# The Vietnamese Version of the Gratitude Questionnaire (GQ) and the Revised Short Gratitude, Resentment, and Appreciation Test (S-GRAT): Psychometric Properties Among Adolescents[1]

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**Abstract:**  There is a lack of validated instruments to measure gratitude in Vietnamese adolescents; this issue is regarded as a significant impediment to progress in implementing empirical research on the gratitude of Vietnamese adolescents. The aim of this study, therefore, was to validate the Vietnamese translation of the Gratitude Questionnaire (GQ) and the Revised Short Gratitude, Resentment, and Appreciation Test (S-GRAT), using two independent samples of Vietnamese adolescents in two studies. In Study 1, Sample 1 ($N = 365$, female $n = 173$) completed the Vietnamese GQ (GQ-VN) and S-GRAT (S-GRAT-VN). Confirmatory factor analysis showed that the 5-item version of the GQ-VN and the 15-item version of the S-GRAT-VN fitted the data adequately. Both instruments showed satisfactory internal consistency. In Study 2, Sample 2 ($N = 202$, female $n = 93$) completed the GQ-VN and S-GRAT-VN, along with the Satisfaction With Life Scale. The GQ-VN and S-GRAT-VN were found to be positively correlated with each other and with the construct of life satisfaction, confirming the convergent and predictive validity of the two questionnaires. All the findings support the validity and reliability of the Vietnamese GQ and S-GRAT in a sample of Vietnamese adolescents. These two instruments, therefore, may facilitate the evaluation of factors associated with adolescent dispositional gratitude in Vietnamese settings.

**Key words:**  Gratitude Questionnaire (GQ), Revised Short Gratitude, Resentment, and Appreciation Test (S-GRAT), Vietnamese, adolescent, psychometric properties.

With the emergence of positive psychology at the end of the 1990s, gratitude, together with other concepts such as optimism, life satisfaction, happiness, well-being, compassion, and self-compassion, have been widely recognized in the literature. Gratitude is operationally defined as a "generalised tendency to recognise and respond with grateful emotion to the roles of other people's benevolence in the positive experiences and outcomes that one obtains" (McCullough, Emmons, & Tsang, 2002, p. 112). Previous studies have revealed the psychological benefits of gratitude activities, such as increased positive affect, social connection, and decreased negative affect (Davis et al., 2016).

More significantly, gratitude is one of the positive characteristics that could, and should, be taught in schools (Seligman, Ernst, Gillham,

Reivich, & Linkin, 2009) by the collaborative work of teachers, school counselors, administrators, and other school staff, and should become a part of school culture. A growing body of cross-sectional and longitudinal research shows that gratitude has a strong relationship with better psychological outcomes of students, such as increased life satisfaction, increased positive affect, and decreased internalizing and externalizing of problems (Sun, Sun, Jiang, Jia, & Li, 2019; You, Lee, Lee, & Kim, 2018). Gratitude also increases engagement and academic achievement (King & Datu, 2018; Zhen et al., 2019) and is also a powerful predictor of friend and school satisfaction (Guse, Vescovelli, & Croxford, 2017; Tian, Pi, Huebner, & Du, 2016). Studies reveal that school-based gratitude interventions promote school belonging (Cripps, 2019), engagement (King & Datu, 2018), and protection from anxiety and home- and school-based stress (Cripps, 2019; Ma, Kibler, & Sly, 2013; Pulkit & Kamlesh, 2016).

## Measurement of Gratitude in Adolescents

Several interventions targeting gratitude for students have been conducted in school settings across the world (Renshaw & Rock, 2018). In this context, valid and reliable instruments to measure gratitude in children and adolescents in school-based intervention studies have been used. A scientific evaluation of gratitude intervention programs depends on measures that rigorously and effectively assess the dimensional nature of gratitude in children and adolescents. Accordingly, the adaptation of adult gratitude scales and questionnaires for use in school-aged populations, and across cultures, is required.

To measure gratitude, several instruments exist for adult populations. Among these, two valid and reliable measures of gratitude, the Gratitude Questionnaire (GQ; McCullough et al., 2002) and the Revised Short Gratitude, Resentment, and Appreciation Test (S-GRAT; Watkins, Woodward, Stone, & Kolts, 2003) have been widely used. The GQ includes six items measuring dispositional gratitude as a single factor, based on four different facets that distinguish more grateful individuals from less grateful ones. In comparison to their counterparts, more grateful people experience gratitude: (a) more intensely for a positive event, (b) more frequently throughout the day, with (c) greater density for any given benefit (i.e., towards more people), and (d) across a wider span of experiences (e.g., for their families, friends, teachers, jobs, and health; McCullough et al., 2002). The S-GRAT's subscales assess gratitude disposition based on three aspects of gratitude: Simple Appreciation (six items), Lack of a Sense of Deprivation (six items), and Appreciation for Others (four items). The GQ and S-GRAT have been validated in adult populations in many countries, including Italy (Caputo, 2016), the Netherlands (Jans-Beken, Lataster, Leontjevas, & Jacobs, 2015), Chile (Langer, Ulloa, Aguilar-Parra, Claudio, & Gonzalo, 2016), and Turkey (Oğuz-Duran, 2017; Yüksel & Oğuz-Duran, 2012).

