

THE VALIDITY AND RELIABILITY OF SUBJECTIVE WELL-BEING INSTRUMENTS IN EARLY ADOLESCENTS

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ABSTRACT

The research aimed to produce empirical evidence about the validity and reliability of subjective well-being instruments by modifying the instruments. The research's subjects were 394 early adolescent respondents ranging in age from 12-13 years old in Sleman regency, Yogyakarta, using a random sampling technique. The validity of subjective well-being instruments was measured by using expert judgment and calculating Gregory's formula. Instrument reliability was measured by Cronbach's Alpha calculation. The results show that the subjective well-being instrument in the modified early adolescents has good validity and reliability so that the modification of this instrument can be used to measure the condition of subjective well-being in early adolescents in Indonesia.

Keywords: instrument validity, instrument reliability, subjective well-being, early adolescents

INTRODUCTION

Diener, Oishi, and Lucas (2003) have stated that subjective well-being is defined as a cognitive assessment and a person's affective judgment. At the same time, Wheatley (2017) has said that subjective well-being is an evaluation related to emotional responses, satisfaction with specific domains of life, and satisfaction with life as a whole. The evaluation includes matters relating to happiness or unhappiness, as well as good and bad evaluations of him himself (Giyati & Wardani, 2016).

Subjective well-being is important in a person and felt by everyone. The condition of subjective well-being that is felt by early adolescents can affect daily activities. Giyati and Wardani (2016) have stated that the development of positive potentials carried out by early adolescents towards themselves will result in optimal subjective well-being that is directly related to the task of development in early adolescents, conversely, when early adolescents have

difficulty developing positive potential possessed, it will cause developmental tasks in early adolescents to be inhibited so the subjective well-being conditions in early adolescents do not run optimally. So, it can be concluded that subjective well-being is a condition that exists in early adolescents who have an influence in supporting daily activities optimally.

Subjective well-being can be seen through two dimensions, namely the affective and cognitive dimensions. Diener (2009) has explained that the affective dimension consists of positive and negative affect, while cognitive dimensions consist of global life satisfaction assessments and life satisfaction assessments in certain domains. Positive and negative affect includes an understanding of attitudes and values that are directly related to emotions that include everyday life experiences by comparing good feelings with bad ones (Yang, Li, & Kou, 2017). Positive affect extends the realm of thought by producing higher possibilities in broader thinking and action because people can see more possibilities (Steinmayr et al.,

2016). Whereas, Tian, Yu, and Huebner (2017) have explained that someone who has a high positive affect will have high subjective well-being. Negative affect is the result of evaluations of internal or external stimuli that are unpleasant to the individual because there are stimuli that are considered not harmful or threatening (Ronen et al., 2016). Whereas, life satisfaction is a process of subjective evaluation that compares a person's expectations and goals with one's ability to progress towards achieving the expected goals (Bajaj & Pande, 2016).

The positive and negative effects of early adolescents are very diverse. Among the positive effects are happy, joyful, love, grateful, happy, proud, optimistic, amazed, satisfied, and calm. While the negative affects that early adolescents have are sad, disappointed, hopeless, angry, suspicious, afraid, hateful, anxious, jealous, and guilty. These effects can affect daily activities in early adolescents. Another dimension that is no less important is the cognitive dimension. The cognitive dimension refers to the satisfaction of life in understanding itself, both globally and specifically. The matters relating to life satisfaction are self-confidence and not changing themselves like others, eager to undergo daily activities, and so forth.

These dimensions develop a measuring instrument to see the condition of one's subjective well-being. Azwar (2019) has stated that measurement is a step used to quantify the attribute being measured. The instrument of subjective well-being created by Diener, Oishi, and Lucas (2003) is a psychological measurement used to reveal how individuals or groups' subjective well-being condition. This is supported by research Navarro et al. (2015) that examines the subjective well-being conditions experienced by adolescents using the Personal Well-being Index (PWI-1) instrument, the Satisfaction with Life Scale (SWLS), and the Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS). These three instruments are used to measure the condition of subjective well-being in adolescents in Catalonia. In addition, the same research is also carried out by Sierra et al. (2017). They try to test the SWLS instrument against teenagers in Spain. In Indonesia, research on subjective well-being has also been carried out by Giyati and Wardani (2016) about the subjective well-being of late adolescents associated with social propriety and personality in late adolescents. The instrument used in the research used the SWLS instrument in relation to the measurement of life satisfaction assessment and the Scale of Positive and Negative Experience (SPANE) instrument in relation to the assessment of positive and negative affect.

