



# Validity Evidence and Reliability of a Subjective Well-Being Scale: A Psychometric Network Analysis

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## Abstract

The objective of the present research was to analyze the psychometric properties of a short scale of subjective well-being based on the metrics corresponding to the network models. A total of 3196 young people and adults between 18 and 56 years of age (mean = 25.88;  $SD = 8.81$ ) from three cities in Peru were selected by non-probabilistic purposive sampling and divided into two phases: exploratory ( $n = 642$ ) and confirmatory ( $n = 2527$ ). The methodology used was network analysis to determine internal structure and reliability. Evidence in relation to another variable was explored by latent network modeling using *Patient Health Questionnaire* (PHQ-2) and *Generalized Anxiety Disorder Scale* (GAD-2) as convergence measures. The results reveal that the SWB is a unidimensional measure both in its exploratory phase by *Exploratory Graphical Analysis* (EGA) and confirmatory (CFI = 1.00; RMSEA = 0.00). The reliability obtained through structural consistency identified that 100% of the time only one dimension was obtained; in addition, the items were stable because they replicated within the empirical dimension in all cases. The relationship with the PHQ-2 ( $r = -.44$ ) and GAD-2 ( $r = -.34$ ) maintained the expected direction and strength. The current data lays the groundwork for future research on subjective well-being in Peru, particularly because we now have a quick, valid, and reliable measure that can contribute to the scientific literature on subjective well-being, which is an intriguing construct to investigate due to its association with basic human needs and the prevention of mental health problems in a community.

**Keywords** Subjective well-being · Validation · Network approach · Psychometric

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## Introduction

In recent years, mental health has focused on positive rather than psychopathological characteristics of the individual, in which scenario subjective well-being (WB) has gained special relevance (Lui & Fernando, 2018). In fact, researchers and theorists look for simple and valid ways to measure the well-being of the individual, because their study allows identifying characteristics of a good life (Lucas, 2018) and guide towards personal or social actions such as the development of public policies (Diener et al., 2009). This is important because a meta-analysis study in 54 countries showed that there is a relationship between WB and socioeconomic levels in less economically developed and less educated countries (Howell & Howell, 2008). Therefore, subjective well-being is an interesting concept to analyze because of its association with basic needs of the individual (Baumeister & Leary, 1995) and ways to prevent mental health problems in society.

The conceptualization of WB is not straightforward, although it can generally refer to the degree to which people evaluate their lives (Diener et al., 1997) and can be considered as satisfactory (Diener, 1984). In fact, this evaluation can be entirely cognitive, affective, or a combination of both (Diener et al., 1985). In this scenario, WB can be defined in a specific aspect (family, health, work, studies) or in general about the individual's life (Dagger & Sweeney, 2006). However, WB is a complex concept that involves other associated terms such as (a) quality of life, which can be measured by objective aspects that make a person consider that he/she has a *good life*, (b) life satisfaction, which denotes cognitive aspects of the positive evaluation about life, and (c) happiness, which are the positive feelings of that evaluation (Moyano & Ramos, 2007). Moreover, happiness is a philosophical rather than a psychological concept. In summary, WB contains cognitive and affective components that, together with external criteria, consist of the subject's evaluation of his or her own life (Diener, 1984).

The main way to measure WB is through self-report scales, which focus on personal evaluations and experiences (Diener et al., 2018). There is a wide range of self-report measures, which differ in their theoretical foundation. For example, from a hedonic perspective of well-being, focused on the subjective assessment of life circumstances and the balance between positive and negative emotions of the individual, there are measures focused on the cognitive assessment of well-being such as the Satisfaction With Life Scale (SWLS; Diener et al., 1985) or Quality of Life Inventory (Frisch et al., 1992), while other measures focus on the emotional domain of well-being, such as the Bradburn Affect Balance Scale (Harding, 1982) or the Positive and Negative Affect Scales (Watson et al., 1988). On the other hand, from a *eudaimonic* or psychological model, which conceptualizes well-being based on personal growth, the search for meaning in life, and autonomy, there are measures such as the Mental, Physical, and Spiritual Well-being Scale (WeBS; Vella-Brodrick & Allen, 1995) and Psychological WeBSs (Ryff & Singer, 1996).

The number of self-report measures suggests that there is no agreement on the number of factors that should be considered in measuring WB (Sun et al., 2016).