To the best of our knowledge, however, very little research has focused on adapting these instruments for use in the school-aged population. The psychometric properties of the two scales in children and adolescents were investigated in a Western sample by Froh et al. (2011). Using single-group and multiple-group confirmatory factor analyses (CFAs), they found that the factor structures of these gratitude scales resemble those found with adults (McCullough et al., 2002; Watkins et al., 2003) and were invariant across age groups (10–19 years old). Scores of the two gratitude scales had acceptable internal consistency estimates across age groups. However, Item 6 ("Long amounts of time can go by before I feel grateful to something or someone") of the GQ had lower factor loadings compared to other items in the youth sample, and was found to be "difficult to understand" and "very abstract" by adolescents through an informal interview. Item 2 ("Life has been good to me") of the S-GRAT was poorly regarded on all three factors, and the meaning was too vague (Froh et al., 2011). Froh et al. (2011) concluded that these two items were not appropriate for adolescents and decided to remove them from the

questionnaires in order to obtain satisfactory psychometric properties. There were moderate positive correlations between the GQ and the S-GRAT across all age groups. The construct validity of the GQ was also supported by the scales of positive affect and life satisfaction (Froh et al., 2011). These findings confirmed that these instruments could be effectively used on Western children and adolescents from 10 to 19 years of age, with a total of five items of the GQ and 15 items of the S-GRAT.

Recently, the GQ has been validated in both non-Western and Western samples, including Chinese adolescents ($N$ = 2,093, aged 11–16 years; Zeng, Ling, Huebner, He, & Lei, 2017), Filipino adolescents ($N$ = 838, aged 13–16 years; Valdez, Yang, & Datu, 2017), Spanish adolescents ($N$ = 569, aged 14–17 years; Rey, Sánchez-Álvarez, & Extremera, 2018), and Chilean adolescents ($N$ = 668, aged 12–20 years, $M_{age}$ = 15.54 years; Langer et al., 2016). The results from all of these studies confirm that the one-factor model with five items (Item 6 was excluded) fitted the data adequately. Furthermore, the internal consistency of the GQ was satisfactory and the convergent, as well as divergent, validity were also justified with the support of other scales, such as those on life satisfaction, autonomous motivation, hopelessness, optimism, and anxiety. These findings are consistent with the previous research findings of Froh et al. (2011) and indicate that the GQ of five items (GC-5) appears to be a reliable and valid measure of gratitude among non-Western and Western adolescent samples.

Moreover, to the best of our knowledge, while the GQ has recently been validated with both Western and non-Western adolescent samples, the S-GRAT has rarely been validated with an adolescent population. As mentioned above, only the study of Froh et al. (2011) examined the validity and reliability of this measure, among US adolescents from 10 to 19 years old. Recently, Oğuz-Duran (2017) validated the S-GRAT with Turkish college students in three separate studies ($N$ = 974; aged 17–44 years; $M_{age}$ = 20.27 years, 21.09 years, and 19.88 years, respectively). These findings confirmed good psychometric qualities of the Turkish S-GRAT for use with Turkish college students. More significantly, there remains a lack of understanding of the cultural differences in the concept of gratitude (Naito & Washizu, 2015). Future research, therefore, should continue adapting these instruments for use in adolescent populations across cultures.

## Relationship Between Gratitude and Life Satisfaction in Adolescents

Life satisfaction is a critical component of subjective well-being (SWB) and is defined as an "individual's cognitive judgement about comparisons based on the compatibility of their own living conditions with the standards" (Diener, Emmons, Larsen, & Griffin, 1985). Several studies have been conducted to show that life satisfaction is associated with gratitude in the adolescent population.