According to Abidin (2017), a good measurement tool must have the character of validity and reliability. Validity is the accuracy of research measurement tools (Azwar, 2019). In other words, validity is the ability possessed by measuring devices when used to measure research objects (Allen & Yen, 1979). There are several validity types in a study, namely content validity, construct validity, and criteria validity. Content

validity is a measurement involving items of research instrument in revealing concepts to be studied. This will result in the items' high validity in reflecting the whole concept to be measured (Suryani & Hendryadi, 2015). Besides, validity is needed in determining the interpretation obtained from the assessment results. Research is also important to see the consistency or stability of the results of the assessment, or this is called reliability. Reliability in a study is a standard of consistency between two measurement results in a study in examining the same object. Allen and Yen (1979) have revealed that if a measuring instrument has a correlation between the coefficient values of two observed scores, then the measuring instrument is declared to have met the reliability requirements. Measurement of subjective well-being refers to the dimension of subjective well-being. Measurement of this dimension's aspects is important to note because it must be suitable for measuring the research subject (Daukantaitė, Hefferon, & Sikström, 2016).

Based on the description results, the purpose of the research is to measure the subjective well-being measurement in early adolescents based on the SWLS and SPANE instruments and scales modified by the researcher by adjusting the subject to be studied. Scale modification in the research is important to be done with the consideration that each subject in an area or region has different characteristics. The research focuses on the content validity of subjective well-being instruments and the reliability of subjective well-being instruments.

METHODS

Population in the research is the early adolescents who live in Sleman regency, Yogyakarta, with an age range of 12-13 years. The random sampling technique is a technique used in getting samples to be studied. The sample amounts to 394 early adolescents. The research uses a questionnaire with a Likert scale of 1 (strongly disagree) to 5 (strongly agree). This scale is modified from the Diener scale consisting of the SWLS instrument and the SPANE instrument. The number of items for SWLS instruments is 24 items with positive and negative statements. At the same time, the number of items for the SPANE instrument is 12 items with a positive statement. It can be seen in Table 1 and 2.

The research is carried out by modifying the subjective well-being instrument by requiring re-validation. The modifications remain on the basis of the original theoretical construct and only change the structure of the items on the main scale. Furthermore, the instrument modification results are consulted with expert judgment in the field of Psychology to see whether the instruments are valid or not. The testing is done once to get items that meet the criteria. The analysis is performed by item analysis and reliability testing of the instrument.

The validity of the content used is based on expert judgment assessments, which are further

Table 1 Blue Print for Positive and Negative Affective Instruments

Aspects	Indicator	Item number		N
		PA item	NA item	
PA	Fun effects experienced by individuals	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13		13
NA	The unpleasantness experienced by individuals	14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24		11
Total				24 items

Tabel 2 Blue Print of Life Satisfaction Instrument

Aspects	Indicator	Item number	Number of items
		positive item	
Cognitive	The ability to understand yourself against the reality that exists	1, 2, 3, 4, 7, 8, 5, 6, 9, 10, 11, 12	12
Total			12 items

validated using the Gregory formula. According to Allen and Yen (1979), content validity consists of logical validity and display validity. After that, an assessment is carried out by expert judgment, which has competence in accordance with the research conducted. Item analysis is based on the calculation of the following formula (Gregory, 2010).

$$V_i = \frac{D}{(A+B+C+D)} \quad (1)$$

Information :

A = the number of items the second expert disagrees

B = the number of items the first expert agrees, the second expert disagrees

C = the number of items the first expert disagrees, the second expert agrees

D = number of items the second expert agrees

The content validity criteria are as follows:

0,8-1 = Very high validity

0,6-0,79 = High validity

0,4-0,59 = Medium validity

0,2-0,39 = Low validity

0,00-0,19 = Very low validity

For the reliability of an instrument, if it has a high correlation between the number of results of tests conducted with the number of actual results Allen and Yen (1979), the Cronbach Alpha technique with SPSS 22 software is used in the research. Other calculations are done by calculating the standard measurement error (SEM) with the equation:

$$SEM = SDx \sqrt{1 - \text{reliability coefficient}} \quad (2)$$

Information:

SEM = Standard Error of Measurement

SDx = Standard Deviation

Next, to get the confidence interval value for the actual score, it uses the formula:

$$x - z_c \cdot SEM \leq T \leq + z_c \cdot SEM \quad (3)$$

Information:

SEM = Standard Error of Measurement

x = Observation Score

z_c = Critical Value of Standard Deviation

RESULTS AND DISCUSSIONS

The following is the acquisition of data based on the calculation of validity by expert judgment using the Gregory formula.

$$V_i = \frac{D}{(A+B+C+D)}$$

Information:

A = 1

B = 0

C = 0

D = 35

$$V_i = \frac{35}{(1+0+0+35)}$$

$$= \frac{35}{36}$$

$$= 0,972$$

Based on the results of the calculation of content validity on subjective instruments, it is found that around 35 items are approved on subjective instruments that are declared valid. Furthermore, 1 item that is approved on subjective instruments is declared invalid.

