

## Item Analysis for Gratitude Questionnaire 6 Items (CQ-6)

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**Abstract.** In this study, the researcher analyzed the GQ6 (Gratitude Questionnaire-six-items) from Emmons et al. (2002) which consists of four facets of gratitude and is measured by six items. This questionnaire is unidimensional. This scale measures the extent to which individuals feel grateful in terms of intensity, density, span, and frequency. This research involved 300 respondents who are residents of the greater areas of Jakarta. Reliability testing was carried out with Cronbach's alpha. Discriminant analysis is carried out by looking at the item rest correlation. The results of this study indicate that gratitude or GQ6 meets construct validity.

**Keywords:** *gratitude, positive emotion, adaptation*

### Introduction

Gratitude is related to positive emotions, such as hope, feelings of happiness, and optimism (Kausar, 2018). Being grateful is important because grateful individuals will appreciate and feel more satisfied with their lives (Emmons et al., 2002). They also tend to experience lower stress and are able to evaluate themselves more objectively, including in terms of social comparisons (Mao et al., 2020).

Peterson and Seligman (2004) explained that grateful individuals will be more able to accept themselves and tend not to feel jealous of other people's lives. Gratitude is defined as an individual's positive emotions where he feels satisfied or happy with his life experiences (Emmons et al., 2002). Gratitude is unidimensional but consists of four facets, that is intensity (how much gratitude you show), frequency (how often you are grateful), span (how much an individual is grateful in a certain period), and density (how grateful you are for what you have). According to Peterson and Seligman (2004), individuals with high gratitude will not reject or ignore negative things in their lives, but they choose to be grateful and enjoy what they have.

The score on this measurement is still the total score. The facet in this case is not a dimension, it only describes a form of grateful behavior. Respondents in this study were

emerging adults aged 18-25 years. Arnett & Murray (2019) define emerging adulthood as a transition period from adolescence to adulthood for individuals aged 19-25 years. Emerging adulthood is a period when an individual has reached physical and mental maturity but is still experiencing instability (Arnett et al., 2014). Gratitude for emerging adulthood helps them in carrying out developmental tasks such as building intimate relationships, managing careers and broader social relations, or building a family (Bono & Sender, 2018). Increasing gratitude is one method to reduce anger, envy, and negative affect while using social media in life for emerging adulthood (Sciara et al., 2021). Gratitude is associated with how emerging adults use social media. Moningka (2017) explains that the use of social media often makes individuals self-deprecating. Sciara et al. (2021) explained that emerging adults with high gratitude will take advantage of social media by expressing their gratitude to others and inviting others to be grateful and accept themselves. Gratitude Questionnaire-Six Item Form (GQ-6) is a measurement tool constructed by Emmons et al. (2002). The following is a blueprint of the GQ-6 measuring instrument.

Table 1.  
GQ-6 items by Emmons, et. Al (2002)

No.	Item
	<b>Intensity</b>
GQ1-I	<i>I have so much in life to be thankful for</i>
	<b>Density</b>
GQ2-D.	<i>If I had to list everything that I felt grateful for, it would be a very long list</i>
GQ3-D.	<i>When I look at the world, I don't see much to be grateful for</i>
GQ4-D.	<i>I am grateful to a wide variety of people</i>
	<b>Span</b>
GQ5-S.	<i>As I get older, I find myself more able to appreciate the people, events, and situations that have been part of my life history.</i>
	<b>Frequency</b>
GQ6-F.	<i>Long amounts of time can go by before I feel grateful to something or someone</i>

Table 2.  
*Blueprint Gratitude Questionnaire-6 by Emmons (2002)*

Facet	Item Number		Total
	Favorable	Unfavorable	
Intensity	1		1
Density	2,4	3	3
Span	5		1
Frequency		6	1
Total	4	2	6

The Gratitude Questionnaire-Six Item Form (GQ-6) score is obtained from the total score and then grouped according to the high and low levels of gratitude one has. The higher the GQ-6 score of an individual, the greater the gratitude he has, conversely the lower the GQ-6 score, the less grateful the individual tends to be.

