

# Adaptation and Validation of the Gratitude Questionnaire GQ-6 for the Ecuadorian Context

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## ABSTRACT

This paper evaluates the factor structure, reliability and validity of the gratitude scale (GQ-6) of McCullough, Emmons and Tsang (2002) and the five-item version proposed by Chen et al. (2009). Results of a sample of 1112 adults show that the five-item version has excellent internal consistency ( $\alpha=.926$ ;  $\omega=.891$ ;  $GLB=.913$ ); high and significant factor loadings (greater than .8;  $p<.01$ ), and excellent goodness of fit indexes ( $\chi^2(5)=23.837$ ,  $p<.001$ ;  $CFI=.997$ ;  $TLI=.995$ ;  $RMSEA=.082$ ,  $p=.045$ ;  $SRMSR=.035$ ;  $WRMSR=.837$ ). The criterion validity was evaluated applying subscales of the PERMA-Profil: positive emotions ( $\rho=.5702$ ,  $p=.021$ ) and negative emotions ( $\rho=-.1786$ ,  $p=.0316$ ). Finally, we find psychometric equivalence between the sex of the participants. In conclusion, the five-item questionnaire is valid and reliable in the Ecuadorian context.

*Keywords:* Gratitude questionnaire; psychometric properties; adaptation; wellbeing; validation.

## RESUMO – Adaptação e Validação do Questionário de Gratidão GQ-6 para o Contexto Equatoriano

Este estudo avalia a estrutura fatorial, a confiabilidade e a validade da Escala de Gratidão (GQ-6) de McCullough, Emmons e Tsang (2002) e a versão de cinco itens proposta por Chen et al. (2009). Resultados de uma amostra de 1.112 adultos mostram que a versão de cinco itens tem excelente consistência interna ( $\alpha=0,926$ ;  $\omega=0,891$ ;  $GLB=0,913$ ); cargas fatoriais altas e significativas (maior que 0,8;  $p<0,01$ ), e excelentes índices de qualidade de ajuste ( $\chi^2(5)=23,837$ ,  $p<0,001$ ;  $CFI=0,997$ ;  $TLI=0,995$ ;  $RMSEA=0,082$ ,  $p=0,045$ ;  $SRMSR=0,035$ ;  $WRMSR=0,837$ ). A validade de critério foi avaliada aplicando-se subsescalas do PERMA-Profil: emoções positivas ( $\rho=0,5702$ ,  $p=0,021$ ) e emoções negativas ( $\rho=-0,1786$ ,  $p=0,0316$ ). Finalmente, encontra-se equivalência psicométrica entre o sexo dos participantes. Em conclusão, o questionário de cinco itens é válido e confiável no contexto equatoriano.

*Palavras-chave:* questionário de gratidão; propriedades psicométricas; adaptação; bem-estar; validação.

## RESUMEN – Adaptación y Validación del Cuestionario de Gratitud GQ-6 para el Contexto Ecuatoriano

Este estudio evalúa la estructura factorial, la confiabilidad y la validez de la escala de gratitud (GQ-6) de McCullough, Emmons y Tsang (2002) y la versión de cinco ítems propuesta por Chen et al. (2009). Resultados de una muestra de 1112 adultos indican que la versión de cinco ítems tiene excelente consistencia interna ( $\alpha=.926$ ;  $\omega=.891$ ;  $GLB=.913$ ); cargas factoriales altas y significativas (mayores a .8;  $p < .01$ ), y excelentes índices de calidad de ajuste ( $\chi^2(5)=23.837$ ,  $p<.001$ ;  $CFI=.997$ ;  $TLI=.995$ ;  $RMSEA=.082$ ,  $p=.045$ ;  $SRMSR=.035$ ;  $WRMSR=.837$ ). La validez de criterio se evaluó aplicando subsescalas del PERMA-Profil: emociones positivas ( $\rho=.5702$ ,  $p=.021$ ) y emociones negativas ( $\rho=-.1786$ ,  $p=.0316$ ). Finalmente, se ha encontrado equivalencia psicométrica entre el sexo de los participantes. En conclusión, el cuestionario de cinco ítems es válido y fiable en el contexto ecuatoriano.

