OPTIMA: Journal of Guidance and Counseling
Volume 2, No.2, Ocotober 2022: Page 30-40
ISSN 2776-6624 (print) || 2776-6683 (online)
Available online at http://ejournal.upi.edu/index.php/optima

RELIABILITY AND VALIDITY ANALYSIS OF ADOLESCENT SELF-CONCEPT QUESTIONNAIRES IN CHILDREN'S ORPHANAGES

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Received: August 8th 2022 Received: September 12th 2022 Accepted: October 30th 2022

Abstract: Positive self-concept is fundamental to individual development because it can improve social skills, self-confidence, self-ideals that match expectations, and respect for oneself. The purpose of this study is to measure the validity and reliability of the instrument of adolescent self-concept in childcare institutions. The study was conducted in 2022, involving 61 adolescents living in nursing homes with a distribution of 21 men and 40 women. The research approach used is quantitative with 10 question items and a 5-point Likert scale as an alternative answer. Analysis of reliability and validity using Rasch with the help of the Winstep application. The results of the study found that Cronbach's Alpha value was 0.43 which was in the weak category. Then, the results of the person reliability test have a value of 0.32 as an indicator of the consistency of respondents' answers, including in the weak category. From the results of the analysis, the item reliability value is 0.80 which is in the excellent category. Thus, the self-concept of adolescents living in orphanages can be measured using this instrument.

Keywords: Reliability, Self-Concept, Validity

OPTIMA: Journal of Guidance and Counseling
Website: http://ejournal.upi.edu/index.php/OPTIMA

Permalink:
How to cite (APA): Maryamah, N & Saomah, A. (2022). Reliability And Validity Analysis Of Adolescent Self-Concept Questionnaires In Children's Orphanages. *OPTIMA: Journal of Guidance and Counseling, 2*(2), 30-40.

INTRODUCTION

Self-concept is a very important and fundamental variable for individual development, including being able to improve social skills, self-confidence, self-ideals that are by expectations, and respect for the self. Adolescence is an important age in the process of developing self-concept. Because, adolescents are experiencing a critical period and are preparing themselves to become adults (Cervone & Pervin, 2012; Hurlock, 2006; Monks et al., 1999). Self-concept is a teenager's view of himself that is determined by the development of other people's perceptions of himself and the nature of the environment around him (Hurlock, 1986). Good environmental interaction will shape adolescents' self-

concept positively (Wanei et al., 2006). Environments that influence self-concept include the family, school, and social environment.

The family environment is the primary environment that forms the characteristics of adolescents since childhood, then the school environment is the second environment that dominates the process of forming self-concept because more than five hours of adolescent activities are in school. Meanwhile, the social environment is a community environment outside of school and family that intersects with direct teenagers (Calhoun & Acocella, 1990; Hurlock, 2006). Based on the results of Sukmawati's research, (2016) orphanages are families for children and adolescents who have lost or been abandoned by their families. Moreover, Sibrani's research (2019) suggests that the family is the best environment for children's growth and development. Although orphanages are social institutions that care for and provide educational facilities like a family, it is still compared to real family will be different.

The TSCS (Tennesse Self Concept Scale) is an instrument conceived by Fitts in 1996 (1971) to measure the self-concept of individuals aged 12 and over. The device has two dimensions, namely internal and external. The internal dimension consists of identifying the self explaining self-description, judging self/satisfaction explaining an individual's feelings towards his self-assessment of others, and behavioral self explaining the behaviors that can be done by individuals to shape themselves. Fitts make the two dimensions interconnected. Thus, this instrument only measures external dimensions that already represent the internal dimensions.

The instrument used by the researcher consists of 10 questions with five statements in the form of multiple choices that include levels on the external dimensions of self-concept. The external dimensions of self-concept measured include (1) Physical self, namely the individual's perception of his physical or physical state (fat, thin, tall, short), his appearance (beautiful, ugly, attractive, unattractive) and his health (Zulkarnain et al., 2020). (2) Moral-Ethical Self, that is, the individual's perception of his relationship with God and man, the moral values held by which include the limits of good and bad. (3) Personal self, that is, the individual's feeling of literacy towards how much acceptance of his state of affairs. (4) Family self, that is, an individual's view of feelings and self-esteem in his position as a family member. (5) Social self, which is an individual's assessment of his interaction with the surrounding environment.