For this reason, short instruments have also been proposed to measure subjective well-being in a general way, such as the 5-item World Health Organization Well-Being Index (WHO-5; Topp et al., 2015); there are even single-item WB measures (Lucas, 2018). Other brief measures have been developed to form part of much more complex relationship models, such as the Subjective Well-being Scale (SWB; Sun et al., 2016), which comprises three items adapted from the Subjective Happiness Scale (Lyubomirsky & Lepper, 1999). The original SWB study (Su et al., 2016) indicated the presence of acceptable levels of reliability based on Cronbach's alpha coefficient ( $\alpha=0.87$ ) and the composite reliability coefficient (CR=0.88). In addition, the average variance extracted from the factor (AVE) was 0.70, which would indicate that almost 70% of the variance of the construct is due to its indicators (Fornell & Larcker, 1981), which satisfies the evidence of convergent validity of the SWB. Despite this, there have been few studies using the SWB, with only one study finding satisfactory internal consistency ( $\alpha=0.93$ ; CR=0.93) and discriminant ability (AVE=0.61; Su et al., 2018). However, the internal structure was not demonstrated. As such, the study contributes to these purposes.

Unlike other self-report measures of WB with a larger number of items, short measures, such as the SWB, allow for higher and more consistent response rates (Guo et al., 2016; Peytchev & Peytcheva, 2017). This is extremely important when several instruments with different numbers of items are incorporated into a single study. In this sense, the SWB has been very useful within explanatory models (Su et al., 2016). In general, scientific evidence indicates that WB is related to various personal, occupational, economic, and even political factors (Diener et al., 2015) such as educational level, religious beliefs (Yakovlev & Leguizamon, 2012), sex, marital status (Sun et al., 2016), low corruption (Tay et al., 2014), and high rates of unemployment (Helliwell & Huang, 2014). However, there is a special interest in clinical disorders such as anxiety and depression. Thus, a study with adults in Australia ( $r_{\text{Depression}} = -0.39$ ;  $r_{\text{Anxiety}} = -0.33$ ; Burns et al., 2011) and in Turkey ( $r_{\text{Depression}} = -0.48$ ;  $r_{\text{Ansiedad}} = -0.26$ ; Guney et al., 2010) has been shown to have an inverse and moderate relationship. Likewise, things were no different during the pandemic, where a study in Brazil ( $r_{\text{Depression}} = -0.54$ ;  $r_{\text{Anxiety}} = -0.31$ ; Lopes & Nihei, 2021), India ( $r_{\text{Depression}} = -0.44$ ; Singh & Raina, 2020), and Poland ( $r_{\text{Depression}} = -0.37$ ;  $r_{\text{Anxiety}} = -0.33$ ; Goryczka et al., 2022) confirmed the same magnitude and direction of the relationship, observing that in all previous studies, the correlation between WB and depression is higher than with anxiety. In fact, this denotes that both clinical disorders are highly relevant to the understanding of subjective well-being and the improvement of mental health (Whitehead et al., 2019), in which case, cross-sectional relational models turn out a good way to uncover interactions.

In this regard, in recent years, network models have appeared in the field of mental health and psychopathology where symptoms or behaviors are not mere recipients of a "causal" influence of a variable but are active agents of the disorder itself (Borsboom & Cramer, 2013). One of its main advantages is the visualization of relationships in a diagram of nodes (symptoms, behaviors, items) and edges (partial correlations) whose thickness of the edges allows to examine the

strength of the relationship (Epskamp & Fried, 2018). Recently, these postulates have been derived to the field of psychometrics (Epskamp et al., 2018). This situation has led to the design of metrics such as network loadings, structural consistency, and exploratory graphs based on facet detection algorithms (Christensen et al., 2020). In addition, a generalization of the network model has recently been proposed, and it allows the assumption of latent networks whose objective is not to estimate the causal relationships between latent variables but rather the interactions between them (Epskamp et al., 2017).

In this context, this research aims to analyze the psychometric properties of a short scale of subjective well-being (Sun et al., 2016) from metrics corresponding to the network models. In addition, the study considers international standards (American Educational Research Association [AERA] et al., 2014; International Test Commission, 2017) and examines two evidences of validity such as internal structure and relationship with other variables. In fact, there is very little published research with the SWB (Su et al., 2016, 2018); despite being a short scale that effectively assesses subjective well-being, there is, for example, no evidence of its internal structure with modern methods such as network analysis. Given that, so far, very little attention has been given to studying SWB individually; it has only been part of a more complex model (Su et al., 2018). The impact of studying its psychometric properties through network analysis will enable the utilization of SWB within the framework of this approach, which is a growing field in research.

