other hand, living arrangement has strong relationship with various types of subjective well-being at old ages, living alone is strongly and negatively associated with happiness and positively associated with loneliness compared to other types of living arrangements. In more details, in the case of living with only spouse, the odds of having higher degree of loneliness is 3.80 times lower than living alone. For those who live with any types of children such as adopted, biological or in-law-children, the odds of having higher degree happiness is 1.54 times higher, and the odds of having higher degree of loneliness is nearly 3.0 times lower than living alone. For those who live in nuclear family (only with spouse and children), the odds of having higher degree of loneliness is nearly 4.72 times lower than living alone. Living in extended family (3 generations in a house, including spouse, children and grandchild) is associated with nearly 1.80 times higher odds of having higher degree of happiness, and nearly 8.0 times lower odds of having higher degree of loneliness than living alone. For those who live with only with children and grandchild, the odds of having higher degree of happiness is nearly 1.70 times higher, and the odds of loneliness is nearly 3.78 times lower than living alone. Living with spouse and grandchild (without children in family) is associated with nearly 2.62 times lower odds of having higher degree of loneliness than living alone. For those who live with other family members (without spouse and children), the odds of having higher degree of loneliness is nearly 2.00 times lower than living alone. For those with other types of living arrangements, the odds of having higher degree of happiness is 3.0 times higher, and the odds of having higher degree of loneliness is nearly 4.70 times lower than living alone. In sum, living alone is the type of living arrangement which has disadvantage in terms of degree of loneliness compared to other types of living arrangements.

Gender is associated with significant differences in subjective well-being. Being older women has negative relationship with happiness in comparison with older men. For older women, the odds of having higher degree of happiness is 1.3 times lower than older men. Whether an older person is still working or not working at old age has statistically insignificant difference in happiness and loneliness of older persons. In contrast, having any difficulty in daily life activities (ADLs) has important relationship with happiness and loneliness of older persons. Those who has any difficulty in ADLs have the odds of having higher degree of happiness 1.44 times lower, and the odds of having higher of loneliness 1.44 times higher than those who does not have any difficulty in ADLs. Coupled with physical health status (difficulty in ADLs), self-rated health (own health in comparison with other older persons in community) has strong relationship with happiness and loneliness of older persons. The higher the degree of self-rated health, the higher the degree of happiness and the lower the degree of loneliness of older persons. Compared to “much worse” status, older persons who evaluate their health as “somewhat worse”, “about the same”, “somewhat better”, “much better”, have higher odds of having higher degree of happiness by 2.1 times, 2.86 times, 4.54 times, and nearly 5.0 times, respectively. Conversely, compared to “much worse” status, older persons who evaluate their health as “somewhat worse”, “about the same”, “somewhat better”, “much better”, have lower odds of having higher degree of loneliness by 1.28 times, 1.86 times, 2.25 times, and nearly 1.78 times, respectively.

## **Conclusion and policy implications**

This study assesses the relationship between educational attainment and subjective well-being of Vietnamese elderly by controlling other factors such as demographic, socio-economic characteristics, family and social networks, health status and religion. This study is expected to contribute to the long-term study on the benefits of education. In sum, the level of education, our main independent variable, plays a very important role in increasing the level of happiness and reducing the level of loneliness of the older persons in Vietnam.

Coupled with policy for improving the level of education for productively ageing, the government should pay attention to living arrangement of older persons. This is because that living arrangement plays an important role for subjective wellbeing of the older persons. The government should issue a policy discouraging living alone for the older persons, in which children and family members cannot leave older persons to stay alone at home because living alone is a serious and worst type, compared to any other types of living arrangement, and makes the degree of happiness lower and the degree of loneliness higher in Vietnamese older persons. With regards to the health communication program for older persons, in addition to physical health improvement programs, in order to improve mental health, the government should supplement content that boosts self-confidence and optimism about the physical health status of each older person. This is because that the comparison of health status with other older persons in the community is very closely related to subjective well-being of older persons, namely happiness and loneliness.

There is an interesting difference compared to earlier studies of the relationship between religion and happiness or loneliness, in this study, there is no difference in happiness and loneliness of older persons who are religious (including Buddhists, Christians, and Confucians), compared to those who are Free thinkers. This is a special result and should be considered for a deeper understanding of the impact of religion on other aspects of mental health, while the religion does not make any difference in happiness and loneliness of the older persons in a communist country like Vietnam, where the government and people tend to become non-religious (Van Canh, 2017). Besides, the Vietnamese government should issue policies for subjective well-being care for different specific groups, for example, the older persons in the central region need to be more concerned about loneliness, while the older persons belong to the list of poor households of government record should be considered both in terms of happiness and loneliness. Mental health care policies should be issued to all older persons of all age groups because no differences between age groups can be found in happiness and loneliness. In addition, female older persons need more attention than male older persons to enhance their happiness.

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