METHOD

Participant

The approach used is quantitative with 10 items of 5-point Likert scale questions. This study involved 61 adolescents living in Children's Orphanages with age criteria according to the developmental age of Hurlock (2006)which is 12-18 years. The following data on research participants are presented in table 1.

Table 1
Table of Research Participants

Place	Gender	
	Male	Female
Children's Orphanage	21	40
Total	61 people	

The study was in 2022 by distributing questionnaires directly at children's orphanages. Before filling out the questionnaire, participants were explained the purpose of the study, the confidentiality of participant data, and how to do it. Participants are committed to engaging in research voluntarily without any incentive from researchers.

Indonesian Version of Self-Concept Questionnaire

The instruments used in this survey were compiled and created by researchers based on the theory of Fitts (1996). The scale on the instrument used is a Likert scale in the form of numbers with a range of 1-5. Although Fitts Drafted the instrument in 1965, the TSCS is still popular and most widely used among researchers due to its practicality in the hope that respondents will fill out questionnaires according to actual circumstances and conditions. Therefore, researchers decided to use this measuring instrument to see a picture of adolescents' self-concept in orphanages.

Data Analysis Procedure

This research procedure uses the Rasch model with the help of the Winstep application. First, instrument development is carried out by determining the data score, then at this stage, there is a process of verifying the assumption of rationality and item analysis. Second, it measures the accuracy of item items with the category level on the instrument. Third, item bias detection was carried out with the characteristics of the received Outfit Mean Square (MNSQ) value: $0.5 < MNSQ < 1.5$ to test the consistency of the answers with the difficulty of the statement items. Then, the received Outfit Z-Standard (ZSTD) value: $-2.0 < ZSTD < + 2.0$ to describe how much (measure result column) is an outlier, not

measuring or too easy, or too difficult. And the received Point Measure Correlation (Pt Measure Corr) value: 0.4<Pt Measure Corr < 0.85 to describe how good (SE), the statement item is not understood, responded to differently, or confused with other items. Fourth, conduct a reliability test by looking at the Person Measure value, if the average nikai is higher than the 0.0 logit, then the ability of the orphanage teenagers is greater than the difficulty level of the item and the Cronbach Alpha value is the interaction between the person and the item as a whole.

FINDINGS AND DISCUSSIONS

Undimensionality

Unidimensionality analysis is a mandatory assumption of the Rasch model, which is carried out to find out if each item analyzed only measures one dimension (Natanael, 2021: 175). The analysis of professionality is used to detect the accuracy of the instrument in measuring predetermined variables using Output Table 2. The criteria for unidimensionality can be seen from the raw variance explained by measures ≥ 20% with a note if the value is 20% - 40% (enough), 40% - 60% (good), and if it is above 60% (very good) and if the unexplained variance in 1st to 5th construct of residuals massing-each <15%.

Table of STANDARDIZED RESIDUAL variance (in Eigenvalue units)

		-- Empirical --		Modeled
Total raw variance in observations	=	60.2	100.0%	100.0%
Raw variance explained by measures	=	17.2	28.5%	28.5%
Raw variance explained by persons	=	.9	1.5%	1.5%
Raw Variance explained by items	=	16.3	27.1%	27.0%
Raw unexplained variance (total)	=	43.0	71.5% 100.0%	71.5%
Unexplned variance in 1st contrast	=	4.1	6.8% 9.5%	
Unexplned variance in 2nd contrast	=	3.5	5.9% 8.2%	
Unexplned variance in 3rd contrast	=	3.1	5.1% 7.2%	
Unexplned variance in 4th contrast	=	3.0	4.9% 6.9%	
Unexplned variance in 5th contrast	=	2.7	4.5% 6.3%	

Figure 1. Unidimensionality

The results of the unidimensionality test showed that the raw value of self-concept variance was 28.5% which was in the sufficient category, and the

value of unexplained variance in 1st to 5th construct of residuals massing was 6.8%, 5.9%, 5.1%, 4.9%, 4.5%, respectively. Thus, the developed instrument has measured the specified variable, namely the self-concept of adolescents in the Children's Orphanage.

