

Factors affecting the happiness level in Southeast Asia countries with a multilevel approach



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Abstract. The level of the population's well-being can be measured by using a subjective well-being indicator which is called happiness, which can be affected by various factors from individuals. However, the background of individuals in a group cannot be ignored. Therefore, this study aimed to determine the factors that affect the level of happiness in Southeast Asian countries at the individual and country levels. Data came from World Value Survey (WVS) Wave 7 with 11,387 individuals from the Philippines, Indonesia, Malaysia, Myanmar, Singapore, Thailand, and Vietnam. Data were analyzed using an ordinal response multilevel model with the level of happiness as a response variable. The results showed that the happiness level was affected by gender, marital status, health status, income, religiosity, education level, life satisfaction, and freedom of choice. However, age at the individual level and variables at the country level did not affect the happiness level.

Keywords: happiness level, multilevel model, multilevel ordinal

INTRODUCTION

The population's well-being level and development growth of a country can be measured by using two well-being indicators consisting of objective well-being and subjective well-being [1]. One of the indicators that can measure objective well-being is income. Meanwhile, subjective well-being is life satisfaction. Subjective well-being is often linked to happiness frequently. Eid and Larsen in "The Science of Subjective Well-being" said that happiness can be measured through an empirical science of subjective well-being [2].

A country that has a higher well-being level tends to have a happy society. This is based on society's needs that have been fulfilled. The publication report "World Happiness Report (WHR) 2020" with regards to the ranking of happiness from 2017 to 2019 said that Finland has the highest happiness level, followed by Denmark and Switzerland. However, the deviation was found on WHR 2021, where Iceland has the highest happiness level surpassing Finland. This WHR 2020 also said Singapore became a country with the highest happiness level among other countries in Southeast Asia, occupying rank 31st of 153 countries, followed by the Philippines (52), Thailand (54), Malaysia (82), Vietnam (83), Indonesia (84), Laos (104), Cambodia (106), and Myanmar (133). This was also reported on WHR 2022 with similar orders but different ranks because of an increase or decrease in happiness levels in Southeast Asia. Singapore is ranked 27th of 146 countries followed

by the Philippines (60), Thailand (61), Malaysia (70), Vietnam (77), Indonesia (87), Laos (95), Cambodia (114), and Myanmar (126). The happiness level on WHR 2020 and WHR 2022 were measured by several factors consisting of Gross Domestic Product (GDP) per capita, social support, healthy life expectancy, freedom to make life choices, generosity, perceptions of corruption, positive affect, and negative affect [3, 4].

Happiness level can be affected by several factors from the individual such as age, marital status, employment status, education, life satisfaction, economic level, health status, belief, and religiosity [5, 6]. However, another factor such as individuals nested in a group should not be ignored because the interpretation of variable relation in the model could be false [7, 8]. Data contains a hierarchical structure (nested data) is defined as data whose lower-level units are nested within higher-level units. When hierarchical data only uses one unit level in the analysis, it can cause discrepancies. This is due to similarities between individuals in the same group, which cannot be ignored. If the hierarchical data is ignored, it will provide a misinterpretation of the relationship between variables in the model [7]. When a data has hierarchical structure, such as individuals nested in a group like a province or country, an ordinary linear regression will not be suitable because it can only accommodate the variation among individuals [9]. To get over this situation, multilevel analysis can be applied because this model allows learning of the variation effect among individuals and groups.



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Pierewan and Tampubolon in their study use a multilevel model and state that happiness is affected by national variation, but regional variation cannot be ignored [10]. Another study by Ngamaba and Soni also said that country development at the country level affects happiness level significantly [11].

Based on those reports and studies, this study aims to determine factors that affect happiness levels in Southeast Asia countries at the individual level and country level with a multilevel approach.