In such a sense, the study is justified by social and academic relevance. Socially, because the study of well-being plays an important role in the study of mental health (Lui & Fernando, 2018), it is a way to identify how good an individual's life is (Lucas, 2018) and can lead decision-makers to the development of public policies (Diener et al., 2009) because review studies report that it has an association with socioeconomic levels (Howell & Howell, 2008). Academically, the validation of a brief instrument is of interest because it facilitates data collection and simplifies data analysis (Ziegler et al., 2014) leading to more research on WB.

## Method

### Participants

A total of 3196 young people and adults between 18 and 56 years of age (mean = 25.88;  $SD = 8.81$ ), from three Peruvian cities, selected by non-probabilistic snowball sampling. The sample size was estimated using the *powerly* library which performs an iterative *Monte Carlo* method to return a sample size (Constantin et al., 2021). Establishing a priori a power of 0.80, a density of 0.40, 3 nodes, and a sensitivity of 0.60, these parameters indicated a total of 300 observations. Thus, the study far exceeded the recommended minimum in both phases of the study. Details are shown in Table 1.

**Table 1** Sociodemographic data of the participants

Variables	Total		Exploratory		Confirmatory	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Sex						
Female	1889	59.60	399	62.10	1490	59.00
Male	1280	40.40	243	37.90	1037	41.00
Ranges of age						
18–19	867	27.40	213	33.20	775	30.70
20–29	988	31.20	256	39.90	1058	41.90
≥ 30	867	27.40	173	26.90	694	27.50
Residence						
Cajamarca	290	9.15	76	11.80	241	8.47
Lima	2452	77.40	472	73.50	1980	78.40
La Libertad	427	13.50	94	14.60	333	13.20
Total	3196	100	642	100	2527	100

Age ranges were generated by dividing by quartiles as a way to summarize the data

## Instruments

**Sociodemographic Instrument** It consists of questions on age, sex, and residence and is intended to collect general data on the participants.

**Subjective Well-Being Scale (SWB; Su et al., 2016)** SWB is composed of three items, with response alternatives ranging from 1 to 7 (1 = *strongly disagree*, 7 = *strongly agree*). It is a unidimensional measure, where high scores indicate that the person has a lot of well-being, for example, item 1: “In general, I consider myself a very happy person.” The reliability ( $\omega=0.90$ ) and internal structure (RMSEA = 0.00; CFI = 1.00) obtained for the sample under study can be considered good. The adapted version is shown in the Appendix Table 3.

**Patient Health Questionnaire (PHQ-2; Yu et al., 2011)** PHQ-2 is composed of two items, with response alternatives ranging from 0 to 3 (0 = *not at all*, 1 = *several days*, 2 = *more than half the days*, 3 = *nearly every day*). It is a unidimensional measure that assesses two basic symptoms of depression, for example, item 1: “Feeling down, depressed, or hopeless” and item 2: “Little interest or pleasure in doing things.” The PHQ-2 presents acceptable internal consistency reliability ( $\omega=0.74$ ), and the internal structure is optimal (RMSEA = 0.00; CFI = 1.00).

**Generalized Anxiety Disorder Scale (GAD-2; Donker et al., 2011)** GAD-2 is composed of two items that measure cognitive and emotional responses to anxiety in recent weeks. Its response alternatives are in the range of 0 to 3 (0 = *not at all*, 1 = *several days*, 2 = *more than half the days*, 3 = *nearly every day*), for example, item 1 “Feeling nervous, anxious, or on edge” and item 2: “Not being able to stop

or control worrying.” The GAD-2 has good reliability ( $\alpha=0.84$ ), and the internal structure is optimal (RMSEA=0.00; CFI=1.00).

## Procedure

Initially, the research considered the ethical aspects of the Declaration of Helsinki (World Medical Association, 1964). Due to the COVID-19 pandemic, data were collected taking into consideration a web-based methodology (Hoerger & Currell, 2012). Therefore, the questionnaires were digitized using an electronic form. Before being answered, participants responded to an informed consent. The questionnaires were shared to a group of young people to whom the researchers had access, who shared the link to other acquaintances who were characterized as young people and adults. The collection took place between 10/10/2021 and 11/10/2021. On average, the entire virtual form was answered in eight minutes. The data are deposited in the free OSF repository: OSF | <https://osf.io/6ycwt>.