Rating Scale Diagnostic

The rating scale test can be seen from the Observed average and Andrich threshold scores. The criterion in this measurement is that the higher the Andrich Threshold value, the data shows that respondents understand the difference between each alternative answer. The results of the self-concept rating scale test are sequentially worth Observed Count 20, 28, 89, 264, and 299. Then, the cilia Andrich Threshold obtained sequentially is NONE, -.03, -.63, .18, and .49. In more detail, the diagnostic rating scale is described in figure 2.

SUMMARY OF CATEGORY STRUCTURE. Model="R"

CATEGORY LABEL	SCORE	OBSERVED COUNT	%	OBSVD AVRGE	SAMPLE EXPECT	INFIT MNSQ	OUTFIT MNSQ	ANDRICH THRESHOLD	CATEGORY MEASURE	
1	1	20	3	.14	.20	.91	1.16	NONE	(-1.78)	1
2	2	28	5	.51	.41	1.13	1.39	-.03	-.72	2
3	3	89	15	.71	.65	1.06	.99	-.63	-.06	3
4	4	164	27	.85	.93	1.02	.93	.18	.67	4
5	5	299	50	1.27	1.25	.96	.98	.49	(1.96)	5

Figure 2. Diagnostic Rating Scale

Based on these results, it shows that the observed average and Andrich threshold values in self-concept instruments experience an increase. This shows that respondents understand the difference between each alternative answer. The level of the instrument of self-concept has been by the behavioral conditions of adolescents living in orphanages in real terms.

Content Validity Test

The content validity test is determined based on the criteria of the Outfit Mean Square (MNSQ) value received: 0.5 < MNSQ < 1.5 to test the consistency of the answer with the difficulty of the statement item. Then, the accepted Outfit Z-Standard (ZSTD) value: -2.0 < ZSTD < + 2.0 to describe how much (the measure result column) is an outlier item, not measuring or too easy, or too difficult. And the Point Measure Correlation (Pt Measure Corr) value received:

0.4<Pt Measure Corr < 0.85 to describe how good (SE), the statement item is not understood, responded to differently, or confused with other items. An item is said to be fit if it meets at least 1 of the 3 criteria (Boone et. al., 2014; Bond & Fox, 2015). In detail, figure 3. will explain the results of the content validity test for self-concept instruments.

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PT-MEASURE CORR.	PT-MEASURE EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	ITEM
1	279	60	-.77	.21	1.86	2.4	1.86	2.3	A .20	.27	66.7	68.1	4
3	263	60	-.24	.16	1.81	2.8	1.62	2.1	B .40	.35	45.0	51.3	5
6	268	60	-.38	.17	1.07	.4	1.22	.8	C .26	.33	51.7	55.6	4
7	236	60	.29	.13	1.15	.8	1.19	1.0	D .24	.44	20.0	33.0	5
2	246	60	.12	.14	1.15	.8	.94	-.2	E .55	.41	41.7	37.8	5
9	244	60	.16	.13	1.04	.3	1.07	.4	e .36	.41	40.0	37.7	5
10	248	60	.08	.14	.87	-.6	.91	-.4	d .44	.40	25.0	38.0	3
8	246	60	.12	.14	.78	-1.1	.76	-1.1	c .59	.41	38.3	37.8	3
4	208	60	.69	.11	.66	-2.4	.58	-2.8	b .61	.49	41.7	30.4	4
5	256	60	-.08	.15	.42	-3.3	.54	-2.2	a .03	.38	55.0	43.2	4
MEAN	249.4	60.0	.00	.15	1.08	.0	1.07	.0			42.5	43.3	
S.D.	18.4	.0	.38	.03	.44	1.8	.40	1.6			12.9	11.1	

Figure 3. Content Validity Test

Based on the above criteria, the calculation results show that several items are accepted and not received. Figure 3. shows the 1st criterion there are 2 misfit items, namely 1 and 3, with MNSQ OUTFIT values of 1.86 and 1.62, respectively. According to the 2nd criterion, there are 10 items worth -2.0 < ZSTD < 2.0. Meanwhile, based on the 3rd criterion, 3 items do not have cilia Pt Measure Corr with a range of 0.4 < 0.85, namely 5.7, and 9. The following results of the content validity test in conjunction with self-concept variability are presented in table 2.