METHODOLOGY

Literature Review

Sustainable Development Goals (SDGs) are a blueprint consisting of a global sustainable development agreement to deal with the current challenge to the future when the development is undergoing [12]. SDGs explain that society's well-being of a country is not only measured by quantitative aspects such as economic development, unemployment level, inflation level, etc but also can be measured by qualitative aspects such as subjective well-being [13, 14]. Statistic Indonesia (BPS) states that the well-being level and development growth of a country can be measured by two well-being indicators, consisting of objective well-being and subjective well-being [1]. Eid and Larsen in "The Science of Subjective Well-being" said that happiness can be measured through an empirical science of subjective well-being [2].

The meaning of happiness in *Kamus Besar Bahasa Indonesia* is pleasure, life peace, either physically or mentally. Whereas, in the Oxford Dictionary, happiness is a condition when someone is feeling deeply satisfied. Happiness is determined by three factors consisting of personality factors (age, gender, nationality, education, and employment status), micro and macro factors (household income, equality of income, and inflation level), also economic condition. The Organization of Economic Cooperation and Development (OECD) said that happiness measurement is determined by three dimensions approaches such as life satisfaction, life meaning, and feeling [13]. Prior studies reported that gender has been identified as an important independent variable for happiness. Females are likely to be happier than males, but females do not tend to be healthier [10, 11, 15].

Currently, many surveys have been conducted to measure the happiness level. There are several surveys in Indonesia, such as *Survei Pengukuran Tingkat Kebahagiaan* (SPTK) by Statistics Indonesia (BPS) and Indonesian Family Life Survey (IFLS) by RAND collaborating with Demographic Institution of Indonesia University, UCLA, Population Research Centre of Gadjah Mada University and Survey METRE. England has the Oxford Happiness Questionnaire (OHQ) by Oxford University [13]. Likewise in Europe, there is a European Social Survey (ESS) containing countries around Europe. On a larger scale, there is a World Value

Survey (WVS) containing almost all countries around the world.

Data and Variables

Level 1 data (individual level) used in this study is secondary data from World Value Survey (WVS) Wave 7 [16]. Surveys on this data were conducted in 2017 until 2021. This data contains 57 countries around the world. Southeast Asian Countries that have been listed in this data are the Philippines, Indonesia, Malaysia, Myanmar, Singapore, Thailand, and Vietnam. The WVS Wave 7 data was measured by interviewing the respondents directly. The happiness level was asked to the respondents with a question "Taking all things together, would you say you are?". The answer is either 1: very happy, 2: rather happy, 3: not very happy: or 4: not at all happy. The health status was either 1: very bad, 2: bad, 3: moderate, 4: good, or 5: very good. The religiosity category was either 1: religious, 2: not religious, or 3: atheist. The household income level was either 1: low, 2: moderate, or 3: high. The life satisfaction and freedom of choice questions were measured using a 10-Likert scale point (1: very unsatisfied, 10: very satisfied; 1: no choice, 10: many choices, respectively). The gender is either 1: male or 2: female. The marital status was answered with 1: married, 2: living together, 3: divorced, 4: separated, 5: widowed, or 6: single. Whereas the level 2 data (country level) is Gross Domestic Product (GDP) from the World Bank website and Human Development Index (HDI) from the UNDP website [17, 18].

The response variable in this study is the happiness level with an ordinal scale consisting of not at all happy, not very happy, rather happy, and very happy. Predictor variables in level 1 are age, gender, marital status, health status, freedom of choice, household income level, religiosity, and education level, while the predictor variables in level 2 are Gross Domestic Product (GDP) and Human Development Index (HDI).

Method

A response variable with an ordinal scale representing ordered sets of categories with multinomial distribution is often treated as if the variable is a continuous scale. However, a consequence is made when the ordinal response is assumed as the continuous response. Since the response variable is not continuous, a linear regression model such as a multiple linear regression model would provide bias when estimating the model's parameters, and standard errors. As the parameter may be ignored and the standard error can be biased [7].