A study by Guse et al. (2017), conducted on 840 South African adolescents (aged 14–18 years), showed that both state and trait gratitude were significantly and positively correlated to all of the life satisfaction measures (i.e., family, school, friends, self, living). In the same vein, in a study on 930 Korean early adolescents (aged 10–12 years), You et al. (2018) found that those experiencing higher gratitude during early adolescence reported having more feelings of positive life satisfaction. The studies by Datu and Mateo (2015) on 409 Filipino adolescents (aged 17–21 years), Rey et al. (2018) on 569 Spanish adolescents (aged 14–17 years), and Froh, Yurkewicz, and ve Kashdan (2009) on 154 US adolescents (aged 11–13 years) reported similar findings. The gratitude educational intervention study by Pulkit and Kamlesh (2016) on 117 Indian adolescents (aged 11–14 years) suggested significant effects on psychological well-being, positive affect, positive feelings, and life satisfaction.

In general, these studies reveal that gratitude can predict higher satisfaction with life among adolescents. In the studies by Froh et al. (2011), Zeng et al. (2017), and Rey et al. (2018), evidence for the predictive validity of the GQ-5 was also provided through the

relationship between the GQ-5, S-GRAT, and life satisfaction in adolescents. However, empirical data available for the relationship between gratitude and well-being-related concepts in the adolescent population are still scant and need to be extended (Naito & Washizu, 2015).

## The Current Study

In Vietnam, greatly influenced by Confucianism, the basic education system has long put considerable emphasis on gratitude education for school students (Hoang, 2013). Nonetheless, in this modern consumer society, the ability of adolescents to be grateful is disappearing due to economic issues and the overall population increase (Huynh, 2009). Sixty percent ($N = 874$) of Vietnamese undergraduate students take it completely for granted that parents have to take care of them and raise them; 42% rarely said thank you when receiving support from others (Huynh, 2009); and 69% ($N = 354$) tended to pursue materialistic values (Phan, 2012). As a result, many parents fall into depression and helplessness, with disobedient, disrespectful, and ungrateful children (Le, 2019). More than ever, Vietnamese students should be trained to maintain a simple sense of being able to value what they have, what they experience, and not take everything for granted (Huynh, 2009; Phan, 2012). School-based life skills programs (including gratitude) have increasingly been conducted, aiming to help Vietnamese students develop the habits of gratitude that have been identified as the steppingstones to greater happiness and success (N. L. Nguyen & Nguyen, 2019). Therefore, it is imperative to incorporate guidance using systematic evidence-based approaches that can be employed in practice.

Empirical research on the gratitude of Vietnamese school students is surprisingly limited, however. We identify the lack of age-appropriate measurement instruments of gratitude as a key impediment in the endeavor to implement empirical studies and propose that the adaptation and validation of such instruments will address the fragmentation of the field. It is important, therefore, to adapt self-report measures of gratitude from the recent literature for Vietnamese adolescents.

The main goal of the current study was to adapt the GQ and S-GRAT in the Vietnamese cultural context. In Study 1, we translated and examined the factor structure of the GQ and S-GRAT in a sample of Vietnamese adolescents. Additionally, internal consistency evidence for the two instruments was tested. In Study 2, to test the convergent validity and predictive validity, we inspected whether: (a) the GQ was interrelated with the S-GRAT and its subscales; and (b) the GQ and S-GRAT and its subscales differently predicted life satisfaction in Vietnamese adolescents. We expected the GQ and S-GRAT and its subscales to be significantly correlated, and gratitude to be positively related to life satisfaction.

## Study 1

### Methods

**Translation procedure.** The GQ and S-GRAT were separately translated into Vietnamese by two independent researchers. Based on the suggestions of Sousa and Rojjanasrirat (2011), the first translator was knowledgeable about psychology and the content area of the instrument construct in the desired target language. The second translator was neither aware nor informed of the concepts quantified, but was acquainted with informal phrases, idiomatic expressions, and emotional terms in common use in the Vietnamese language. The two translated versions were compared, with any ambiguities and discrepancies discussed and resolved to come up with a compromise in the final version. Some items were adapted, simplified, and reworded to fit the understanding of Vietnamese adolescents, while still reflecting the core meaning of the originals. Specifically, we found the meaning of the item "I am grateful to a wide variety of people" in the GQ too broad, and tried to specify it as follows: "I am grateful to so many people, from my relatives (grandparents, parents), friends, teachers, to those who contribute to my life (e.g., farmers, janitors, my school guards)."

In the S-GRAT, we found two lengthy items of the Appreciation of Others subscale that seemed to measure two aspects at the same time: "Although I think it's important to feel good about your accomplishments, I think that it's also important to remember how others have contributed to my accomplishments", and "Although I'm basically in control of my life, I can't help but think about all those who have supported me and helped me along the way." We shortened these to "I think that it's also important to remember how others have contributed to my accomplishments" and "I always think about all those who have supported me and helped me along the way."