Table 2
Test Results Validity Self-Concept Instrument

Description	No Item	Quantity
Adequate (usable)	1,2,3,4,5,6,7,8,9,10	10
Inadequate (discarded)	-	-
Total		10

Thus, there are 10 items of adolescent self-concept items in orphanages declared to be functioning normally and can be understood precisely by respondents and can measure what should be measured, namely self-concept.

Reliability Test

Analysis of the instrument was carried out to determine the reliability of the instrument, to see whether this self-concept instrument was reliable, it could be used as a measuring tool to measure the self-concept of adolescent orphanages whenever and wherever it was used. The reliability test aims to determine the determination or consistency of a series of measuring instruments. The reliability test was carried out using a Rasch model based on criteria according to Sumintono and Widhiarso (2015) namely: (1) Person Measure, if the average nikai is higher than logit 0.0, then the ability of orphanage teenagers is greater than the level of difficulty of the item. (2) Cronbach's Alpha value, is the interaction between the person and the item as a whole. Here are the criteria of Alpha Cronbach.

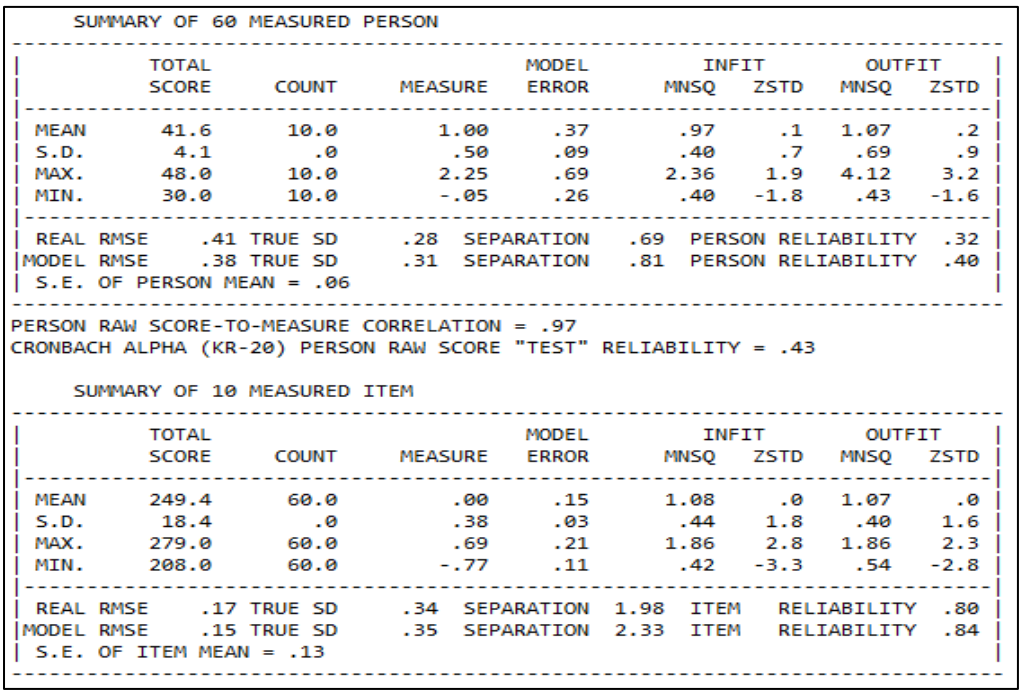
Table 3
Cronbach Alpha Value Reliability Criteria

No.	Value	Criteria
1	<0,5	Bad
2	0,5-0,6	Ugly
3	0,6-0,7	Enough
4	0,7-0,8	Good
5	>0,8	Very Good

Table 4
Person Reliability and Item Reliability Value Criteria

No.	Value	Criteria
1	<0,67	Weak
2	0,67-0,80	Enough
3	0,81-0,90	Good
4	0,91-0,94	Very Good
5	>0,94	Excellent

Based on the criteria that have been described above, the results of reliability tests using the Rasch model through the Winstep application on self-concept instruments can be seen in figure 4.



