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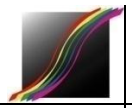

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A short form of the subjective well-being scale for Filipinos

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Abstract Using past data (sample of *N*=774), a Short Form of the Subjective Well-Being Scale for Filipinos (SWBSF) (Hernandez, 2006) was developed. Of the original 56 items, only 20% (11 items) comprise the Short Form. This was done using regression, principal component analysis, and confirmatory factor analysis. The Short Form demonstrates good item characteristics, reliability, and validity. Also, convergent validity through correlation with the original SWBSF and Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) shows that the Short Form can measure both global and multidimensional aspects of Subjective Well-being.

Keywords: *Subjective well-being, short form*

Introduction

In the recent years, more and more studies are emerging on positive psychology. Researcher sought to develop new measures as well as models that would best encapsulate the question, how does one measure happiness. Diener and Fujita's (1994) conceptualized happiness as Subjective Well-Being. It represents the emotion as well as the state of happiness. Locally, Hernandez (2006) developed an instrument that would be able to measure SWB in the Filipino context. His findings reveal that the Subjective Well-being Scale for Filipinos (SWBSF) is both reliable and valid. The SWBSF can be considered a multi-dimensional measure of SWB (Diener, Scollon, & Lucas, 2003). Unlike other global measures of SWB, the SWBSF looks into the underlying components of SWB – both cognitive and affective (Diener, 1984).

Unfortunately, global approaches to measuring SWB have often been used and preferred by researchers for quick measures of SWB. An example of this is the widely used Satisfaction with Life Scale (SWLS) which has 5 items only (Diener, Emmons, Larsen, & Griffin, 1985). Compared to the SWBSF with 59 items, the

brevity of SWLS not only gives a holistic and quick measure of SWB but also avoids test-taker fatigue.

With a Short Form of the SWBSF, it is hoped that a global measure of SWB can also be achieved similar to the SWLS. The reduction of the items is meant to reduce the time to answer the test but not to sacrifice the reliability and validity of the instrument. Also, the Short Form is expected to act as a rapid screener whose results can be further complemented by the use of the original SWBSF.

Method

Participants

Data were pooled from two previous studies carried out by the author in the development of the SWBSF. The first set of data (N=504) is from the actual construction, development, and standardization of the instrument (Hernandez, 2006). The second set of data (N=270) came from the re-validation of the instrument (Balingit & Hernandez, 2008). The use of previously gather data was also done by the group of Smith in the Rasch Analysis of the Hospital and Depression Scale (Smith, et al., 2005). Furthermore, the reported demographics show that: (a) the average age of the participants is 21.67 (SD=4.83); (b) females comprise 62% of the sample; and (c) 87.8% are single.

Materials

The sources of data were from two previously done studies. These two studies used two tests that measure SWB:

(1) The Subjective Well-Being Scale for Filipinos (SWBSF) by Hernandez (2006) measures the SWB levels of young adults with a suggested age range of 18 to 35 across 14 scales/dimensions (i.e. positive affect, negative affect, past, future, desire to change, education, work/career, family, leisure/social, health, financial/material, self/physical appearance, relationships, and spiritual). The instrument contains 56 items plus 3 validity check items which can be answered using a 4 point scale. Internal consistency of the 14 scales ranges from .47 to .86 and .94 for the over-all score. Correlations with three standardized tests confirmed the validity of the test construct.

(2) The Satisfaction with Life Scale (SWLS) by Diener et al. (1985) is a 5-item instrument designed to measure global cognitive judgments of the rater's lives. Each item is rated using a 7 point scale. The test has a high temporal stability (r=.92) and high internal consistency (r=.87). It is reported to have moderate to have correlations with other SWB measures and is suitable for different age groups.

Procedure

The researcher made use of available data from two previously conducted studies using SWBSF and SWLS. The data were then analyzed using SPSS and AMOS software.

Data Analysis

In the course of development of the short form of the SWBSF, the researcher made use of the flowing steps:

Step 1: Using the SWLS as a global measure of SWB, the items of the SWBSF were correlated with it to determine which of the items are significantly correlated. Items with less than .30 correlation coefficient were discarded and not incorporated in further analysis.

Step 2: Using linear regression, significantly correlated items were used as predictors of the SWLS. The researcher made use of the three methods (i.e. stepwise backward, and forward regression methods) to check which of the SWBSF items can be considered good and acceptable predictors.

Step 3: Good or acceptable items were then subjected to Principal Component Analysis to determine if there were underlying factors in the new Short Form of the SWBSF.