The SWB was translated into Spanish following the guidelines of International Test Commission (ITC, 2017). In this sense, to guarantee the translation process, two experts with expertise in the field of positive psychology were selected, who were native speakers of the target language and knew the culture to which the test is adapted; the latter was essential because it allowed us to identify that the term “peers” would be complex to understand by the population, and we preferred the translation of “la mayoría de las personas de mi edad.” Specifically, the forward–backward translation design was chosen. A first translator translated from English to Spanish and a second translator returned the translated version to the source language. Finally, one of the researchers, fluent in both English and Spanish, assessed both versions (original and back translated) with the objective of having a definitive version that could be clear, understandable, and very similar to the original version (See Table 2).

## Data Analysis

The statistical analysis was performed with the *R* programming language in its RStudio environment (RStudio Team, 2020). Preliminarily, the descriptive statistics of the items are examined through the response rates or percentages of each of the response alternatives, given the ordinal nature of the variables. The data processing was divided

**Table 2** English version and Spanish translation of the SWB

Items of the original version	Items of the translated version
1. In general, I consider myself a very happy person	1. En general, me considero una persona muy feliz
2. Compared to most of my <i>peers</i> , I consider myself more happy	2. En comparación con la mayoría de las personas de mi edad, me considero él/la más feliz
3. I am generally very happy and enjoy life	3. En general soy muy feliz y disfruto de la vida

The term “peers” was translated as “la mayoría de las personas de mi edad” because, on the recommendation of the translator and reviewers, this term is not common in Peruvian speakers

into two stages: (a) exploratory, where a first sample ( $n=642$ ) was used to implement an *Exploratory Graphical Analysis* (EGA) with the *EGAnet* library (Golino & Christensen, 2021), verifying dimensionality by a Gaussian GLASSO model and *Louvain's* algorithm that determined the number of communities through a visual representation of regularized partial correlations; this procedure has proven to be more accurate than other exploratory methods (Christensen, 2020). From this information, network loadings, which are the product of standardized representations of the division between node magnitude and dimensions, were estimated, where 0.15 is small, 0.25 is moderate, and 0.35 is large (Christensen & Golino, 2021). In the framework of networks, reliability is examined by two estimates (Christensen et al., 2020): (a) structural consistency, which is the proportion of times that the number of dimensions derived from the initial EGA was recovered exactly in the replicate bootstrap samples and (b) item stability, which is the number of times each item is replicated within the empirical dimension and in other dimensions identified in the replication networks. Both procedures were performed with the *EGAnet* library and the *bootEGA* function (Golino & Christensen, 2021) with GLASSO estimation considering 1000 replications and the eigenvalue algorithm *LE*. For the interpretation of the structural consistency and stability of the items, a minimum value of 75% was used; that is, the dimension was expected to replicate exactly in 75% of the bootstrap samples, and the items were expected to replicate in at least 75% of the derived dimensions (Golino et al., 2021).

In a second step and with new data ( $n=2527$ ), the stability and structural consistency was confirmed using the *psychometrics* library (Epskamp, 2021). The variance of the latent variable was fixed at 1 and a diagonalized estimator such as *DWLS*; in addition, measures of fit frequently used in the literature (RMSEA and CFI) were used to check the fit of the internal dynamics.

Finally, the relationship of SWB with depression and anxiety is examined to check convergence and provide evidence of its performance. This procedure was done using a latent network model, which is a mix of latent variables and networks that looks at how the latent variables interact with each other. For the interpretation of the correlations, the cut-off points established by Cohen (1988) were used, where  $r > 0.10$  is small,  $r > 0.30$  is medium, and  $r > 0.50$  is large.

## Results

### Descriptive Analysis of the Items

Figure 1 shows the distribution of the items through a bar chart due to their ordinal nature. It is observed that there is a tendency to choose response alternatives 4 and 5, which suggests a tendency to a medium agreement in the response alternatives.