*Palabras clave:* Cuestionario de gratitud; propiedades psicométricas; adaptación; bienestar; validación.

Throughout history the study of gratitude has interested many academics and researchers; however, these studies have not been carried out on the basis of a rigorous scientific foundation (Emmons & McCullough, 2003; McCullough, Kilpatrick, Emmons & Larson,

2001). McCullough, Emmons, & Tsang (2002) define gratitude as a cognitive-affective status that results from the perception of having benefited both from an external and internal aspect, in a solidary, disinterested and free manner. Gratitude can be expressed towards a close

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The adaptation of the gratitude scale in its five-item model is one of the first works that attempt to adapt instruments to the Ecuadorian context as part of a wider project called "Variables associated with wellbeing of people with or without disabilities"; carried out thanks to the support and funding of the Research Department of the University of Cuenca under the direction of Mauricio Espinoza, PhD.

person, god, or nature. Also, Emmons (2007) reports that the feeling of gratitude improves if the beneficiary of an act is seen as important and if the act performed has been free or disinterested.

Gratitude can be classified into three levels depending on the affective states that are assumed, these are: Affective trait (considered as stable predispositions of affective response), emotion or emotional reactions (considered as brief and typical changes in response to the environment), and humor (considered as a state of mind that is less conscious than the emotions and intermediate state between the previous two). These aspects relate to each other like a chain, since the affective trait leads to develop a state of mind and, at the same time, facilitates the perception of emotions as a reaction to a specific event (McCullough & Tsang 2004).

It seems relevant to note that gratitude is associated with an improved perception of personal well-being (Sansone & Sansone, 2010) and social well-being which is beneficial for the whole society because *feeling gratitude* inhibits anger and aggression that can be considered destructive (Baron, 1984; Richaud & Mesurado, 2016). Gratitude also has a protective effect on health, preventing specific mental disorders such as depression or anxiety (Watson & Naragon-Gainey, 2010) and is related to adequate self-esteem (Elosúa, 2015; García-Méndez, Serra-Desfilis, Márquez-Barradas & Bernabé-Valero, 2014; Lin, 2017; Rash, Matsuba & Prkachin, 2011). Therefore, the development of a higher sense of gratitude could be promoted in health care services and in contexts where personal development is encouraged.

If we understand gratitude as a personality trait, then individuals have a predisposition to feel grateful, regardless of the events that produce this sensation (McCullough, Tsang & Emmons, 2004). Feeling gratitude and appreciation tends to foster positive feelings that improve the general sense of personal well-being (Emmons & McCullough, 2004; Martínez-Martí, Avia, & Hernandez -Lloreda, 2010). There is also a positive correlation between gratitude and kindness in aspects of trust, openness, sensitivity to others, altruism and conciliatory attitude. Gratitude is also positively related to responsibility in characteristics such as a sense of duty, order, and competence (Alarcón & Morales de Isasi, 2012). Therefore, it is important to mention that gratitude is not equal to constructs such as optimism, hope, vitality, empathy, satisfaction with life and happiness, so it is not reducible to a combination of the five great personality factors McCullough et al. (2002).

Women and men demonstrate differences in the tendency to experience gratitude (Kashdan, Mishra, Breen, & Froh, 2009). On the one hand, men experience gratitude as evidence of vulnerability and weakness which is a threat to their masculinity and social standards (Levant & Kopecky, 1995). On the other hand, women are expected to perceive gratitude as more functional and beneficial

in their life because of the importance it has for women to create long-lasting and strong relationships (Schwartz & Rubel, 2005; Timmers, Fischer, & Manstead, 1998). Although the differences between sex in the tendency to experience gratitude have been analyzed by comparing the scores, these previous studies do not report the psychometric invariance of the instruments used. Thus, it becomes necessary to describe the psychometric accuracy of the scales used to measure this construct.