**Participants and procedure.** The data were collected from adolescent students who were randomly selected from two secondary and two high schools of Thua Thien Hue Province, Vietnam. Two classes were randomly selected in each school. All students in each class were invited to participate in the survey. Participating students filled out a self-report questionnaire during school time. Students had 15 min to complete the whole questionnaire. The survey proctors administered the questionnaires, while the researchers were available during the survey session to answer any questions raised by the participants. Informed consent was obtained from all the participants. Accordingly, participation in the study was entirely voluntary and anonymous. The participants could withdraw from the survey at any moment, without consequence and without giving any reason, and all responses were kept confidential.

In total, the data of 365 adolescents—male, $n = 192$ (53%); female, $n = 173$ (47%); 6th grade, $n = 86$ (24%); 8th grade, $n = 80$ (22%); 10th grade, $n = 155$ (42%); and 11th grade, $n = 44$ (12%)—were included in the analysis.

**Measures.** The grateful disposition was measured with Vietnamese translated versions of the GQ (McCullough et al., 2002) and S-GRAT (Watkins et al., 2003).

**Gratitude Questionnaire.** The GQ includes six items measuring individual

differences in the propensity to experience gratitude in daily life, using a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items include "I have so much to be thankful for" and "If I had to list everything that I felt grateful for, it would be a very long list." GQ scores demonstrated good internal consistency ($r > .70$) and a robust one-factor solution in adolescent samples ranging from 10 to 19 years old (Froh et al., 2011). As recommended by Froh et al. (2011), for the adolescent population, the last item of the GQ (i.e., "Long amounts of time can go by before I feel grateful to something or someone") was removed, resulting in the five-item version being used in this study.

**Revised Short Gratitude, Resentment, and Appreciation Test.** The S-GRAT (Thomas & Watkins, 2003) measures individuals' sense of abundance in life and appreciation of others. It includes three subscales with 16 items: (a) Lack of a Sense of Deprivation (LOSD; six items, e.g. "I really don't think that I've gotten all the good things that I deserve in life"), (b) Simple Appreciation (SA; six items, e.g. "I think it's important to appreciate each day that you are alive"), and (c) Appreciation for Others (AO; four items, e.g. "I couldn't have gotten where I am today without the help of many people"). The Likert scale ranged from 1 (*I strongly disagree*) to 9 (*I strongly agree (with the statement)*). The S-GRAT demonstrated satisfactory internal consistency ($r > .70$), and a robust three-factor solution in adolescent samples ranging from 10 to 19 years old; as is convergent validity (Froh et al., 2011). As recommended by Froh et al. (2011), for the adolescent population, Item 2 from the LOSD subscale (i.e., "Life has been good to me") was removed, resulting in a 15-item version being used in this study.

**Data analyses.** To test the construct validity of the questionnaire, based on the original theory by McCullough et al. (2002) and Watkins et al. (2003), we submitted the data for confirmatory factor analysis using Mplus 8.0 software to assess the goodness of fit of the models. The covariance matrix of the items was analyzed

**Table 1**   Factor loadings of one-factor CFA of the Gratitude Questionnaire – Vietnamese (GQ-VN)

| No | Item | Factor loadings | $M$ | $SD$ |
|----|------|-----------------|-----|------|
| 1 | I have so much in life to be thankful for | .76 | 5.5 | 1.35 |
| 2 | If I had to list everything that I felt grateful for, it would be a very long list | .63 | 5.0 | 1.37 |
| 3 | When I look at the world, I don't see much to be grateful for | .31 | 4.7 | 1.81 |
| 4 | I am grateful to so many people, from my relatives (grandparents, parents), friends, teachers, to those who contribute to my life (e.g., farmers, janitors, my school guards) | .52 | 6.1 | 1.22 |
| 5 | As I get older, I find myself more able to appreciate the people, events, and situations that have been part of my life history | .50 | 5.9 | 1.26 |

*Note.* Item 3 is reverse scored. Item 4 was rephrased.

with the maximum likelihood method. Regarding the Vietnamese GQ (GQ-VN), a one-factor model was tested. In terms of the Vietnamese S-GRAT (S-GRAT-VN), a three-factor model was tested: SA (six items), LOSD (five items), and AO (four items). Furthermore, two alternative models were also tested and compared. First, a hierarchical model in which the three first-order factors were produced by a higher-order factor of overall gratitude was assessed. Second, the two-factor model was also investigated, in which LOSD was the first factor and SA and AO were merged into the second factor, called "appreciation for others."

The ratio of chi-square to its degrees of freedom ($\chi^2/df$), comparative fit index (CFI), standardized root-mean-square residual (SRMR), and root-mean-square error of approximation (RMSEA) were considered as the goodness-of-fit indices. The fit of the models was considered adequate when $\chi^2/df \leq 2.0$, $.90 \leq CFI \leq .95$, $RMSEA \leq .08$, and $SRMR \leq .08$ (Hu & Bentler, 1999; Kline, 2011; Marsh, Hau, & Wen, 2004; Tabachnick & Fidell, 2007).