As well as the binary response, the ordinal response is not a value that has been observed from the dependent variable directly, but some of its transformation, which is ordered categories that are considered to consist of continuous predictors η_i . For the logistic link function, the odds of the cumulative probability are defined as the probability under the result of c th outcome category. The log odds are formulated as below:

$$\eta_c = \ln \left(\frac{P(\gamma \leq c)}{P(\gamma > c)} \right) = \ln \left(\frac{\pi_c}{1 - \pi_c} \right) \quad (1)$$

Table 1. Descriptive Summary of WVS Wave 7 Data

Variable	Happiness Level				Total	Pearson chi-square (p-value)
	Not at all happy	Not very happy	Rather happy	Very happy		
Gender, %						31.145
Male	46.76	54.22	48.03	44.69	47.31	(<0.001)
Female	53.24	45.78	51.97	55.31	52.69	
Marital Status, %						171.48
Married	55.40	60.38	67.19	72.80	68.53	(<0.001)
Living together	2.16	4.59	2.80	3.87	3.34	
Divorced	5.04	4.59	2.41	1.77	2.39	
Separated	4.32	2.09	0.82	0.55	0.87	
Widowed	12.23	5.11	4.68	4.54	4.76	
Single	20.86	23.25	22.10	16.47	20.11	
Health Status, %						1764.3
Very poor	11.51	1.04	0.44	0.62	0.69	(<0.001)
Poor	20.14	13.66	4.54	3.59	5.15	
Fair	29.50	50.16	30.52	18.38	27.70	
Good	21.58	25.65	51.84	39.72	44.81	
Very good	17.27	9.49	12.66	37.69	21.65	
Household Income, %						153.1
Lower	51.08	40.56	27.26	27.17	28.64	(<0.001)
Middle	44.60	54.12	66.22	62.98	63.75	
Higher	4.32	5.32	6.52	9.85	7.61	
Religiosity, %						73.899
Religious	78.42	63.71	67.17	73.54	69.36	(<0.001)
Not religious	20.86	31.07	29.04	23.72	27.15	
Atheist	0.72	5.21	3.78	2.75	3.49	
Education Level, %						107.05
Lower	60.43	57.25	47.08	55.21	51.08	(<0.001)
Middle	20.14	22.00	28.58	26.86	27.29	
Higher	19.42	20.75	24.34	17.93	21.62	
Age, Mean (SD)	44.7	44.1	42.1	41.4	42.1	
	(14.8)	(14.2)	(14.6)	(14.7)	(14.62)	
Life Satisfaction, Mean (SD)	4.69	5.48	7.08	8.03	7.27	
	(3.16)	(3.16)	(1.94)	(2.14)	(2.20)	
Freedom of Choice, Mean (SD)	5.51	5.96	7.07	7.54	7.13	
	(3.15)	(2.49)	(2.16)	(2.38)	(2.33)	
GDP, Mean (SD)	12208	16253	15866	10771	13982	
	(19778)	(21483)	(21974)	(18082)	(20705)	
HDI, Mean (SD)	0.73	0.78	0.77	0.74	0.76	
	(0.12)	(0.10)	(0.10)	(0.09)	(0.10)	

where $c = 1, \dots, C - 1$ and η_c is a response variable with c th category. The C is the number of ordinal response categories with c as its component [7].

The important point from this cumulative odds formulation is the probability where the event occurs is redefined as cumulative probability, i.e. ordinal regression model of cumulative counts probability, not probability of individual level of the dependent variable. The main characteristic of this model is assuming the common slope between each probability set formed, i.e. effect of the predictor is constantly determined across category results (parallel regression model). The method where its result is a category scale being coded by odds ratios such as β coefficient. The ordinal multilevel model is formed as below:

$$\eta_{cij} = \beta_{0j} + \sum_{q=1}^Q \beta_{qj} X_{qij} + \sum_{c=2}^{C-1} \tau_c + \varepsilon_{cij} \quad (2)$$

$$\beta_{qj} = \gamma_{q0} + \sum_{s=1}^{S_q} \gamma_{qs} W_{sj} + U_{qj} \quad (3)$$

$$\eta_{cij} = \gamma_{q0} + \sum_{s=1}^{S_q} \gamma_{qs} W_{sj} + \sum_{q=1}^Q \beta_{qj} X_{qij} + \sum_{c=2}^{C-1} \tau_c + U_{0j} + \varepsilon_{ij} \quad (4)$$