Other research has also studied the relationship between age and gratitude, suggesting that this disposition can help older adults to face adversities contributing to well-being (Frederickson 1998; Frederickson, 2000). The older the person, the higher the sense of gratitude because older adults could perceive gratitude as a positive and enriching experience (Chopik, Newton, Lindsay, Kashdan, & Jarden, 2017; Kashdan et al., 2009). However, Allemand and Hill (2009) found that older people perceived lower degrees of gratitude. The evidence on the relationship between gratitude and age, is ambiguous. Therefore, it is important to continue investigating this association.

Gratitude has been given a lot of the importance in the theoretical framework of positive psychology (Froh et al., 2011; Tousaint & Friedman, 2008), McCullough et al. (2002) elaborated the GQ-6 scale "The Gratitude Questionnaire-Six Item Form". This questionnaire has a unifactorial structure and has shown excellent reliability and validity indexes (CFI=.95;  $\alpha$ =.82) in its original version in English. The gratitude scale has been translated into 14 languages including Spanish and adapted to contexts such as European (Yüksel & Oguz, 2012), Asian (Chen, Chen, Kee, & Tsai, 2008; Kobayashi, 2013), and Latin American (Blasco-Magraner, Bernabé-Valero, & Moret-Tatay, 2015; Carmona-Halty, Marín-Gutierrez, & Belmar-Saavedra, 2015; Langer, Ulloa, Aguilar-Parra, Araya-Véliz, & Brito, 2016). The results of the evaluation of the GQ-6 have suggested some variations. a questionnaire that includes only five items has been compared to the original questionnaire that has six items. The former is more parsimonious, has better internal consistency and better convergent and discriminant validity than the six-item version. These conclusions have been demonstrated by Bernabé-Valero, García-Alandete, and Gallego-Pérez (2013); Chen et al. (2008); Yüksel and Oguz (2012); Langer et al. (2016); and Blasco-Magraner et al. (2015).

It is essential to know and study gratitude closely in our society since research on the subject is nonexistent in Ecuador. As the first stage of a more ambitious project, this paper proposes the psychometric adaptation of the GQ-6 evaluating the original version of six items along with the five-item model, through its application to a sample of Ecuadorian adults living in the city of Cuenca. Having a valid and reliable instrument will help professionals to identify grateful disposition, and since grateful

people may be prone to positive emotions and subjective well-being, a proper measurement of this construct is relevant to the mental health research in Ecuador. In this sense, the GQ-6 may help to identify the absence or low levels of gratitude and allow it to be fostered.

### Method

This study has a quantitative, descriptive and correlational design. The adaptation of the instrument follows the guidelines of the International Test Commission (2017).

#### Participants

The number of participants included 1,112 individuals older than 18 years old, living in both urban and rural areas in Cuenca, Ecuador. The sample included people without disabilities and individuals with disabilities and chronic diseases that have expressed their willingness to participate. Adults with multiple disabilities and severe cognitive deterioration, hearing impairment, illiterate or with severe intellectual disability are excluded. There are 408 male and 704 female participants that represent 36.69% and 63.31% respectively. 42.49% of the participants are single, 39.43% are married, 6.71% divorced, 6% widowed, 3.43% live with their partners without being married, and 2% are currently separated from their partners. Most of the participants have higher education, 62.57%; 6.3% do not have a job, and 14.29% have any degree of disability. Participants were contacted in public places and their residences.