Step 4: To establish the validity of the test, confirmatory factory analysis (CFA) through Structural Equation Modeling (SEM) was done. The items of the short form of SWBSF were considered as manifest variables of the SWBSF-SF (Short Form). The SWLS was used as a latent exogenous variable on the SWBSF which is considered as the endogenous variable. Model fit summaries of goodness of fit were then used to validate the SEM results.

Step 5: To establish the reliability of the test, the Cronbach Alpha was computed.

Results

Item Correlations

Of the 56 items found in the original SWBSF, only 30 items are qualified. The rest of the items have correlation coefficients that are less than .3 as set by the researcher. The qualified 30 items are presented in Table 1.

Table 1
Qualified Correlation coefficients of SWBSF items

SWBSF items	Correlation Coefficient with SWLS
2	.380**
3	.543**
5	.379**
7	.365**
9	.308**
12	.322**
14	.383**
24	.459**
25	.308**
26	.308**
28	.406**
29	.182**
30	.313**
31	.349**
33	.587**
34	.378**
35	.398**
36	.480**
38	.422**
40	.343**
42	.461**
44	.323**
45	.308**
47	.312**
48	.388**
49	.336**
50	.149**
51	.140**
53	.394**
56	.340**

** $p<.01$

Linear Regression

Using the 30 SWBSF items that are highly correlated with the SWLS as predictors of SWLS, the results reveal that the Adjusted R^2 for all of the methods are equal to .549 value. Of the 30 items, only 11 items are significant predictors of SWLS. Shown in Table 2 are the standardized and unstandardized coefficients and significance of the 11 items.

Table 2
Linear Regression of Qualified Items

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	*SE*	*Beta*	*t*	*p*
(Constant)	-2.130	1.253		-1.699	.090
Item_2	.724	.298	.080	2.433	.015
Item_3	1.333	.268	.183	4.982	.000
Item_5	.552	.238	.077	2.323	.021
Item_24	.856	.263	.111	3.249	.001
Item_33	1.738	.312	.218	5.577	.000
Item_35	.616	.234	.090	2.630	.009
Item_36	.955	.239	.138	3.996	.000
Item_45	.739	.215	.106	3.437	.001
Item_47	.420	.171	.078	2.456	.014
Item_49	.775	.286	.089	2.712	.007
Item_56	.421	.195	.069	2.164	.031

Principal Component Analysis

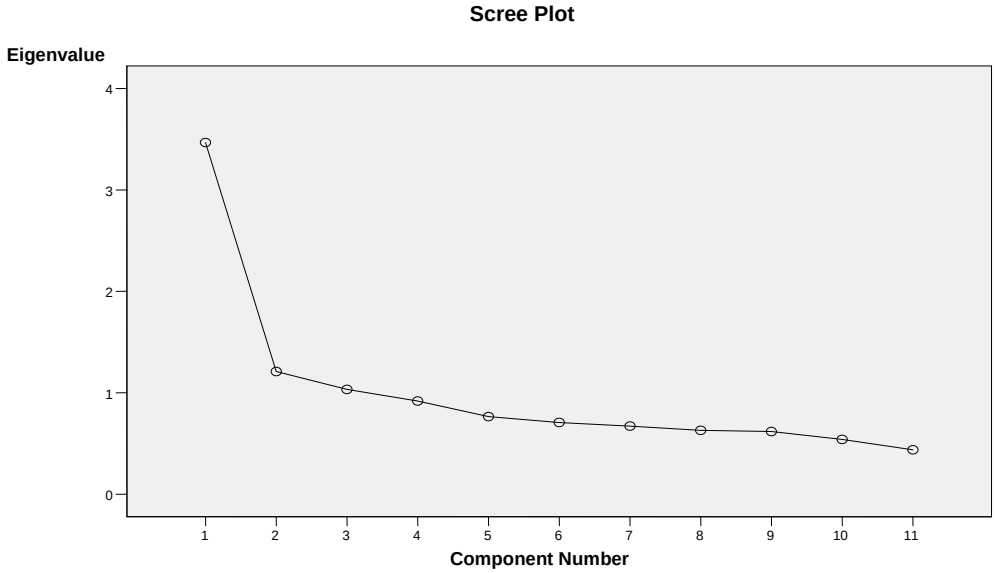
Using the same set of 11 items, these were subjected to principal component analysis with varimax rotation to determine if there exists underlying components. Results indicate that there are three possible components which accounts for 51.909 cumulative variance as shown in Table 3. However, Scree plot (Figure 1) reveals that there is only one factor. Given this, the researcher opted to very further the three models in the succeeding analysis.

Table 3
Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.47	31.515	31.515	3.47	31.52	31.52	2.68	24.348	24.348
2	1.21	11.000	42.515	1.21	11.00	42.52	1.67	15.209	39.557
3	1.03	9.395	51.909	1.03	9.39	51.91	1.36	12.352	51.909

Note. Extraction Method: Principal Component Analysis.