Equation (2) is a level 1 model, Equation (3) is a level 2 model, and Equation (4) is a substitution of the level 1

model and level 2 model with η_{ij} is ordinal outcomes variable of the i th individual within j th group, β_{0j} is the intercept at level 1 (lowest threshold), β_{qj} is the q th coefficient at level 1, X_{qij} is the q th predictor on level 1, τ_c is the other threshold, ε_{ij} is the random effect at level 1 with $\varepsilon_{ij} \sim \text{logistic}(0, \pi^2/3)$, γ_{q0} is the lowest threshold, γ_{qs} is the s th coefficient at level 2, W_{sj} is the s th predictor at level 2, and U_{0j} is the random effect at level 2 [19].

The threshold (τ_c) or cut point of certain values of the continuous latent variable η_{cij} determine the observed category response, with $(C - 1)$ required ordered categories on determining the predicted probability.

$$Y_i = \begin{cases} 1, & \text{if } \eta_{ij} \leq \tau_1 \\ 2, & \text{if } \tau_1 < \eta_{ij} \leq \tau_2 \\ 3, & \text{if } \tau_2 < \eta_{ij} \leq \tau_3 \\ 4, & \text{if } \eta_{ij} \geq \tau_3 \end{cases} \quad (5)$$

Equation (5) indicated that if continuous value underlying the predictor (η_{ij}) is less than a threshold, then the result with the lowest outcome category is observed. If η_{ij} is greater than the first threshold, but less or equal to the second threshold, then the second

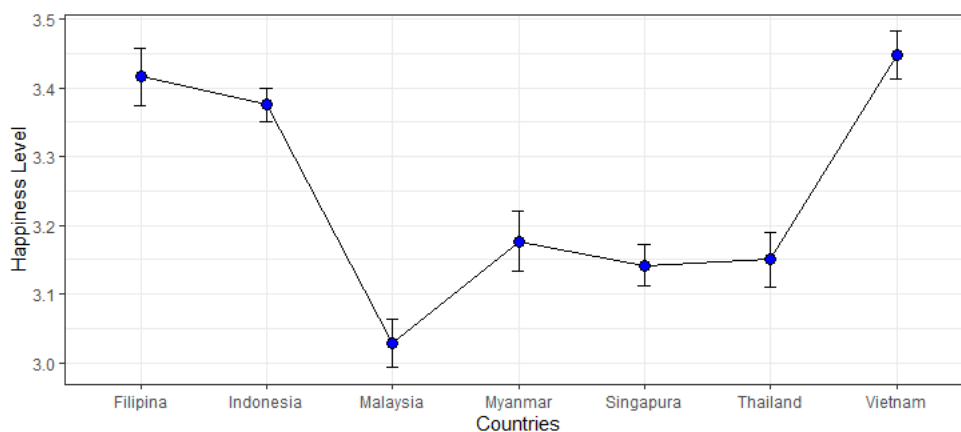


Figure 1. Happiness level in Southeast Asia countries based on WVS Wave 7 data.

category is being observed. If η_{ij} is greater than the second threshold, but less or equal to the third threshold, then the third category is being observed. And if η_{ij} is greater than the third threshold, then the fourth category is observed [7].

The lowest threshold on the equation of the multilevel model is the intercept parameter (β_{0j}), that is allowed to vary on the whole level-2 units. The level-1 model then is rewritten to accommodate the intercept and the other threshold being shifted. The purpose of the threshold is to determine the predicted probabilities for the ordinal outcome [7].