#### Instruments

**The Gratitude Questionnaire – Six Item Form – (GQ-6; McCullough, Emmons & Tsang, 2002).** The original questionnaire in its original structure has six items in a Likert scale response (totally agree- totally disagree). The scale allows the evaluation of dispositional gratitude and allows to recognize certain positive aspects of life along with gratitude (Sansone & Sansone, 2010). The gratitude questionnaire has shown adequate reliability and validity among students in the United States (Froh, et al., 2011; McCullough et al., 2002). However, other research in other cultural and idiomatic contexts has shown questionable results and have suggested a five-item structure (Bernabé et al., 2013; Chen, et al., 2008; Blasco-Magraner et al., 2015; Kobayashi, 2013; Langer et al., 2016; Yüksel & Oguz., 2012).

**PERMA Profiler – (Butler & Kern, 2016).** The questionnaire is based on Seligman's (2011) well-being theory and has been previously validated in the Ecuadorian context (Lima-Castro, Peña-Contreras, Cabrera-Vélez, & Cedillo-Quizhpe, 2017), with excellent reliability ( $\alpha=.91$ ). This instrument serves to evaluate the general well-being through 23 items, 15 of them measure the five pillars proposed by Seligman and three

factors independent: health, negative emotions and loneliness. For the present study, were used the items related to the positive, and the negative emotions.

**Sociodemographic questionnaire.** This complementary survey includes questions about age, disabilities, education, marital status, income, gender, among others.

#### Application

In order to verify comprehension of the instrument, a pilot test was performed with 50 people who were randomly selected. Before this step, the items on the scale were translated by two researchers whose native language was Spanish. After, to verify the equivalences with the original version of the questionnaire, a new translation was carried out by an expert whose native language was English. It is worth mentioning that the person who translated the scale was not familiar with the original instrument.

Although the modifications made in the Ecuadorian version are slight compared to other Spanish versions, according to the people's feedback and experts who participated in the translations process (translation and back-translation), the changes improve the comprehension of the questionnaire given the idiomatic particularities of our society.

The Likert scale was translated considering only two options of the response spectrum. Therefore, the questions included a description of 1 (totally disagree) and 7 (totally agree).

Respondents took approximately five minutes to fill the gratitude questionnaire. Besides, the socioeconomic survey along with the PERMA profile took around six additional minutes.

The participants were contacted in urban agglomeration points in different areas in the city of Cuenca, Ecuador between November 2016 and March 2017. The study was conducted following the guidelines of the Declaration of Helsinki. Participation was voluntary and anonymous. Written informed consent was obtained from all the participants where the purpose of the research and the confidentiality of the data was clearly stated.

#### Data Analysis

A descriptive analysis is performed with each item of the gratitude questionnaire to analyze the distribution, asymmetry, kurtosis and item-test correlations. Based on these results, we determine which estimator and the kind of correlation matrixes to be used.

Reliability of the instrument is evaluated through Cronbach's Alpha ( $\alpha$ ), McDonald's Omega ( $\omega$ ), and Greatest Lower Bound (GLB), the later has proven to be a better measure of reliability when items are skewed (Trizano-Hermosilla, Alvarado, 2016). For the first two coefficients, scores between .7 and .8 are considered acceptable, values over .8 evidence high consistency and

values over .9 might signal redundancy in the questions (Cicchetti, 1994; Lance et al., 2006; Tavakol & Dennick, 2011).

To assess proper matrix adequacy, we calculate Kaiser-Meyer-Olkin (KMO) coefficient and perform Bartlett's sphericity test. We expect a KMO higher than .85 and the rejection of the null hypothesis of sphericity. If these criteria are satisfied, we proceed to perform factor analysis.

The dataset is randomly split into two subsets to perform an Exploratory Factor Analysis (EFA) with the first dataset with Promax rotation where we use the Kaiser criterion (Kaiser, 1960) higher-than-one Eigenvalue to determine the number of factors to extract.