Research regarding the adaptation of measuring instruments and item analysis needs to be carried out to ensure that the items in the measurement are valid and reliable, especially when used in different cultural contexts. In this study, researchers are interested in analyzing items from GQ-6 that have been adapted in Indonesian.

### Method

This study used convenience sampling, with the research area in the greater area of Jakarta. This study uses a fairly large sample. With an adequate number of samples, a quantitative approach will make the calculation results more accurate. Baharum et al. (2023) explain that the minimum sample size required for the small indicator is 100-150 and between 250 and 500 to achieve good analysis for CFA.

The researcher adapted the Gratitude Questionnaire-6 (GQ-6) from Emmons et al. (2002) which consisted of 6 statements with 5 response choices from strongly disagree (with a score of 1) to strongly agree (with a score of 5). The score is calculated from the total score with the reversed score for items 3 and 6. A high score on this measuring instrument indicates a feeling of gratitude that tends to be high, while a low score indicates an individual tends to be less grateful. To categorize the score, Emmons et al. (2002) divide it based on the percentile to interpret if the people who took it scored below or higher than the others who took the measurement.

The sample in this study was emerging adults with an age range of 18-25 years. Sampling used convenience sampling (Gravetter & Forzano, 2018). The reliability calculation method used in this study is the alpha coefficient. This method is a popular method used to measure reliability through internal consistency (Murphy & Davidshofer, 2001). A good reliability coefficient ranges from 0.80 to 0.90 (Anastasi & Urbina, 1997).

Validity tests are also carried out to see whether the measuring instrument measures what it is supposed to measure (Anastasi & Urbina, 1997). In this research, the researcher uses three expert judgments. Confirmatory Factor Analysis (CFA) is conducted for this purpose. Researchers use the model of fit by Hu and Bentler (1999). The fit indices used are the Tucker-Lewis Index (TLI/NNFI) and the Comparative Fit Index (CFI)  $\geq 0.95$ . Netemeyer, Bearden, and Sharma (2003) also explained that the value of p chi-square ( $\chi^2 \geq 0.05$ ; Goodness of Fit Index (GFI)  $\geq 0.90$ ; Root Mean Square Error of Approximation (RMSEA)  $\leq 0.08$ . Kline (2005) explains that the relative chi-square can be used as a reference if the value is  $\leq 3$ .

### **Psychometric Testing of GQ-6 Indonesian Version**

The number of respondents was 300 people consisting of 213 women and 87 men with an age range of 18-25 years. Reliability testing using Cronbach's Alpha was calculated with JASP version 0.16.1. A validity test was conducted to see construct validity.

### **Item Analysis**

The researcher conducted an item analysis to see the suitability of the function of the items with the entire scale with JASP version 0.16.1. This test was also conducted to find out whether the items could differentiate groups of respondents based on their performance. According to Azwar (2012), the minimum correlation standard of Cronbach's alpha for item-rest correlation is 0.30. The result of the item analysis can be seen in Table 3.

Tabel 3.  
Item analysis

Item	If item dropped		
	Cronbach's $\alpha$	Item-rest correlation	mean
GQ1-Intensity	0.643	0.659	4.066
GQ2-Density	0.617	0.725	3.974
GQ3-Density	0.751	0.283	3.690
GQ4-Density	0.656	0.603	3.894
GQ5-span	0.646	0.637	3.875
GQ6-Frequency	0.810	0.112	3.175

*Note.* The following item was reverse scaled: GQ3-Density.

From the table, it can be seen that the item-rest correlation for each item is ranged from 0.112 – 0.725. Item 6 item-rest correlation is below 0.3. Other items in this study have an item-rest correlation above 0.30. This indicates that the item has good discriminant power.