Intraclass Correlation (ICC) and Design Effect (DE) are counted to find out the number of the outcome variance and whether the multilevel model can be applied or not. The ICC and DE formulas are written on the Equation (6) and Equation (7) [20, 21],

$$\rho = \frac{\tau^2}{\tau^2 + \sigma^2} \quad (6)$$

$$DE = (1 + (n_c - 1) \times \rho) \quad (7)$$

where τ^2 is the variance at level 2 and σ^2 is the variance at level 1. According to the level 1, variance on the logistic regression model is not being estimated, then the level 1 variance equals to standard logistic distribution in the amount of $\pi^2/3$ or 3.2899 [22, 23].

The criteria for goodness of fit used for comparing the models to get the best model are AIC and deviance value. Lower AIC and deviance values indicate that the model is better than the other model [7, 20].

RESULTS AND DISCUSSION

Descriptive Statistics

These statistical summaries contain the percentage of each group for categorical variables also mean and standard deviation for continuous variables. Pearson chi-square also be tested to compare the number of observations among groups for each categorical variable [24].

Most of the respondents in Southeast Asia countries who are being the sample in the WVS Wave 7 data are in the rather happy category with a percentage of 53.61% and

very happy with a percentage of 36.74%. With the same result of the summary of the happiness level, the average plot in Figure 1 shows that the average respondent's happiness level in Southeast Asia countries is greater than 3, or can be said that they are rather happy up to the very happy category. Vietnam has the highest average happiness level among other countries in Southeast Asia.

These happiness level results are quite different from the World Happiness Report (WHR) with a scale of 1 up to 10 based on six aspects (Gross Domestic Product (GDP), social support, health life expectancy, freedom of choice, generosity, corruption perception, and dystopia). Singapore (6.480) becomes the country with the highest happiness level and Myanmar (4.394) becomes the country with the lowest happiness level among Southeast Asian countries [4].

The respondents who are female (52.69%) have a similar percentage as male (47.31%) in WVS Wave 7 data. Each happiness level group based on gender by Pearson chi-square test has a difference ($p - value < 0.001$). The respondents who are female have the highest percentage (55.31%) of feeling very happy among other groups.

The happiness level based on the marital status by Pearson chi-square test has a difference ($p - value < 0.001$). The respondents who are married have the highest percentage (72.80%) of feeling very happy among other groups. The happiness level based on the health status by Pearson chi-square test has a difference ($p - value < 0.001$). The respondents who are in very good status have the highest percentage (51.84%) of feeling rather happy among other groups. The happiness level based on the household income level by Pearson chi-square test has a difference ($p - value < 0.001$). The respondents who have medium household income levels have the highest percentage (66.22%) of feeling rather happy among other groups. The happiness level based on religiosity by Pearson chi-square test has a difference ($p - value < 0.001$). The respondents who are of religious status have a high percentage (73.54%) of feeling very happy. The happiness level based on the education level by Pearson chi-square test has a difference ($p - value < 0.001$). Respondents with lower education (ISCED 0-2 or early up to lower