Confirmatory Factor Analysis was performed with the second subset. We evaluate the model using different indexes such as Chi-Square, Comparative adjust index (CFI) and Tucker-Lewis index (TLI) which values between .90 and .95 indicate acceptable goodness of fit in the model while values higher than .96 show excellent goodness of fit (Hu & Bentler, 1999). Besides, we report the Root Mean Square Error of Approximation (RMSEA) which value is considered acceptable when is below .08 and very good when is lower than .05 (Steiger, & Lind, 1980) and Standardized Root Mean Square Residual (SRMSR)

where a value lower than .08 indicates good fit (Hu & Bentler, 1999).

We check for measurement invariance across biological sex using the questionnaire version that presents the best properties of validity and reliability and using the whole dataset. Measure invariance analysis aims to test the psychometric equivalence across groups, a requirement to be done before comparing groups. Therefore, we analyze configural invariance (same patterns on fixed and free loadings), metric invariance (equivalence of the item loadings), scalar invariance (equivalence of the intercept) and latent means invariance (since the construct cannot be directly measured) (Putnick and Bornstein, 2016; Van de Schoot et al., 2012).

Finally, we correlate gratitude with age of the participants, the positive, and the negative emotions subscale of the PERMA profiler in its version adapted to the Ecuadorian context (Lima-Castro et al., 2017). All the analysis is performed in R version 3.3.0.

## Results

The descriptive analysis shows that all the items of the questionnaire but the sixth show a strong left skewness. Central tendency and dispersion measures of each item are reported in Table 1.

Table 1  
Central Tendency and Dispersion Measures

Item	N	Mean	Standard deviation	Median	Min	Max	Asymmetry	Kurtosis
G1	1112	6.62	.73	7	1	7	-2.34	6.98
G2	1112	6.37	1.03	7	1	7	-1.99	4.31
G3	1112	6.45	.93	7	1	7	-2.25	6.22
G4	1112	6.28	1.08	7	1	7	-1.75	3.12
G5	1112	6.54	.82	7	1	7	-2.33	6.88
G6	1112	3.46	2.28	3	1	7	.37	-1.43

Regarding reliability analysis (Tables 2 and 3), the six-item version reveals a poorer Cronbach's Alpha, McDonald's Omega and GLB ( $\alpha=.839$ ,  $\omega=.648$ ,  $GLB=0.876$ ) than the five-item version ( $\alpha=.927$ ,  $\omega=.891$ ,  $GLB=0.913$ ). Furthermore, we found that the sixth question has a low item-total correlation ( $r=.55$ ), low item-total correlation coefficient after standardization ( $r=.29$ ) and low correlation with the item-total questionnaire without the sixth item ( $r=.063$ ). Additionally, Cronbach's alpha improves substantially if the sixth question is removed ( $\alpha=.88$ ).

Factorability of the matrix is possible according to Bartlett's sphericity test ( $\chi^2=2891.80$ ,  $df=15$ ,  $p=.000$ ) and Kaiser-Meyer-Olkin criteria ( $KMO=.856$ ).

We perform a factorial analysis with the first subset ( $n=556$ ). The Kaiser rule suggests extracting one dimension in the five-item version which explains 68.99% of

the variance. In the six-item version, the first dimension explains 53.83% of the variance.

Confirmatory factor analysis is performed with the second subset ( $n=556$ ). Considering that the ordinal nature and the skewness of the variables, we use a Diagonally Weighted Least Squares (DWLS) estimator with polychoric correlation matrixes (Rhemtulla, Brosseau-Liard, & Savalei, 2012).

Model fit statistics are summarized in table 4. According to the minimum function test statistic, none of the two models properly fit the data. The combination of fit indexes for the six-item version ( $\chi^2=25.579$ ,  $df=9$ ,  $p<.01$ ;  $CFI=.998$ ;  $TLI=.996$ ;  $RMSEA=.058$ ;  $SRMSR=.034$ ) reveals slight improvement compared to the five-item version ( $\chi^2=23.837$ ,  $df=5$ ,  $p<.01$ ;  $CFI=.997$ ;  $TLI=.995$ ;  $RMSEA=.082$ ;  $SRMSR=.035$ ).