### Exploratory

Figure 2 shows the dimensionality of the SWB by *Exploratory Graphical Analysis* (EGA). Figure 2 shows the dimensionality of the SWB by *Exploratory Graphical*

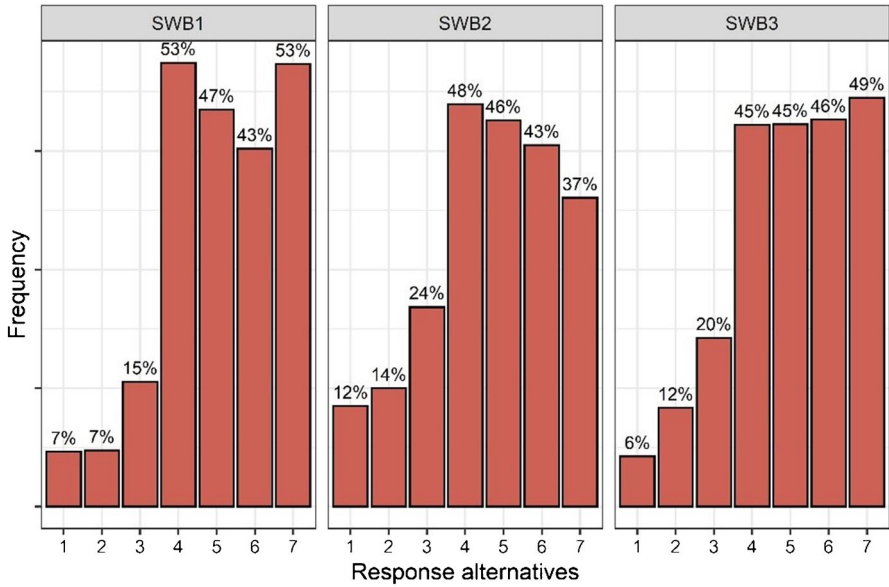


Fig. 1 Descriptive analysis of the items

Analysis (EGA). Observing the figure, it is a single dimension. In addition, the contribution of each node to the dimensional consistency is examined by calculating the standardized strength nodes which are in all cases large (> 0.35). Regarding the

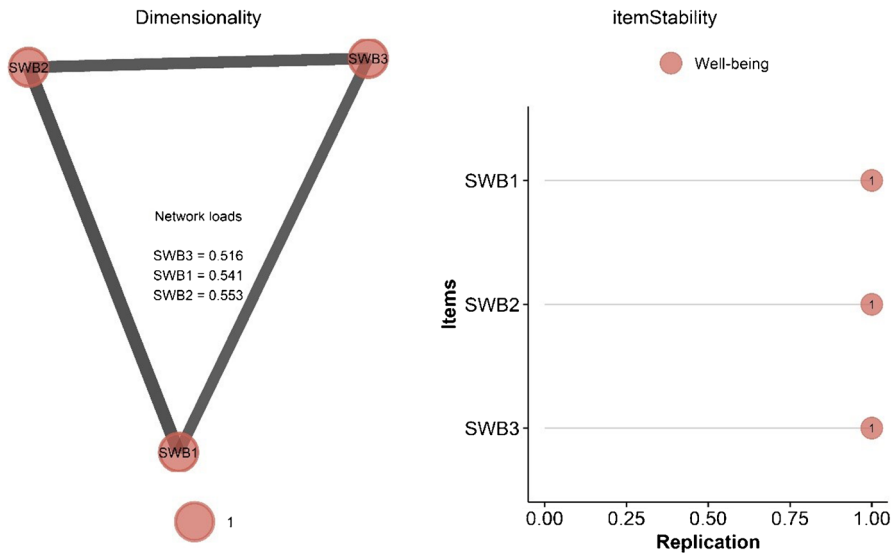


Fig. 2 Dimensionality and stability of items



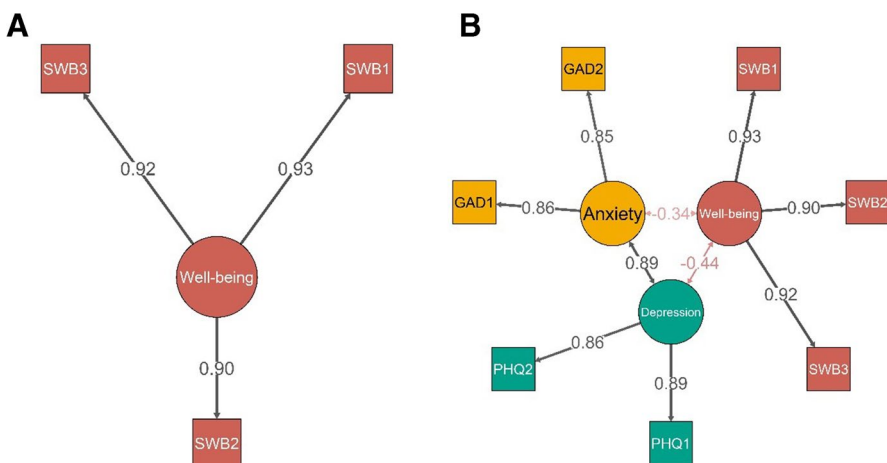
structural consistency, in 100% of the times, it was identified in only one community. In addition, the stability plot reveals that the items were systematically identified within their dimension, which in the case of SWB is a single community.