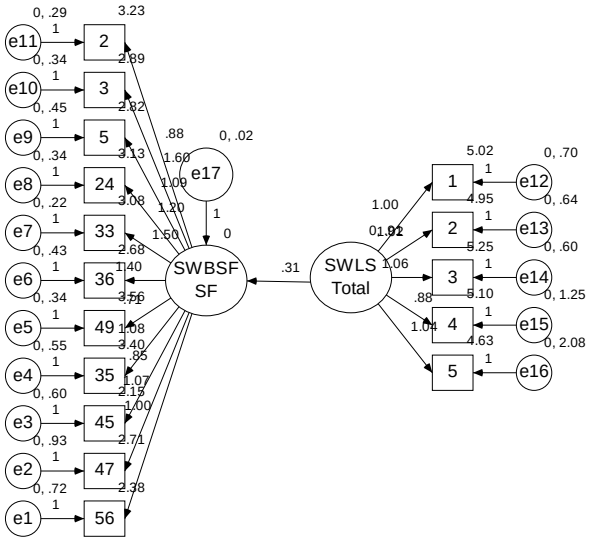
Figure 1
Scree Plot of the 11 items



Validity

In the preceeding factor analysis, there were three suggested model structures of the Short Form instrument. Given this, the researcher ran the data using AMOS software to come up with three models (see Figures 2, 3, and 4). In Model A, all of the items were considered as just belonging to one component which is the Short Form Total of the SWBSF. The SWLS score was then used to establish convergent validity and act as a latent exogenous variable. In Model B, two factors were created – satisfaction and life changes. In Model C, only the first component was included (satisfaction).

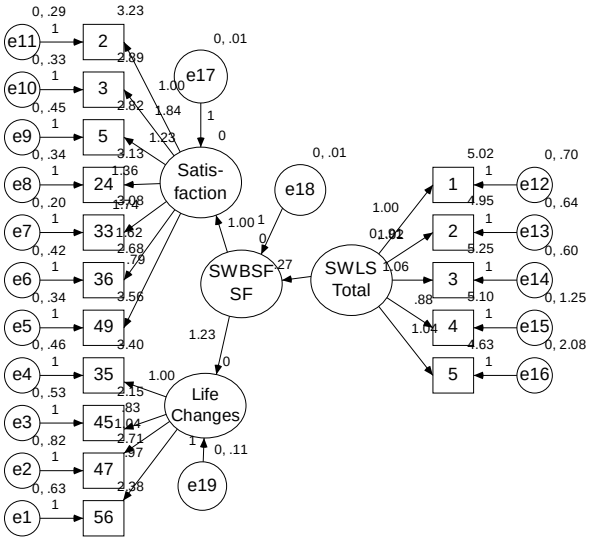
Figure 2
Model A SEM



Model A

RMSEA = .056 AIC = 454.805 BCC = 457.006

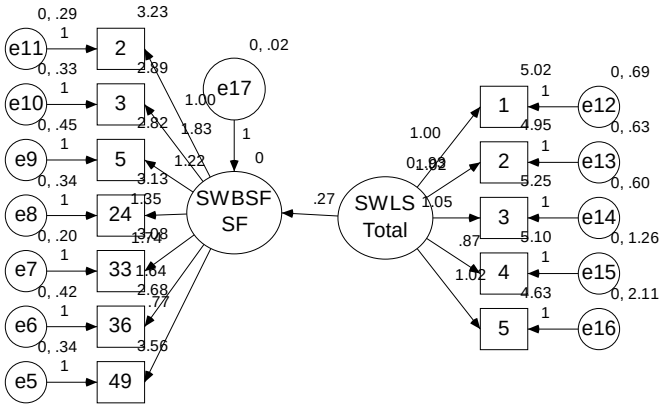
Figure 3
Model B SEM



Model B

RMSEA = .046 AIC = 366.940 BCC = 369.230

Figure 4
Model C SEM



Model C

RMSEA = .049 AIC = 224.468 BCC = 225.732

The Goodness of Fit as indicated by the RMSEA value reveal that in all of three models, the data fits the model. As a rule of thumb, the RMSEA should be equal to .05 or less in order to say that there is goodness of fit. However, a value of 0.08 or less would also be considered reasonable.

Table 4
Summary of SEM results

Model	Number of		Goodness of Fit Indicators		
	Items	Component/s	RMSEA	AIC	BCC
A	11	1	.056	454.805	457.006
B	11	2	.046	366.940	369.230
C	7	1	.049	224.468	225.732

To determine which of the three models is acceptable, the Akaike Information Criterion (AIC) and Brown-Cudeck Criterion (BCC) were used. Generally, of the different models presented, the one with the smallest value is considered the acceptable model (see table 4). In this case, it would be Model C (AIC=224.468; BCC = 225.732). However, considering the RMSEA, Model B can be considered the best of the three models (RMSEA = .046).