Table 2. The odds ratio of the multilevel model with ordinal outcomes

Variable	Model Null	Model 1 exp(β) [95% CI]	Model 2 exp(β) [95% CI]
Level 1			
Gender			
Male		1	1
Female		1.14 [1.06; 1.23]**	1.15 [1.06; 1.24]**
Marital Status			
Married		1	1
Living together		0.88 [0.70; 1.11]	1.15 [0.92; 1.45]
Divorced		0.59 [0.46; 0.76]**	0.60 [0.47; 0.77]**
Separated		0.42 [0.28; 0.64]**	0.47 [0.31; 0.70]**
Widowed		0.84 [0.69; 1.01]	0.92 [0.76; 1.11]
Single		0.79 [0.71; 0.88]**	0.74 [0.67; 0.83]**
Health Status			
Very poor		1	1
Poor		1.16 [0.68; 1.98]	1.12 [0.67; 1.90]
Fair		1.38 [0.83; 2.29]	1.40 [0.85; 2.32]
Good		2.53 [1.52; 4.20]**	2.38 [1.44; 3.93]**
Very good		7.68 [4.60; 12.82]**	6.91 [4.17; 11.46]**
Household Income			
Lower		1	1
Middle		1.18 [1.08; 1.29]**	1.18 [1.08; 1.29]**
Higher		1.41 [1.20; 1.66]**	1.29 [1.10; 1.52]**
Religiosity			
Religious		1	1
Not religious		0.84 [0.76; 0.93]**	0.90 [0.81; 1.00]*
Atheist		0.69 [0.56; 0.86]**	0.80 [0.65; 0.99]*
Education Level			
Lower		1	1
Middle		0.86 [0.78; 0.95]**	0.92 [0.84; 1.02]
Higher		0.78 [0.70; 0.88]**	0.81 [0.72; 0.90]**
Age		1.00 [1.00; 1.00]	1.00 [1.00; 1.00]
Life satisfaction		1.29 [1.26; 1.31]**	1.30 [1.28; 1.33]**
Freedom of choice		1.04 [1.02; 1.05]**	1.04 [1.02; 1.06]**
Level 2			
GDP			1.00 [1.00; 1.00]
HDI			0.31 [0.00; 76714.41]
Threshold			
θ_1 Threshold 1-2	0.01 [0.01; 0.02]	0.13 [0.07; 0.25]	0.07 [0.00; 395.79]
θ_2 Threshold 2-3	0.10 [0.07; 0.14]	1.31 [0.68; 2.54]	0.66 [0.00; 3944.88]
θ_3 Threshold 3-4	1.82 [1.28; 2.59]	38.00 [19.58; 73.77]	17.36 [0.00; 103824.96]
Component of variance and model fit statistic			
τ_0^2 Variansi Intersep	0.2213	0.2303	1
ICC	0.0630	0.0654	0.2331
Deviance	21398.24	19093.72	19126.50
AIC	21406.25	19139.73	19176.50

secondary education) have a high percentage (55.21%) of feeling very happy.

Moving on, the average age of respondents in Southeast Asia is 42.1 years with a standard deviation of 14.62. The average of life satisfaction is 7.27 with a standard deviation of 2.20. These results indicate that the average respondents in Southeast Asia tend to be feeling more satisfied with their lives. Whereas the average freedom of choice is 7.13 with a standard deviation of 2.33. These results indicate that the average respondents in Southeast Asia tend to feel free to have choices.

Later, the average of GDP of Southeast Asia countries is 13982 USD with the standard deviation of 20705. These results indicate that the average of GDP across Southeast Asia countries in World Bank data is 13982 USD. Meanwhile, the average HDI of Southeast Asia countries is 0.76 with a standard deviation of 0.10. These results

indicate that the average HDI across Southeast Asia countries in UNDP data is 0.76.

Multilevel Model with Ordinal Variable

The multilevel model with an ordinal variable is formed using R 4.1.1 with an ordinal package developed by [25, 26]. A function used is `c1mm()` with link logit. Then the model estimation used is Maximum Likelihood Estimation (MLE). Models formed are three multilevel models with ordinal outcomes consisting of the null model, model 1, and model 2.

The null model is formed without including a predictor variable, so it will be predicted with only the intercept and randomly vary between groups. The obtained ICC value for the null model is 0.0630. This result shows that a 6.3% variation in the happiness level is caused by country diversity. Whereas the obtained DE value is 103.48. This indicates that a multilevel model can be

applied because the ICC value is greater than 0.05 and the DE value is greater than 2 [7]. Table 2 shows that the null model provides a deviance value of 21398.24 and an AIC value of 21406.25. The variance value is 0.2213 or a standard deviation of 0.4704. These results indicate that the diversity between countries is large enough.

Model 1 is formed by including variables on an individual level that consist of gender, marital status, health status, household income level, religiosity, education level, age, life satisfaction, and freedom of choice. The result in Table 2 shows that all variables are significantly affecting the happiness level in Southeast Asia countries except for age. Model 1 provides a deviance value of 19093.72 and an AIC value of 19139.73. These results are less than the deviance value and the AIC value of model 1. Nevertheless, the obtained intercept variance (0.2303) of model 1 is greater than the variance of the null model (0.2213).