### Confirmatory and Relationship with Another Variable

The internal structure of the SWB was estimated under a covariance model using the *psychometrics* library. Initially, the goodness of fit of the model was reviewed, and the model was found to be optimal (CFI=1.00; RMSEA=0.00). Figure 3 shows that the factor loadings are quite solid ( $\lambda > 0.85$ ), which would indicate that the items reflect the construct quite well. As for the relationship of SWB with anxiety and depression, moderate and inverse relationships are observed with depression ( $r = -0.44$ ) and anxiety ( $r = -0.34$ ).

### Discussion

This research aims to examine the psychometric properties of a short scale of subjective well-being using the network model. Among the main findings, it is shown that the SWB presents optimal metric properties, both in relation to its reliability, internal structure, and relationship with other variables. These results report that the SWB can be used as a brief measure for the measurement of subjective well-being. In fact, the SWB did not have psychometric evidence in the Peruvian context, although well-being is a variable that has strong repercussions on the development of public policies (Diener et al., 2009), the socioeconomic level, and the education of a country (Howell & Howell, 2008). Therefore, the validation of a subjective well-being instrument is more than necessary.



**Fig. 3** Internal structure of SWB and latent interaction with depression and anxiety. Note: **A** Internal structure. **B** Latent network analysis

The internal structure was examined in two phases (exploratory and confirmatory). In the exploratory phase, the results obtained by EGA showed the presence of only one factor. This procedure (i.e., EGA) has been shown to have notable advantages over other exploratory methods, even parallel analysis (Christensen, 2020), which is one of the most sophisticated techniques available in exploratory factor analysis. Under this model, network loadings were estimated and proved to be robust (Christensen & Golino, 2021). In the confirmatory phase obtained through a covariance model, the goodness of fit indicated optimal results of the data for the hypothesized model (unidimensional structure). Moreover, the loadings maintained their robustness. This allows to point out that the items are a facet of subjective well-being; that is, they are related elements that do not necessarily share a common cause (Christensen et al., 2020); rather, they are variations of measurement that come from a reciprocal cause-effect relationship between network attributes (Borsboom, 2017). These results cannot be contrasted with previous studies, because there is no clear evidence of its internal structure, neither in the seminal article (Lyubomirsky & Lepper, 1999) nor in the studies where it was used as part of a broader model (Su et al., 2016, 2018). Thus, what was found in this research provides very relevant information for understanding the internal dynamics of SWB.

In relation to reliability, the structural consistency method was used, where, based on replications, all the data were verified to be systematically organized within a single dimension. These results allow to demonstrate the stability of the reciprocal variance between items. However, no previous study analyzed SWB from network analysis, but from the framework of classical test theory, using as a reliability estimator, a measure of internal consistency such as Cronbach's alpha ( $\alpha$ ), and finding values in the range of 0.79 to 0.94 in different populations (Lyubomirsky & Lepper, 1999), values above 0.80 ( $\alpha=0.87$ ; Su et al., 2016), and even above 0.90 ( $\alpha=0.93$ ; Su et al., 2018). Despite that, from the network model, the use of structural consistency methods is preferred for two reasons: (a) incompatibility with computation, because in network estimation, much of the common covariance is removed, leaving item-specific variance correlations and (b) internal consistency measures do not capture whether items remain unidimensional in multidimensional models; moreover, structural consistency is a measure to report whether scales are unidimensional and internally consistent (Christensen et al., 2020). Thus, the results showed that the dimension replicated exactly in 100% of the bootstrap samples and in 100% of the derived dimensions, revealing the presence of a single factor that is homogeneous even in the presence of the other dimensions.