The instrument reliability testing is then performed using SPSS 22 by calculating the Cronbach Alpha value. Then the test results are obtained that can be seen in Table 1.

Table 3 Output Case Preprocessing Summary

	N	%
Valid	394	100,0
Excluded	0	0,0
Total	394	100,0

Based on Table 3, the results of the research use the number of respondents as many as 394 initial people with all data filled. The valid number in the research is 100%.

Table 4 Output Reliability Statistics

Cronbach's Alpha	N of Items
0,824	35

Based on Table 4, the amounts obtained from approved items are 35 quantities that produce value, Alpha Cronbach is amounting to 0,824. This reveals that 35 statement items are reliable or consistent. This is evidenced by the Cronbach Alpha value, which is greater than the r table value with a significance level of 5% is 0,60.

Table 5 Output Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1	118,2817	135,791	0,435	0,816
Item 2	118,5051	139,497	0,350	0,819
Item 3	118,5863	137,561	0,277	0,821
Item 4	118,0635	137,261	0,456	0,816
Item 5	118,3579	136,984	0,407	0,817
Item 6	118,7513	133,760	0,494	0,813
Item 7	118,7005	141,167	0,145	0,825
Item 8	118,6523	140,324	0,245	0,821
Item 9	118,7081	137,149	0,400	0,817
Item 10	118,5584	137,377	0,358	0,818
Item 11	118,9239	141,414	0,119	0,826
Item 12	118,8731	139,745	0,187	0,824
Item 13	118,9391	135,391	0,448	0,815
Item 14	118,8579	136,570	0,293	0,820
Item 15	118,6751	137,579	0,296	0,820
Item 16	118,3223	137,807	0,271	0,821
Item 17	119,0000	136,784	0,324	0,819
Item 18	118,5736	139,533	0,230	0,822
Item 19	118,6497	139,383	0,218	0,823
Item 20	118,2792	135,326	0,362	0,818
Item 21	118,6371	140,552	0,193	0,823
Item 22	118,0279	139,401	0,219	0,822
Item 23	119,2690	140,777	0,177	0,824
Item 24	118,1523	136,068	0,492	0,815
Item 25	118,1980	136,526	0,428	0,816
Item 26	118,3883	137,826	0,377	0,818

Tabel 5 Output Item-Total Statistics (Continued)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 27	118,3553	135,080	0,406	0,816
Item 28	118,3959	133,756	0,508	0,813
Item 29	118,8223	142,024	0,070	0,829
Item 30	118,1802	138,42	0,270	0,821
Item 31	118,1193	140,034	0,233	0,822
Item 32	118,7310	137,515	0,307	0,819
Item 33	118,6117	133,052	0,525	0,812
Item 34	118,6827	142,217	0,106	0,826
Item 35	118,2056	132,953	0,570	0,811

Furthermore, the results of the Alpha Cronbach calculation in Table 5 describe the 35 items of subjective welfare instruments that have a value > r table based on the normal distribution table with a significance level of 5%, which is 0,113. Item 1 has Cronbach's Alpha value of 0,816 and is greater than the value of r table (0,113), so item 1 is determined reliably. Item 2 amounts to 0,819 > 0,113 so item 2 is declared reliable, as well as other items > 0,113. So it can be concluded as overall items that are declared reliable and can be used as a tool to measure subjective well-being in the early adolescent.

The research aims to measure the validity and reliability of subjective well-being instruments that have been modified by researchers. The modification of the subjective well-being instrument is based on early adolescents' culture in Yogyakarta, Indonesia. From the research results on 394 early adolescents in Sleman Regency, Yogyakarta, who are the subject of the research, the results show that subjective well-being instruments have good validity. Furthermore, the subjective well-being instruments are declared reliable to measure its conditions. Being in the early teens in Yogyakarta, Casas (2017) has said that instrument modification is important because it is based on the use of language in each different country, which is likely to produce different interpretations. Therefore, this instrument's modification aims to harmonize between the subject to be examined with the measuring instrument to be used.