The reliability of the scale scores was measured via the internal consistency coefficient alpha (Cronbach, 1951). Because reliance on Cronbach's α as a sole index of reliability is no longer considered sufficient, we also evaluated the average interitem correlation and average item–total correlations to estimate internal consistency, as recommended by John and Benet-Martínez (2000). Accordingly, average interitem correlations should fall between .15 and .50, as anything below .15 would be too broad of a construct, while anything above .50 would indicate redundancy of items.

Moreover, average item–total correlations would be over .30 (Cristobal, Flavian, & Guinaliu, 2007).

## Results

Initially, Mplus produced marginal fit indices for the whole sample for the one-factor model of GQ-VN. The CFA first showed an inadequate model fit with the unsatisfactory value of normed $\chi^2$ and RMSEA (normed $\chi^2$ = 5.35, CFI = .90, RMSEA = .11, and SRMR = .04). Based on modification indices, the goodness of fit of these models was improved by allowing error correlations between Items 4 and 5 ($r$ = .37). As expected, the CFA revealed a good model fit: normed $\chi^2$ = 1.44, CFI = .99, RMSEA = .03, and SRMR = .20. The standardized loadings of this model displayed in Table 1 were all significant, although Item 3 had a relatively lower factor loading. Internal consistency reliability was .69; average interitem correlations were .31, and average item–total correlations were .44.

Based on the original theory of Watkins et al. (2003), a CFA with robust maximum likelihood estimation was performed to evaluate the fitness of a one-factor model for each component of gratitude, separately. For the LOSD subscale, the model fit the data quite well (normed $\chi^2$ = 1.27, CFI = .99, RMSEA = .03, and SRMR = .03). However, for the two other subscales, all goodness indices were satisfactory except for $\chi^2 > 2.0$. A review of the modification indices suggested that fit could be improved by allowing error correlations among some items within subscales (i.e., Items 8 and 5; Items

**Table 2**    Short Gratitude Resentment and Appreciation Test – Vietnamese (S-GRAT-VN)

| No | Item | Factor | Factor loadings | M | SD |
|---|---|---|---|---|---|
| 1 | I could not have gotten where I am today without the help of many people | AO | .54 | 7.17 | 2.10 |
| 2 | There never seems to be enough to go around, and I never seem to get my share | LOSD | .53 | 4.4 | 2.44 |
| 3 | Oftentimes, I have been overwhelmed at the beauty of nature | SA | .44 | 6.48 | 2.32 |
| 4 | I think that it's also important to remember how others have contributed to my accomplishments | AO | .75 | 7.23 | 1.93 |
| 5 | I really do not think that I've gotten all the good things that I deserve in life | LOSD | .49 | 5.0 | 2.41 |
| 6 | Every fall, I really enjoy watching the leaves change colors | SA | .26 | 5.76 | 2.50 |
| 7 | I always think about all those who have supported me and helped me along the way | AO | .66 | 7.08 | 1.84 |
| 8 | I think that it's important to "Stop and smell the roses" | SA | .59 | 7.41 | 2.04 |
| 9 | More bad things have happened to me in my life than I deserve | LOSD | .62 | 5.00 | 2.54 |
| 10 | Because of what I've gone through in my life, I really feel like the world owes me something | LOSD | .49 | 3.3. | 2.40 |
| 11 | I think that it's important to pause often to "count my blessings" | SA | .71 | 7.19 | 1.92 |
| 12 | I think it's important to enjoy the simple things in life | SA | .72 | 7.40 | 1.83 |
| 13 | I feel deeply appreciative for the things others have done for me in my life | AO | .73 | 7.42 | 1.70 |
| 14 | For some reason, I do not seem to get the advantages that others get | LOSD | .57 | 5.4 | 2.46 |
| 15 | I think it's important to appreciate each day that you are alive | SA | .68 | 7.86 | 1.75 |

*Note.* Factor 1: SA = Simple Appreciation; Factor 2: LOSD = Lack of a Sense of Deprivation; Factor 3: AO = Appreciation for Others. Items 2 and 14 were rephrased.

11 and 4). After allowing for error correlations, the model fit the data sufficiently: SA, normed $\chi^2$ = 1.92, CFI = .96, RMSEA = .06, and SRMR = .04; and AO, normed $\chi^2$ = 1.41, CFI = .99, RMSEA = .03, and SRMR = .01.