As for the relationship with other variables, two other short tests such as the GAD-2 and PHQ-2 were used as convergence measures; both tests are widely used in science. In fact, the verification of this source of validity has been pointed out by international standards (American Educational Research Association [AERA] et al., 2014). Our results indicate that there is an inverse and moderate relationship between well-being and depression and anxiety; specifically, there is a stronger relationship with depression than with anxiety. These findings are consistent with previous studies that point to the same direction and a similar magnitude of correlation (Burns et al., 2011; Goryczka et al., 2022; Guney et al., 2010; Lopes & Nihei, 2021; Singh & Raina, 2020). In fact, this implies that feeling

good about oneself is associated with depressed mood and loss of interest in activities; which, in turn, depend on feeling nervous or having difficulty stopping worry (Malone & Wachholtz, 2018), establishing a reciprocal interaction between them.

The study has strong theoretical and practical implications. First, the results obtained may be useful to increase the conceptual framework of the subjective well-being variable in the Peruvian context, because it is understood that it has implications in identifying the characteristics of a good life for individuals (Lucas, 2018), which in turn is associated with a country's economic development and education (Howell & Howell, 2008). Moreover, its evaluation may cover specific aspects (family, health, work, studies) or general aspects of the individual's life (Dagger & Sweeney, 2006). At this point, it is good to point out that the uni-dimensional proposal of SWB (Su et al., 2016), at first glance, seems to be divergent with the subjective well-being model of Diener (1984), which is composed of three factors: positive affect, negative affect, and life satisfaction. However, since its construction, SWB has demonstrated the relationship with one of these components, as is the case with life satisfaction, showing a strong relationship in the range between 0.61 and 0.72 in different populations (Lyubomirsky & Lepper, 1999). This would demonstrate that there is convergence with Diener's model of SWB rather than divergence and would make the SWB of Su et al. (2016) a complementary version of the measurement of well-being, only in a broader or more general way. Practically, having a short self-report test will allow for rapid measurement of personal assessments and experiences of WB (Diener et al., 2018), as well as it will open up possible studies in relation to mental health improvement (Whitehead et al., 2019). In addition, being an ultra-brief measure, the SWB will allow insertion into larger network models, which was the reason for its construction and has been the frequent use of this instrument (Lyubomirsky & Lepper, 1999; Su et al., 2016, 2018).

Despite the interesting findings, the study has some limitations. First, the sampling was non-probabilistic, so the study has a descriptive and non-inferential design. Second, the study collected data virtually, and this does not allow the identification of the individual responding to the questionnaire; that is, it is not known whether the respondents meet the inclusion and exclusion criteria of the study. Likewise, the non-probabilistic nature of the sample meant that the sample was made up mostly of women, people between 18 and 22 years of age and who were only studying. This does not allow to generalize the findings to the Peruvian population. It is necessary that future studies can use probabilistic sampling that allows for homogeneous groups. Third, due to the cross-sectional design of the study, it has not been possible to establish causal relationships between subjective well-being, anxiety, and depression. This would suggest that, in the future, studies with longitudinal designs could be carried out. Fourth, the use of self-report measures may have generated the appearance of social desirability biases.

The SWB scale is concluded to present optimal psychometric properties, both in its validity and reliability. Therefore, it can be used as an accurate measure of well-being, and its incorporation in predictive and explanatory studies may be appropriate.

## Appendix

**Table 3** *Subjective Well-being Scale (SWB) adapted version*

Ítems	Total mente en desacuerdo						Total mente de acuerdo
1. En general me considero una persona muy feliz	1	2	3	4	5	6	7
2. En comparación con la mayoría de las personas de mi edad, me considero él/la más feliz	1	2	3	4	5	6	7
3. En general soy muy feliz y disfruto de la vida	1	2	3	4	5	6	7

**Author Contribution** JV-L conceptualized and designed the study, data preparation, statistical analysis, and interpretation of data. AR-SV: critical review of the manuscript in the English language. All authors have access to the data and accept responsibility for data integrity and reporting accuracy. TC-R wrote the first draft of the manuscript, and all authors have read and agreed to the published version of the manuscript.

**Data Availability** The datasets generated during and/or analyzed during the current study are available in the OSF repository: OSF | <https://osf.io/6ycwt>.

### Declarations

**Ethics Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

**Consent to Participate** Informed consent was obtained from all individual participants included in the study.

**Consent for Publication** The participant has consented to the submission of the case report to the journal.

**Competing Interests** The authors declare no competing interests.

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