In addition, to establish convergent validity the significant and very high correlations of the Short Form with the SWBSF (r=.827, $p < .05$) and SWLS (r=.722, $p < .05$) indicates that it is comparable to these two measures.

Reliability

The computed Cronbach Alpha Coefficient is .76 which is within the minimum acceptable value (George & Mallery, 2003). As such, it can be said that the Short Form of the SWBSF is a reliable test comparable to the original SWBSF. Shown in table 5 are the item-total statistics of the 11 items.

Table 5
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 2	28.84	19.891	.401	.751
Item 3	29.17	18.276	.533	.734
Item 5	29.24	19.077	.422	.747
Item 24	28.93	19.041	.476	.742
Item 33	28.98	18.597	.582	.731
Item 35	28.67	18.684	.437	.745
Item 36	29.39	18.782	.437	.745
Item 45	29.91	19.385	.331	.759
Item 47	29.35	18.307	.355	.761
Item 49	28.51	20.274	.320	.758
Item 56	29.69	18.766	.362	.757

Discussion

The purpose of this paper was to develop a short form of the SWBSF using previously available data. First, item correlations with the SWLS were obtained to determine which of the original items can globally measure SWB. Of the 56 items original items in the SWBSF (the additional 3 items are validity checks), only 30 were found to be highly correlated (r=.30 and above, $p < .05$). This indicates that the rest of the items that were discarded are not global measures of SWB. To verify this, linear regression was done as the next step. In all of the three methods employed (stepwise, forward, and backward approaches), the adjusted R^2 is .549. This tells us that the 11 items can significantly predict roughly 55% of the variance of SWLS.

Afterwards, the structure of the surviving items were checked for underlying factors using principal component analysis. Initial results inferred the possibility of two to three possible models which were then verified using CFA and SEM. Of the three models tested, the second model showed that there are two underlying components of the Short Form of the SWBSF which were named Satisfaction and Life Changes. This was established using the goodness of fit measures (RMSEA) and model comparison indices (AIC and BCC). Further correlation of the Short Form with the original SWBSF and the SWLS indicate that the new shortened instrument can measure both global and multi-dimensional SWB. As such, the

Short Form can account for both and be utilized as a rapid screener or quick measure. Also, even though the instrument was reduced to about 1/5 or 20% of the original SWBSF, the reliability Cronbach Alpha coefficient is still acceptable. This signifies that the Short Form is reliable.

Lastly, given that there were limitations in the early development stages of the instrument (i.e. the original intended and theorized factor structure did not match the principal component analysis), the current research looked into available data and was able to verify the potential structure of SWB. However, future research can further examine its structure stability, reliability, as well as validity. The possibility of coming up with norms can also be looked into. Nonetheless, the instrument seems to have merit as a research tool that requires fast, dependable, and justifiable results to researchers.

References

Balingit, F., & Hernandez, R. (2008). *Re-validation of the constructs of the Subjective Well-Being Scale for Filipinos*. Unpublished manuscript, De La Salle University.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542-575.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49*, 71-75.

Diener, E., Scollon, C.N., & Lucas, R.E. (2003). The evolving concept of subjective well-being: The multifaceted nature of happiness. *Advances in Cell Aging and Gerontology, 15*, 187–219

George, D., & Mallery,P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update* (4th ed.). Boston: Allyn & Bacon.

Hernandez, R (2006). *The construction, validation, and standardization of the subjective well-being scale for young adults*. Unpublished masters thesis, University of Santo Tomas.

Smith, A. B., Wright, E. P., Rush, R., Stark, D. P., Velikova, G., & Selby, P. J. (2005). *Rasch analysis of the dimensional structure of the hospital anxiety and depression scale, Psycho-Oncology.* Wiley InterScience (www.interscience.wiley.com).

Appendix
The Short Form of the SWBSF

New Item #	Original Item #	Item Stem
1	2	I feel good about myself.
2	3	I am contented with my life right now.
3	5	I am satisfied with the decisions I made in the past.
4	24	I am contented with my social life.
5	33	I can say that I generally lived a satisfying life.
6	35	I sometimes wish that I was born to another family.
7	36	I believe that I have everything I need in life.
8	45	I believe that I'm better off if my life changed for the better.
9	47	Given the chance, I would like to forget my past.
10	49	I look forward to spending time with my family.
11	56	There are times when I wish that I have another work/degree/career other than what I have right now.
Validity Item		
12	58	I answered truthfully and honestly all of the items.