The results obtained are also in line with previous research conducted by Akhtar (2019) with subjects totaling 1.003 people with an age range of 14-50. It uses the instrument Positive Affect Negative Affect Schedule (HOTA) and satisfaction with Life Scale (SWLS), which shows that all dimensions have a reliability value > 0,80 with item-total correlation > 0,3. It can be concluded that the instrument has good validity and reliability.

It is found that the value of the validity of subjective well-being instruments based on the assessment of expert judgment and Gregory's calculations obtained that 35 items are declared valid

while 1 item is declared invalid. Invalid items will be dropped and not included in the research. So it can be concluded that the research uses 35 valid items that will be distributed to research respondents. According to Holder (2012), the measurement of subjective well-being reflects the dimensions contained in it, and it has been tested by the instrument validity. This is inseparable from the preparation of good measuring instruments; the better the measurement tools, the better the results (Nima et al., 2020).

The results of the reliability calculation indicate that from 35 items obtained, Alpha Cronbach's value of 0,824, where the Alpha Cronbach's > r table at a significance level of 5% is 0,60 with a total of 394 respondents. It can be concluded that the modification of the subjective well-being instrument in the research is declared reliable. Garson (2013) has revealed that the reliability of a research instrument using Cronbach's Alpha calculation in seeing the reliability of an instrument is a way to see the percentage of each item's variance that can explain the research hypothesis with the conditions in the field. If the Cronbach's Alpha value from the research results is higher than the r table's value, then the research instrument is declared reliable or trusted to use. Conversely, if the Cronbach's Alpha value of a research instrument is smaller than the r table's value, then the research instrument is declared to be unreliable or recalculated. So that, an instrument can be declared reliable, and by calculating Cronbach alpha will produce good reliability in a study (Trizano-Hermosilla & Alvarado, 2016).

Based on these descriptions, it can be concluded that of the 36 items on the subjective well-being scale, there is 1 item that is declared invalid, so it must be dropped because the item has at-value < 0,75. Therefore overall, the items on a subjective well-being scale modified by the researcher have good validity. That is, the scale of subjective well-being consists of positive affect, negative affect, and life satisfaction measures the content that it defines, except for items that are dropped. This is supported by the reliability test using Alpha Cronbach's formula of 0,824. The value is then compared with the r table's value with a value of N =

394 in the r table value distribution at a significance of 5%. The r table obtained is 0,113, so that the Alpha Cronbach's > r table value the questionnaire is declared reliable.

So that the validity and reliability of the modification of subjective well-being instruments are declared feasible to be used in measuring the condition of subjective well-being, especially in early adolescents in Yogyakarta. This is consistent with the opinions expressed by Garson (2013), which explains that a good instrument is already has a validity of reliability in accordance with predetermined criteria. The validity of this content is fundamental to be positioned to test the construct validity. A valid measurement tool validity must have been tested through a test content validation before another validation test. Content validation is more emphasizing for temporary rational or logical validation to empirical validation. In the initial stages of developing the instrument, the purpose of content validation is to reduce variation potential for instrument manufacturing errors and increase the likelihood of obtaining an index of construct validity in research up. At the same time, the criteria for the reliability of a measuring instrument can be seen from a measuring instrument's reliability coefficient. In practice, the reliability of a measuring instrument is very fundamental that must be owned by every measuring instrument. This aims to measure the subject accurately and produce reliable data (Arifin, 2017).

CONCLUSIONS

Based on the calculation results, it can be concluded that the subjective well-being instrument in the modified early adolescents has good validity and reliability so that the modification of this instrument can be used to measure the subjective well-being conditions in early adolescents in Indonesia. The use of modified instruments is crucial because it has been through several testing procedures and is in accordance with the conditions of the culture under study. The use of instruments directly without considering the research subjects will be fatal. This is due to doubts between the instrument used and the subject to be studied. Therefore, the modification of instruments in a study is important to do and be tested scientifically.

Based on the results, the managerial implications of the research are researchers in measuring individuals' affective conditions. The accuracy between the measuring instrument used and the object measured is important because affective measurements in each country tend to have differences. For further research, it can use instruments that have been validated and have passed the reliability test in the research to reveal more deeply the conditions of subjective well-being in early adolescents in Indonesia more broadly.

However, the research is devoted to the measurement of subjective well-being conditions that are served by early adolescents. So, the next research

is expected to develop measuring tools that can measure the level of affective aside from subjective well-being in both individuals and at a more diverse age range. Even so, the research only focuses on early adolescents in Yogyakarta, so that further research is expected to be able to test the validity and reliability of subjective well-being instruments at different and more diverse age ranges.