Next, an overall three-factor CFA model was used with 15 items of the S-GRAT-VN. As expected, this three-factor model demonstrated adequate fit to the data (normed $\chi^2$ = 1.85, CFI = .93, RMSEA = .05, and SRMR = .06).

Two alternative models were also evaluated via CFA to seek a better model fit. The hierarchical model, in which the three first-order factors were produced by a higher-order factor of overall gratitude, also fitted the data quite well: normed $\chi^2$ = 1.92, CFI = .91, RMSEA = .06, and SRMR = .06. Internal consistency for the 15-item S-GRAT-VN was .71 (by reverse coding responses to the negatively worded LOSD items). However, this model was not better than the three-factor model ($\Delta\chi^2$ = 41.023, $p$ < .001; $\Delta$CFI = .02). A two-factor model was tested, where LOSD was the first factor and SA and AO merged into the second factor. A good fit was obtained for the alternative model (normed $\chi^2$ = 1.96, CFI = .90, RMSEA = .05, and SRMR = .06). However, this model was not better than the two-factor model ($\Delta\chi^2$ = 44.939, $p$ < .001; $\Delta$CFI = .03). Therefore, the best model fit was the three-factor model, as the original model suggested by Watkins et al. (2003). The standardized loadings of this model, displayed in Table 2, were all significant, although Item 2 yielded a relatively lower factor loading.

The internal consistency reliability of each S-GRAT-VN subscale was acceptable and is presented in Table 3.

Next, correlations between the three subscales are presented in Table 4. As can be seen,

**Table 3** Internal consistencies and descriptives of the S-GRAT-VN subscales

| | # items | Cronbach's alpha | Average $r$item, item | Average $r$item, total | M | SD |
|---|---|---|---|---|---|---|
| SA | 6 | .74 | .32 | .47 | 4.34 | 1.61 |
| LOSD | 5 | .68 | .29 | .46 | 7.01 | 1.33 |
| AO | 4 | .76 | .44 | .56 | 7.22 | 1.44 |

*Note.* SA = Simple Appreciation; LOSD = Lack of a Sense of Deprivation; AO = Appreciation for Others.

**Table 4** Intercorrelation between factors

| | SA | LOSD | AO |
|---|---|---|---|
| SA | — | −.18** | .62** |
| LOSD | | — | −.08 |
| AO | | | — |

*Note.* SA = Simple Appreciation; LOSD = Lack of a Sense of Deprivation; AO = Appreciation for Others.
** $p < .01$.

most of these intercorrelations between factors were meaningful.

# Study 2

## Methods

**Participants and procedure.** The data were collected from adolescent students who were randomly selected from two high schools of Thua Thien Hue Province, Vietnam. Two classes were randomly selected in each school. All students in each class were invited to participate in the survey. Prior to the survey, the participants were provided with informed consent forms containing information about the purpose of the study, procedures, benefits and risks of participating, voluntary participation, and contact information of the researchers. Later, the volunteer participants completed the self-report questionnaire within a classroom setting. Administration of the survey took around 15 min under the oversight of a research staff member. School staff were not involved in administering the survey.

Finally, the data of 202 adolescents—males = 108 (53.7%), females = 93 (46.3%), 10th grade = 157 (78.1%), 11th grade = 44 (21.9%)—were included in the analysis.

**Measures.** The two newly validated Vietnamese versions of the GQ and S-GRAT and the Satisfaction With Life Scale were used to test the predictive validity of the instruments.

**Satisfaction With Life Scale.** The Satisfaction With Life Scale, a five-item instrument, was used to measure the life satisfaction component of the subjective well-being of adolescents. The items were designed to assess satisfaction with people's lives as a whole, and not to assess satisfaction with specific life domains (e.g., "I am satisfied with my life" and "The conditions of my life are excellent"). Adolescents indicated how much they agreed or disagreed with each of the five items using a 7-point scale, ranging from 7 (*strongly agree*) to 1 (*strongly disagree*). In Vietnam, this scale was underscored in P. C. T. Nguyen and Nguyen's (2012) study on medical university students with satisfactory reliability ($\alpha = .79$). In the present study, Cronbach's alpha was acceptable (.80).

**Data analyses.** In psychometrics, convergent validity can be established if two similar constructs correspond with each other, and predictive validity is the extent to which a score on a scale or test predicts scores on some criterion measure (Gregory, 2007). Therefore, to test convergent validity, Pearson product–moment correlation coefficients were calculated to explore the relationships between the GQ and the S-GRAT-VN. For predictive validity testing, correlation and multiple regression analyses were conducted using the Vietnamese GQ and S-GRAT, and the Satisfaction With Life Scale (Diener et al., 1985). SPSS 22.0 was used for correlation and multiple regression analyses.