Model 2 is formed by including variables on an individual level that consist of gender, marital status, health status, household income level, religiosity, education level, age, life satisfaction, and freedom of choice, as well as variables on the country level consisting of GDP and HDI. The result in Table 2 shows that all variables are significantly affecting the happiness level in Southeast Asia countries except for age on an individual level, as well as GDP and HDI on a country level. Model 2 provides the deviance value of 19126.50 and the AIC value of 19176.50. These results are greater than the deviance value and the AIC value of model 1. In comparison the obtained intercept variance (1) of model 2 is greater than the variance of the null model (0.2213) and model 1 (0.2303).

The result in Table 2 shows that the deviance value of model 1 (19093.72) is less than the deviance value of the null model (21398.24) and model 2 (19126.50). The AIC value of model 1 (19139.73) is also less than the AIC value of the null model (21406.25) and the model 2 (19176.50). These results indicate that Model 1 is better than the null model and Model 2 in analyzing factors that affect the happiness level of Southeast Asian respondents.

The odds ratio for gender is 1.14 with male as the reference category. This result indicates that female respondents (OR=1.14) have a higher probability of having higher happiness levels than male respondents in Southeast Asian countries. Other studies by [10, 11, 15] also reported that there is a positive relation between being female and happiness level. However, other studies reported that gender does not affect the happiness level [6, 27].

Respondents who are living alone or widowed are not statistically significant, then have the probability of having a happiness level as similar as respondents who are in married status. Whereas respondents who are in divorced status (OR=0.59), separated (OR=0.42), and living alone (OR=0.79) have an odds ratio of less than 1, they have a lower probability of having a lower happiness level than respondents who are in married status. In other words, respondents who are married have

a higher probability of having higher happiness levels. This finding aligns with [5, 6, 27] who reported that respondents who are married status have a higher probability of having higher happiness levels than respondents who are divorced, separated, widowed, or living alone status. [11] also reported that there is a positive relation between married status or living together to happiness level, and also a negative relation between divorced, separated, widowed, and single to happiness level. This result also can be found in the study by [28] who reported that respondents who are married status have a higher probability of having higher happiness levels followed by single status, in comparison respondents who are in divorced status have rather happy happiness levels. Married people tend to be happier because the couple has good interpersonal relationships and emotional support in facing problems [27]. Married people are associated with a lower degree of loneliness, they also experience more positive emotions, greater life satisfaction, and fewer negative emotions than divorced people [2, 29].

Respondents who have poor health or fair health (subjective) are not statistically significant, so they have having similar probability of having a happiness level. Meanwhile, respondents who have good health (OR=2.53) and very good health (OR=7.68) have had higher probability of having higher happiness levels than respondents who have very poor health. This finding aligns with [11, 15] who reported that there is a positive relation between health status and happiness level. This means healthier people tend to be happier people. Improving citizens' health status also means improving citizens' well-being, as the government should do, such as improving access to healthcare services. As stated previously, a country that has higher well-being level means the society's needs have been fulfilled. In other words, respondents who have higher health status will have a lower probability of having lower happiness levels. This result also can be found in [5, 6, 28] who reported that respondents with higher health status will have a lower probability of having lower happiness levels.

The household income level significantly affects the happiness level of Southeast Asian respondents. Respondents who have medium household income (OR=1.18) or higher household income (OR=1.41) were associated with a higher probability of having higher happiness levels compared to respondents who have lower household income. Previous studies [10, 11, 15, 27, 30] also reported that household income level has a positive effect on happiness level. This can affirm "money does buy happiness" which means income is important for happiness. Also, as stated in the background of this study, a country that has higher well-being level means the society's needs have been fulfilled. One of the government's means is supporting the basic financial needs of the household that has lower income. In other words, it is said that respondents who have higher incomes will have a lower probability of having lower happiness levels. A similar result also can be found in [6].