SUMMARY OF 60 MEASURED PERSON

	TOTAL SCORE	COUNT	MEASURE	MODEL ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	41.6	10.0	1.00	.37	.97	.1	1.07	.2
S.D.	4.1	.0	.50	.09	.40	.7	.69	.9
MAX.	48.0	10.0	2.25	.69	2.36	1.9	4.12	3.2
MIN.	30.0	10.0	-.05	.26	.40	-1.8	.43	-1.6

REAL RMSE	.41	TRUE SD	.28	SEPARATION	.69 PERSON RELIABILITY .32
MODEL RMSE	.38	TRUE SD	.31	SEPARATION	.81 PERSON RELIABILITY .40
S.E. OF PERSON MEAN = .06					

PERSON RAW SCORE-TO-MEASURE CORRELATION = .97
CRONBACH ALPHA (KR-20) PERSON RAW SCORE "TEST" RELIABILITY = .43

SUMMARY OF 10 MEASURED ITEM

	TOTAL SCORE	COUNT	MEASURE	MODEL ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	249.4	60.0	.00	.15	1.08	.0	1.07	.0
S.D.	18.4	.0	.38	.03	.44	1.8	.40	1.6
MAX.	279.0	60.0	.69	.21	1.86	2.8	1.86	2.3
MIN.	208.0	60.0	-.77	.11	.42	-3.3	.54	-2.8

REAL RMSE	.17	TRUE SD	.34	SEPARATION	1.98 ITEM RELIABILITY .80
MODEL RMSE	.15	TRUE SD	.35	SEPARATION	2.33 ITEM RELIABILITY .84
S.E. OF ITEM MEAN = .13					

Figure 4. Summary of Statistics

Based on figure 4. The results of the reliability test were found on the self-concept instrument for adolescents living in orphanages as follows.

Table 5
Self-concept Instrument Reliability Test Results

No.		Mean Measure	Separation	Reliability	Alpha Cronbach
1	***Person***	1,00	0,69	0,32	0,43
2	***Item***	0,00	1,98	0,80	

Based on the results of the statistical summary of the self-concept instrument in figure 4. can be described as follows. The Person measure value of 1.00 is the average value of respondents in answering self-concept instruments. A logit value greater than 0.0 indicates that the respondent's ability is higher than the difficulty of the item on the instrument. The reliability test of the instrument item is 0.80 (pretty good), which means that the quality of the instrument item can measure the self-concept of adolescents in orphanages very well. The respondent's reliability test (person) was 0.43 (weak), which means that the respondent has less consistency in answering the statements of items in

the self-concept instrument. The separation value is used to group people and items. The ideal criterion is that the greater the separation value, the better the quality of the instrument. Grouping in more detail is called strata separators, with the following formula.

$$H = ((4 \times SEPARATION) + 1) / 3$$

Based on this formula, the separation value in the self-concept instrument is as follows.

$$H = ((4 \times 0{,}69) + 1) / 3$$
$$H = 1{,}25$$

The separation value for the person is 0.69 and the separation value for items is 1.98. The strata separation value is 1.25 and is rounded to two, which means that there are two categories. Cronbach's alpha value is 0.43 which means that overall there is a pretty good interaction between the respondents and each item in the self-concept instrument statement.

Based on the results of the unidimensionality analysis, adolescent self-concept instruments showed a raw variance explained by the value of 28.5% which was insufficient humidity. Then, the Unexplained variance values in 1st to 5th all have values above 15%. Thus, each item on the instrument that has been designed can measure the self-concept of adolescents living in Children's Social Orphanages. The instrument can precisely measure the self-concept of adolescents in orphanages on four aspects, namely Physical Self, Psychological Self Image, Real Self Image, and Ideal Self.