**Table 5** Intercorrelation between GQ-VN and S-GRAT-VN

|  | GQ-VN |
|---|---|
| SA | .20** |
| LOSD | .11 |
| AO | .18** |
| S-GRAT-VN | .26** |

*Note.* GQ-VN = Gratitude Questionnaire – Vietnamese; SA = Simple Appreciation; LOSD = Lack of a Sense of Deprivation; AO = Appreciation for Others; S-GRAT-VN = Revised Short Gratitude, Resentment, and Appreciation Test – Vietnamese.
** $p < .01$.

**Table 6** Correlations and standardized regression coefficients among gratitude and adolescent life satisfaction

|  | $r$ | Life satisfaction β |
|---|---|---|
| GQ-VN | .37** | .37** |
| S-GRAT-VN | .37** | .37** |
| SA | .19** | .20 |
| LSOD | −.24** | −.28** |
| AO | .26** | .13 |

*Note.* GQ-VN = Gratitude Questionnaire – Vietnamese; S-GRAT-VN = Revised Short Gratitude, Resentment, and Appreciation Test – Vietnamese; SA = Simple Appreciation; LOSD = lack of a sense of deprivation; AO = Appreciation for Others.
** $p < .01$.

## Results

We tested the intercorrelations between GQ-VN and S-GRAT-VN to confirm the convergent validity of these two measures of constructs that, theoretically, are related. The results showed that there was a positive relationship between the two measures (Table 5).

Furthermore, we tested the extent to which a score on the GQ-VN and S-GRAT-VN predicts the score on the Satisfaction With Life Scale.

As expected, the findings from Table 6 showed that grateful disposition measured by the GQ-VN and S-GRAT-VN was positively related to the life satisfaction of adolescents. Specifically, SA and AO were both positively related to life satisfaction, while LOSD was negatively related to life satisfaction. Regression analysis also showed that grateful dispositions measured by both the GQ-VN and S-GRAT-VN predicted the life satisfaction of adolescents and explained the 13% and 14% variance in life satisfaction of adolescents, respectively. Noticeably, among components, LOSD had a stronger relationship with life satisfaction, whereas SA had no predictive power for the life satisfaction of adolescents. Observing that the factors SA and AO were highly correlated ($r = .60$), we also detected the multicollinearity via the variance inflation factor (VIF) and the tolerance. The output showed that the VIFs for SA (1.50) and AO (1.49) were below 2.5, and the tolerance (.67 and .69, respectively) was above .40, which indicated some correlation, but not enough to be overly concerned with (Allison, 1999).

## Discussion

In the context that various school-based gratitude interventions are required to achieve an increase in the well-being and happiness of adolescents and teachers and that measuring the effects of these programs is challenging because of the lack of age-appropriate instruments, we adapted the GQ (McCullough et al., 2002) and S-GRAT (Watkins et al., 2003) with a sample of Vietnamese adolescents.

We proceeded with the CFA of a one-factor model for the GQ-VN and a three-factor model for the S-GRAT-VN. For the GQ, the one-factor model fitted the data adequately. The results showed that the five-item version of the GQ-VN fitted the data relatively well. This finding is consistent with previous research findings in both non-Western and Western adolescent samples (Froh et al., 2011; Langer et al., 2016; Rey et al., 2018; Valdez et al., 2017; Zeng et al., 2017). Furthermore, Item 3 demonstrated a lower factor loading than the other items; however, its item–total correlation was acceptable. This result is also consistent with studies on adolescent samples by Froh et al. (2001), Langer et al. (2016), Rey et al. (2018), Valdez et al. (2017), and Zeng et al. (2017), as well as studies on adult samples by Chen, Chen, Kee, Tsai, (2009) and Langer et al. (2016). However, as suggested by Chen et al. (2009), the inclusion of Item 3 in the measure is essential to the construct validity of the underlying conceptual

model of gratitude, though further research will be needed to continue confirmation of this solution. In the meantime, the existing literature, and our present study, have provided evidence on the cross-cultural generalizability of the five-item version of the GQ. This result also indicates that gratitude has a similar meaning for adolescents in both collectivist and individualist contexts.

The result showed that the three-factor model of the 15-item version of the SGRAT-VN represented the best fit to the data. Noticeably, although Item 3 of S-GRAT-VN had a low factor loading (<.30), the model was completely valid. We therefore decided not to remove this item from the model. In the studies of Froh et al. (2001) and Oǧuz-Duran (2017), the factor loading of Item 3 was also lower.