Religiosity statistically affects the happiness level of Southeast Asian respondents. Respondents who are not a religious person (OR=0.84) and an atheist (OR=0.69) have a lower probability of having a lower happiness level. In other words, religious respondents have a higher probability of having higher happiness levels. This result is similar to [11] who reported with the same ordinal variable that there is a negative relation between religiosity to happiness level. Another study by [6] also reported that respondents with higher religiosity will have a higher probability of having higher happiness levels. Also study by [27] reported that the probability of a religious person is higher than respondents who are atheists. Religious people tend to be happier people. Most of them are taught to be grateful people. Many prior studies said that gratitude can improve happiness.

Education level significantly affects the happiness level of Southeast Asian respondents. Respondents with middle education level or ISCED 3-4 (upper secondary education up to post-secondary non-tertiary education) (OR=0.86) and higher education level or ISCED 5-6 (short-cycle tertiary education up to bachelor or equivalent) (OR=0.78) having lower probability of having lower happiness level than respondents with lower education level or ISCED 0-2 (early childhood education up to lower secondary education). It also can be said that people with higher education levels have a higher probability of having higher happiness levels. These results similar to [5, 6] that respondents with higher education levels will have a higher probability of having higher happiness levels. Also, can be found in [10, 28, 30] which said there is a positive relation between education level and happiness level. As [27] reported that having higher education will increase happiness levels. Higher education may lead to a better job, so it can cause higher income and higher happiness levels

There is no relation between the age and happiness level of Southeast Asian respondents. This result is similar to the study by [31]. However, this result is not similar to the study by [6] who reported that getting older can increase the probability of having a higher happiness level. Other studies by [10, 27, 28] report that the probability of age affecting happiness level is having a U curve with squared age. It also can be said that people tend to be happier when they are younger and older than when they are middle-aged. [28] also reported that as people get older, they can adjust to the changes in their lives over time.

Life satisfaction significantly affects the happiness level of Southeast Asian respondents. This result indicates that respondents with higher life satisfaction will have a higher probability of having a higher happiness level. It also can be said that respondents with higher life satisfaction will have a lower probability of having a lower happiness level. This result can be found in [6] who reported similar results. The significant mutual influence between life satisfaction and happiness is found in a prior study by [32]. It is said superior life satisfaction leads to a higher happiness level and happier people have a better life satisfaction. This study also

reports a bidirectional relation between happiness and life satisfaction. Nevertheless, more studies are recommended to find out the further about its relation. Based on those results, happiness level can be measured by life satisfaction. People with higher life satisfaction tend to be happier. This can be caused by achieving a good quality of life.

Freedom of choice significantly affects the happiness level of Southeast Asian respondents. This result indicates that respondents with higher freedom of choice will have a higher probability of having higher happiness levels. This result was also reported in a study by [11] that freedom of choice has a positive effect on happiness levels. As [11] reported that people should have the right to freedom of choice, such as the freedom to have, to adopt a religion, or to express feelings and emotions. A religious group that promotes good values such as freedom of choice may improve the happiness level of their members [11]. In line with that study, WHR 2022 also reported that people with higher freedom of choice feel they have the freedom to make key life choices and help strangers and other forms of benevolence [4].

CONCLUSION

According to multilevel analyses with the happiness level of Southeast Asian respondents as an ordinal outcome based on WVS Wave 7 data revealed the Intraclass Correlation (ICC) value in null model of 6.3% which means that variation in happiness level is caused by country diversity and the Design Effect (DE) value of 103.48. These results (ICC >5% and DE >2) indicate that the multilevel model should be used to determine factors affecting the happiness level of Southeast Asian respondents. The AIC value and the deviance value on model 1 (19139.73; 19093.72) are lower than the null model (21406.25; 21398.24) and model 2 (19176.50; 19126.50), hence the best model for determining factors affecting the happiness level of Southeast Asian respondents is model 1 using individual level variables. The individual level variables that significantly affect the happiness level of Southeast Asian respondents are gender, marital status, health status, household income level, religiosity, education level, life satisfaction, and freedom of choice. Yet, age does not affect the happiness level. At the same time, variables on the country level which are included in model 2 did not affect the happiness level.

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