Table 2  
Internal Consistency Statistics

	item-total correlation				
	Item-total correlation (not corrected for item overlap)	Item-total correlation (not corrected for item overlap) standardize	Item whole correlation	Item whole correlation without item	Item Standard deviation
G1	.7	.8	.749	.604	.73
G2	.72	.81	.782	.575	1.03
G3	.74	.83	.813	.621	.93
G4	.72	.79	.745	.566	1.08
G5	.71	.8	.757	.6	.82
G6	.55	.29	.073	.063	2.28
Cronbach's alpha if the item is dropped					
	Alpha based upon covariances	Standardized alpha based upon the correlations	Guttman's Lambda 6 reliability	Average inter-item correlation	
G1	.58	.76	.78	.39	
G2	.55	.76	.76	.38	
G3	.55	.75	.76	.37	
G4	.55	.76	.77	.39	
G5	.57	.76	.77	.39	
G6	.88	.88	.87	.6	

Table 3  
Reliability of the Gratitude Questionnaire

	Five-item version	Six-item version
Cronbach's alpha	.926	.839
McDonald's omega	.891	.648
Greatest Lower Bound	.913	.876

Table 4  
Goodness of Fit Indexes for the two Versions of the Gratitude Questionnaire

	Chi-squared ( $\chi^2$ )	Degrees of freedom	p-value	CFI	TLI	RMSEA	p-value of the RMSEA	SRMR
Five-item version	23.837	5	0	.997	.995	.082	.045	.035
Six-item version	25.579	9	.002	.998	.996	.058	.281	.034

Note. CFI=comparative fit index; TLI=Tucker-Lewis index; RMSEA=root mean square error of approximation; SRMR=standardized root mean square residual

Standardized factor loadings with their significance levels for the both, the five-item and the six-item questionnaire are reported in Table 5.

Measurement invariance is tested to know if the instrument presents adequate psychometric properties and the same factor structure across groups. We added constraints to test for configural invariance (CFI=.986, RMSEA=.153), metric invariance ( $\Delta$ CFI=0;  $\Delta$ RMSEA=.022), scalar invariance ( $\Delta$ CFI=.003;  $\Delta$ RMSEA=.055) and latent means invariance ( $\Delta$ CFI=.003;  $\Delta$ RMSEA=.08).

Finally, we analyzed the relationship between gratitude with the age of the respondents, gratitude with negative and positive emotions measured by the PERMA subscales. After correlating these variables, we observe that gratitude increases as time passes by ( $\rho$ =.3056,  $p$ =.028), it is negatively correlated with negative emotions ( $\rho$ =-.1786,  $p$ =.0316), and positively correlated with the positive emotions subscale ( $\rho$ =.5702,  $p$ =.021).

Table 5  
Gratitude Questionnaire Factor Loadings

Item	Five-item version				Six-item version			
	Estimate	Std.Err	z-value	P(> z )	Estimate	Std.Err	z-value	P(> z )
G1	.828				.829			
G2	.897	.028	39.095	0	.897	.028	39.117	0
G3	.891	.025	43.066	0	.891	.025	43.16	0
G4	.816	.027	36.181	0	.816	.027	36.248	0
G5	.827	.027	36.567	0	.827	.027	36.594	0
G6					-.042	.058	-.87	.384

Table 6  
Measurement Invariance

Model	Five-item version			
	CFI	RMSEA	ΔCFI	ΔRMSEA
Configural Invariance	.986	.153	NA	NA
Metric invariance	.986	.131	0	.022
Scalar invariance	.989	.076	.003	.055
Means invariance	.986	.084	.003	.008

### Discussion

The purpose of the research was the psychometric adaptation of the GQ-6 Questionnaire, evaluating the original version of six items along with five-item model, in such a way that it can be applied in the Ecuadorian context, expanding the offer of valid and reliable tools that can be used by professionals of the mental health and particularly in the research project where this paper was proposed. Although, the original six-item original version of the gratitude questionnaire has proven to be highly reliable in the American context (McCullough et al., 2002; Froh, et al., 2011), we found that when translating the sixth item (*Es difícil para mí sentirme agradecido por algo o con alguien*) it can be understood in different ways due to the way the question is written. In other words, the question is inversely written and people might misunderstand lowering the questionnaire’s internal consistency and validity properties.