The results of the Rating Scale Diagnostic show that the observed average and Andrich threshold have increased. This means that the level of self-concept is by the behavioral conditions of adolescents living in orphanages in real terms and the level of answers is as expected. The results of the content validity test to see the suitability of each item show that the 10 items that have been designed are declared to be able to function normally and can be understood appropriately by adolescents living in orphanages and can manifestly self-concept.

The respondent's reliability test is in the weak category, which means that the respondent has less consistency in answering the statements of items on the self-concept instrument. however, Cronbach's alpha value based on

respondents' answers suggests that overall there was a pretty good interaction between the respondents and each item in the self-concept instrument statement.

CONCLUSION AND RECOMMENDATION

The instrument of self-exposure of adolescents living in Children's Orphanages based on Fitts's theory is stated to be functioning normally and can be understood precisely by respondents and can measure what must be measured, namely self-concept. However, based on the results of the reliability test, there are still items in the weak category. So, there need to be improvements to some items.

A**CKNOWLEDGEMENTS**

The authors would like to thank the Department of Guidance and Counseling at the University of Education Indonesia as a place of study and to organize related courses, a children's orphanage in the district. Garut as well as to the research locations for their participation in this research activity.

REFERENCES

Boone, W. J., Staver, J. R., Yale, M. S., Boone, W. J., Staver, J. R., & Yale, M. S. (2014). Item Measures. *Rasch Analysis in the Human Sciences*, 93–110. https://doi.org/10.1007/978-94-007-6857-4_5

Calhoun, F., & Acocella, J. R. (1990). *Psikologi tentang Penyesuaian dan Hubungan Kemanusiaan*. IKIP Semarang Press.

Cervone, D., & Pervin, L. A. (2012). *Kepribadian : Teori dan Penelitian (10th ed.)*. Salemba Humanika.

Fitts, W. H. (1971). The Self-Concept And Self-Actualization. *Studies On The Self Concept.* https://psycnet.apa.org/record/1983-12714-001

Hurlock, E. B. (1986). *Personality Development.* Tata McGraw-Hill Publishing Company.

Hurlock, E. B. (2006). *Psikologi Perkembangan : Suatu Pendekatan Sepanjang Rentang Hidup*. In Erlangga (Edisi Keli). Erlangga.

Monks, F. J., Knoers, A. M. . ., & Haditono, S. R. (1999). *Psikologi Perkembangan*. Gajah Mada University Press.

Natanael Yonathan. (2021). Analisis Rasch model Indonesia Problematic Internet Use Scale (IPIUS). *Persona: Jurnal Psikologi Indonesia, 10* (1), pp. 167-186. DOI: https://doi.org/10.30996/persona.v10i1.4827

Sibarani, A. (2019). *Gambaran Konsep Diri Remaja Yang Tinggal Di Panti Asuhan Kecamatan Medan Deli*.

Sukmawati, E. (2016). Gambaran Konsep Diri Anak Asuh di Panti Sosial PSAA 3 Ceger Jakarta Timur. *EMPATI: Jurnal Ilmu Kesejahteraan Sosial, 5*(1), 20–33. https://doi.org/10.15408/empati.v5i1.9774

Sumintono, B., & Widhiarso, W. (2015). *Aplikasi Pemodelan Rasch Pada Assessment Pendidikan (I, Issue September).* Trim Komunikata.

Wanei, G. K., Susana, T., Arini, A. T., Adiyanti, M., Gamayanti, I. L., Hidajat, L. L., Widyastuti, V., & Setyandari. (2006). *Konsep Diri Positif, Menentukan Prestasi Anak. Kanisius.*

Zulkarnain, I., Asmara, S., & Sutatminingsih, R. (2020). *Membentuk Konsep Diri Melalui Budaya Timur : Tinjauan Psikologi Komunikasi* (I. Butsi Febry (ed.)).