The limited use of instruments in the research only focuses on measurements for early adolescents. Measurement outside the early stage of adolescent development requires appropriate instruments or by carrying out further instrument development.

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APPENDIX

1. POSITIVE AND NEGATIVE AFFECTIVE INSTRUMENTS

Aspects	Indicator	Statement
Positive affect	Individuals experience pleasant emotions	1. Excited
		2. Joy
		3. Love
		4. Give thanks
		5. Happy
		6. Proud
		7. Courageous
		8. Believe
		9. Optimistic
		10. Favors
		11. Be calm
		12. Be amazed
		13. Satisfied
Negative affect	Individuals experience unpleasant emotions	14. Sad
		15. Disappointed
		16. Desperate
		17. Get angry
		18. Suspicious
		19. Fear
		20. Hate it
		21. Worry
		22. Envy of the day
		23. Guilt

2. LIFE SATISFACTION INSTRUMENT

Aspects	Indicator	Statement
Cognitive	Being able to understand one's own abilities with the conditions experienced at this time	1. I am optimistic about achieving the ideals that I want
		2. I am proud of the abilities that I have
		3. I am happy with the activities that I am currently undergoing
		4. I love the life that I lead
		5. I am confident in my abilities
		6. I don't need to change myself as others do
		7. I accept the shortcomings that I have
		8. the shortcomings that I have I use to motivate myself to be better than before
		9. I am happy when others have better abilities than me
		10. I am passionate about doing daily activities
		11. I accept if the results I get don't match what I want
		12. I accept myself as I am now

INSTRUCTIONS POSITIVE AND NEGATIVE AFFECTIVE INSTRUMENTS

Think about what you have done and felt for the past 4 weeks. Then express how often you experience the feelings below. Read the statement below carefully and then give your answer to the width of the answer for each statement by marking the checklist (√) of the following answer choices:

VR very rarely
R rarely
S sometimes
O often
VO very often

Note :

You do not need to worry about the confidentiality of the answers to the statements you provide because we will maintain the confidentiality of the answers to your statements.

Answer all statements without missing anything, make sure all statements are filled in accordance with your own situation. In this case, there are no good or bad judgments, also there is no right or wrong. You are completely free to choose.

Example :

No	STATEMENT	VR	R	S	O	VO
1	Happy		√			
2	Disappointed				√	

POSITIVE AND NEGATIVE AFFECTIVE QUESTIONNAIRE

Think about what you have done and felt for the past 4 weeks. Then express how often you experience the feelings below. Read the statement below carefully and then give your answer to the width of the answer for each statement by marking the checklist (√) of the following answer choices:

Fill in the statement below:

No	STATEMENT	VR	R	S	O	VO
1	Happy					
2	Joy					
3	Love					
4	Be grateful					
5	Happy					
6	Proud					
7	Brave					
8	Believe					
9	Optimistic					
10	Favors					
11	Quiet					
12	Amazed					
13	Satisfied					
14	Sad					
15	Disappointed					
16	Hopeless					
17	Angry					
18	Suspicious					

19	Afraid
20	Hate
21	Anxious
22	Envy
23	Guilty feeling

INSTRUCTIONS
LIFE SATISFACTION INSTRUMENTS

Carefully read the statements below and then give your answers to the width of the answers for each statement by marking the checklist (√) of the following answer choices:

- VR very rarely
- R rarely
- S sometimes
- O often
- VO very often

Note :

You do not need to worry about the confidentiality of the answers to the statements you provide because we will maintain the confidentiality of the answers to your statements.

Answer all statements without missing anything, make sure all statements are filled in accordance with your own situation. In this case, there are no good or bad judgments, also there is no right or wrong. You are completely free to choose.

Example :

No	STATEMENT	VR	R	S	O	VO
1	I feel I have a good ability		√			
2	I feel happy with the results that I have obtained					√

LIFE SATISFACTION QUESTIONNAIRE

Fill in the statement below :

No	STATEMENT	VR	R	S	O	VO
1	I am optimistic about achieving the ideals that I want					
2	I am proud of the abilities that I have					
3	I am happy with the activities that I am currently undergoing					
4	I love the life that I lead					
5	I am confident in my abilities					
6	I don't need to change myself as others do					
7	I accept the shortcomings that I have					
8	the shortcomings that I have I use to motivate myself to be better than before					
9	I am happy when others have better abilities than me					
10	I am passionate about doing daily activities					
11	I accept if the results I get don't match what I want					
12	I accept myself as I am now					