An alternative two-factor model was tested, but the three-factor model proved to be the best fit to the data. These findings correspond with the original S-GRAT in adult samples (Watkins et al., 2003) and with the adapted ones in adolescent samples (Froh et al., 2011) and adult samples (Oǧuz-Duran, 2017). The moderate and strong relationship between three factors of the S-GRAT-VN was meaningful and logical, confirming the interdependence of three dimensions of gratitude, as defined in the theory of Watkins et al. (2003).

In another aspect, the internal consistencies of the GQ-VN and the S-GRAT-VN were satisfactory. The Cronbach α values of the three S-GRAT-VN subscales were satisfactory, and ranged from .68 to .76. The averages of the interitem correlation ranged from .15 to .50, and the average of the item–total correlation was over .35. Nunnally and Bernstein (1994) indicated that newly developed or adapted measures can be accepted with an α value of .60; otherwise, .70 should be the threshold.

The convergent validity of these two scales was also confirmed via the intercorrelation within them. This finding may support Froh et al.'s (2011) study, in which moderate positive correlations were found across all age groups (from 10 to 19 years). The finding was also consistent with previous research findings with adult samples that the two questionnaires were strongly positively correlated, confirming that the two measures capture the same construct (Jans-Beken et al., 2015; Oǧuz-Duran, 2017).

As expected, the findings also showed the correlation between grateful disposition and life satisfaction of adolescents. Overall, the correlation findings indicated that adolescents with higher grateful disposition were likely to have higher life satisfaction. The regression findings also insist on the predictive role of gratitude on the life satisfaction of Vietnamese adolescents. This finding contributes to the confirmation of the predictive validity of the two scales, and also supports the conclusions from Futoshi (2013), Datu and Mateo (2015), Sumi (2017), and You et al. (2018) that cultivating gratitude may increase life satisfaction in adolescents and young adults.

In general, the findings of validity are in line with previous results in Western and Eastern countries and, in particular, findings in countries that have shared core Buddhist and Confucian values, such as China (Chen et al., 2009; Zeng et al., 2017) and Japan (Futoshi, 2013; Sumi, 2017). The findings in Eastern and Western countries seem to suggest that gratitude is a universal feeling in the broad sense, in which noticing and receiving something valuable causes feelings of appreciation for the positive in the world. Furthermore, the findings also consistently support the fact that the benefits of gratitude may prevail not only in Western individualistic societies but also in Eastern collectivistic societies.

**Limitations and Directions for Future Research**

The empirical results reported herein should be considered in light of some potential limitations that could be addressed in future research. The primary limitation to the generalization of these results is that the participant recruitment process was random from schools in urban areas within only a single province in Vietnam. Although this limits the generalizability of the results, it is believed that it represents a necessary and feasible first step in identifying useful concepts and relationships that could be later tested in larger and more representative samples.

The second limitation concerns the descriptive and correlational information produced from cross-sectional data alone, meaning that causation cannot be inferred. The findings, therefore, should be replicated in more elaborate research designs, such as longitudinal and experimental studies. One of the limitations of the study was related to translation procedures. Backwards translation of the two instruments was not carried out, which may have resulted in unclear wording in the final translations. Future research should use a back-translation technique to refine the meaning of the items. Moreover, the results of the present study are also limited, since the study focused only on construct validity, and test–retest reliability was not evaluated in the validation process. Future research should re-evaluate the reliability and validity of the instruments, in which other types of validity, and test–retest reliability should also be included.

Finally, there is a lack of extensive prior research in this field in Vietnam. This limitation affected the present research, as there did not appear to be a strong foundation upon which the research could be built. We therefore advocate future research to continue relying on relevant studies in similar cultures, such as China, Taiwan, and Japan.

## Conclusion

The results of this study primarily suggest that the GQ-VN and S-GRAT-VN are appropriate and valid instruments for measuring the grateful disposition of adolescents in an educational context. One factor of the GQ-VN scale and three factors of the S-GRAT-VN were identified and found to fit the model. The scales and subscales obtained good Cronbach α values, and together constructed a model with a good fit to the data. These two short, adapted questionnaires may further be used to measure the effects of gratitude intervention programs in school settings. Moreover, one possible interpretation of the results is that developing greater gratitude might help enhance the life satisfaction of adolescents. It would be very significant to include

gratitude training in school-based well-being interventions in Vietnam.

It is also noted that this was the first effort to adapt two comprehensive assessment tools to understand the level of gratitude of Vietnamese adolescents. There is more work to be done before this tool is complete. Once the assessment tool is more complete, then it can be used to collect data for many other studies, hopefully inspiring gratitude change in Vietnamese adolescents.

## Conflict of Interest

No conflict of interest in whatever form exists in relation to this study, for any of the authors. Moreover, this study has not been submitted before, nor is it under consideration for publication elsewhere.

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