Cronbach’s Alpha, McDonald’s Omega and GLB improve significantly when the sixth item is dropped. Item-test correlations show higher values among the first five items. It is clear that the sixth item should be omitted. High reliability results concur with other research made in Taiwan ( $\alpha=.80$  Chen et al., 2008), Japan ( $\alpha=.70$  Kobayashi, 2013), Turkey ( $\alpha=.77$  Yüksel & Oguz, 2012), Chile ( $\alpha=.90$ , Bernabé-Valero et al, 2013;  $\alpha=.72$ , Langer et al, 2016) and Spain ( $\alpha=.80$  Blasco-Magraner et al., 2015).

The exploratory factorial analysis shows that the five-item version has only one-factor structure. In the six-item version, although there is only one dimension

with a higher value than one, there is one eigenvalue with a value quite close to one. Even more, Jolliffe (2002) has suggested a modification of the Kaiser rule, stating that the cut-off value for eigenvalues is .7. This leads to think that there is a second construct originated in the sixth question. In other words, participants associate the sixth item to another personality trait different than gratitude.

The confirmatory factor analysis reveals excellent fit properties of the two versions. We report that the  $\chi^2$  is significant ( $p<.01$ ) meaning poor fit. However, this might be a result of the large sample size used in this study (Bentler and Bonnet, 1980).

Measurement invariance analysis finds evidence of psychometric equivalence of the instrument. Specifically, we analyze the changes in the CFI after adding constraints to the model. Such changes ( $\Delta$ CFI) show evidence of configural, metric, scalar and latent means invariance, making the five-item version suitable for comparisons across biological sex.

There is also a positive and significant correlation between the age of the respondents and the perceived dispositional gratitude. This can be explained because gratitude is associated with well-being and previous studies have indicated that well-being increases during early adulthood, declines in middle adulthood and again increases in late adulthood (Realo & Dobewall, 2011). Also, what is considered valuable or significant may depend on the habit established or a personality trait that allows establishing coping strategies and allows the person to feel a state of gratitude that can even be related to being alive and being able to enjoy what a person has

around (McCullough & Tsang 2004). It is important to mention that Chopik et al., (2017) in a study with 30,000 people, found that older adults feel more gratitude than younger people. However, Allamand and Hill (2016) found evidence of the opposite. The higher levels of gratitude experienced by older Ecuadorians might be explained by the scope of study recruitment, or even cultural differences that are beyond the objectives of this study.

The results of the negative and significant correlation between gratitude and negative emotions corroborate the theoretical argument that people with higher gratitude experience less negative emotions. Similarly, the moderate and significant positive correlation provides concurrent validity for the instrument.

### Conclusions

This study does not perform a test-retest analysis, that could further confirm the reliability of the gratitude

questionnaire. However, we note excellent reliability coefficients that along with excellent fit indexes make the five-item questionnaire a valid and reliable instrument version to be used in the Ecuadorian context.

Additionally, this study addresses the measurement invariance of the instrument which is lacking in most of the revised literature.

This is a pioneering study due to the lack of research on gratitude in Ecuador. The study of gratitude is part of a more extensive project designed to assess the quality of life in Ecuadorians following the framework of positive psychology. For this purpose, having valid and reliable instruments is fundamental in order to deepen the study its relation to well-being in Ecuador.

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