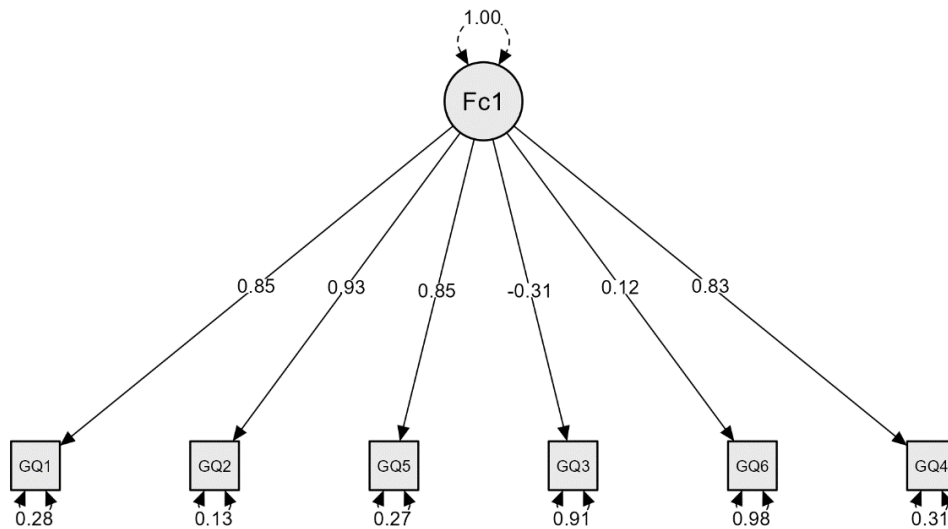
#### Reliability of GQ 6 Indonesian Version

The Gratitude Questionnaire (GQ-6) reliability was carried out on 300 respondents and tested using Cronbach's alpha method. The test results show that the reliability value of this measuring instrument is 0.73 ( $M = 21.65$ ,  $SD = 4.62$ ). This coefficient indicates that the reliability of this measuring instrument is good because it is above 0.70 (Shultz et al., 2014).

#### Construct Validity with Confirmatory Factor Analysis (CFA)

Based on the results of the chi-square calculation, it is known that the relative chi-square test  $\leq 3$  ( $\chi^2 / df = 2.29$ ) for the model can be seen in Figure 1.

Figure 1. Model Plot



Based on the calculations, it can be seen that the Gratitude measurement model has RMSEA = 0.051; GFI=0.99; AGFI=0.99; CFI=0.99; NNFI = 0.99. By looking at the model parameters, it can be said that the gratitude measurement model is in accordance with the construct. These fit indices are also used in measuring scale adaptation by Suwartono and Moningka (2017).

Table 4.  
The goodness of fit from CFA

Model	$\chi^2/df$ $\leq 3$	NNFI	RMSEA < 0,08	CFI $\geq 0,95$	TLI $\geq 0,95$	GFI $\geq 0,9$
	2,29	0,99	0,065	0,99	0,99	0,99

### Discussion

Based on the research results, it can be seen that the Gratitude scale (GQ-6) Indonesian version is valid and reliable. This scale has reliability above 0.7 and according to the model meets the fit parameter. Emmons et al. (2002) explain that the final internal reliability for the six-item scale was 0.84. The results for the item analysis in this research are similar to Emmon's estimates of Cronbach's alpha which has ranged from 0.76 to 0.84. This gratitude questionnaire is in accordance with the theoretical construct. In this case,

each item measures the construct. Researchers only calculated the First order CFA. It is also found that for confirmatory factor analyses for the gratitude scale (GQ-6), the model typically showed to be in acceptable ranges from 0.90 to 0.95 (Emmons, et.al, 2002).

The item that does not have a good item-rest correlation is item 6 (Long amounts of time can go by before I feel grateful to something or someone) which measures frequency. In this case, revisions can be made to this item. This can happen because the time needed for each individual to be grateful varies. Being grateful is something that must be interpreted so that each individual needs time to understand and give meaning. (Brown and Ryan, 2008; Fakhri et al., 2017).

### **Conclusion**

Based on this research, the gratitude measuring tool can be applied in the Indonesian context. There is an item that really needs to be revised, but for the whole scale, it meets good reliability and construct validity. For further research, it is recommended to add more respondents for the research or possibility to add more items. The limitations of this study are that respondents are still limited to emerging adults. Even though the number of respondents was sufficient, the respondents did not cover all regions of Indonesia.

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