Psychological Well-Being Santri scale (PWBSs): Construct validity with Confirmatory Factor Analysis

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Abstract

The Psychological Well-Being of Santri is a measuring instrument that aims to measure the Psychological Well-Being of Santri. Therefore, this study aims to test the construct validity of this measuring instrument. PWBSs includes six subscales, each consisting of 4 items designed to measure the dimensions of the psychological well-being of santri as follows: 1) Personal, 2) Emotional, 3) Social, 4) Physical, 5) Spiritual, 6) Cognitive. The total sample in this study was 595 respondents. Consisting of 334 males and 261 females aged between 12-25 years. Samping in this study used probability sampling techniques using random sampling techniques. The analysis method used is Confirmatory Factor Analysis (CFA) with the help of Lisrel 8.7 software. The test results prove that there are 43 items that are in accordance with the data and 21 items in psychological well-being instrument of santri measure more than one factor or do not match the data. The researchers suggested that these 21 items be revised from the measuring instrument because they measure more than one factor.

Keywords: confirmatory factor analysis, construct validity, psychological well-being of santri

Abstrak

Kesejahteraan Psikologis Santri merupakan suatu alat ukur yang bertujuan untuk mengukur Kesejahteraan Psikologis Santri. Oleh karena itu, penelitian ini bertujuan untuk menguji validitas konstruk alat ukur ini. PWBS meliputi enam subskala yang masing-masing terdiri dari 4 item yang dirancang untuk mengukur dimensi kesejahteraan psikologis santri sebagai berikut: 1) Pribadi, 2) Emosi, 3) Sosial, 4) Fisik, 5) Spiritual, 6) Kognitif. Total sampel dalam penelitian ini berjumlah 595 responden. Terdiri dari 334 laki-laki dan 261 perempuan dengan usia antara 12-25 tahun. Pengambilan sampel dalam penelitian ini menggunakan teknik probability sampling dengan menggunakan teknik Random Sampling. Metode analisis yang digunakan adalah Confirmatory Factor Analysis (CFA) dengan bantuan software Lisrel 8.7. Hasil pengujian membuktikan bahwa terdapat 43 item yang sesuai dengan data dan 21 item dalam Instrumen Kesejahteraan Psikologis Santri mengukur lebih dari satu faktor atau tidak sesuai dengan data. Peneliti menyarankan agar 21 item tersebut direvisi dari alat ukur karena mengukur lebih dari satu faktor.

Kata kunci*: confirmatory factor analysis, kesejahteraan psikologis santri, validitas konstruk*

Introduction

Psychological well-being is an important component in creating an individual's subjective experience of satisfaction, satisfaction with the past, happiness in the present and optimism for facing the future (Ogunola, 2024). Various psychological well-being instruments have been widely used in previous studies, such as psychological well-being of adolescents in the family circle (Raihana et al., 2023), psychological well-being in Muslim adolescents (Asyraf et al., 2022), and psychological well-being of adolescents aged 12-15 years (Abidin et al., 2020). However, psychological well-being instruments for santri are still very rare. Therefore, further development of these instruments is needed.

Research related to psychological well-being specifically for santri has been conducted by several researchers. However, it was carried out based on a qualitative approach with a phenomenological approach. For example, in research conducted by Nabilah et al. (2022) and Ramadhan (2012). Meanwhile, quantitative research approaches conducted on santri samples still use general psychological well-being instruments, such as in the research of Danyalin & Tantiani (2022) and Wardani & Maryam (2024).

Based on the research mentioned above, it is important to focus on psychological well-being instruments specifically for santri research subjects. Considering that students have their own characteristics in their daily activities. The application of an instrument is important, because the hope of the instrument is to provide us with information about the object/sample that will be carried out in the study so that the conclusions in the study are more specific.

Prasetyaningrum et al. (2022) in their research created a psychological well-being instrument specifically for santri as objects. The development of the instrument was compiled based on aspects of psychological well-being. The preparation of the psychological well-being instrument is based on three theories by taking dimensions that are in accordance with the needs of santri. The validation of the instrument uses content validity with the CVI formula from Aiken after being scored from expert judgment. Content validity is tested throuh testing and the relevance of the test content through rational analysis by a panel of professionals or expert in their field (Hendrayadi, 2017). Expert judgment is an assessment by experts in correcting an instrument so that it is in accordance with the expected theory. According to Majszak & Jebeile (2023) the use of expert judgment depends on the subjective abilities of individuals according to their respective fields. This can produce an assessment that not only involves knowledge, but also involves the intuition of the expert judgment.

Therefore, further development is needed regarding other more accurate validities. Thus, this study uses construct validity which is expected to be able to produce accurate instrument results to assess the psychological well-being of students. Construct validity is an important component of psychological testing (Alavi et al., 2023). In this case, the researcher used the confirmatory factor analysis approach to test the construct of the student's psychological well-being instrument. Confirmatory factor analysis or CFA is a statistical analysis method that aims to confirm the extent to which all items and tests actually measure/ provide information about only one thing, namely what is to be measured (Umar & Nisa, 2020). From the explanation above, testing the validity of the construct is very necessary to test the constructs that have been developed by previous researchers.

Literatur Review

Understanding Well-Being

Well-being is a combination of feeling good and functioning well, experiencing positive emotions such as happiness and life satisfaction , and developing one's potential, having control over one's own life, having a purpose in life, and having good relationships (Ruggeri et al., 2020). Well being in the context of Islamic boarding school students is an important topic to consider because it is related to several important events or occurrences such as proximity to Islamic boarding scholl institutions, achievement,

and mental health. Psychological well-being is defined differently according to each context. Therefore, many definitions, indicators, and instruments have been taken to fit practical variables (Pollard & Lee, 2003). WHO defines psychological well-being as an indicator of mental health shown by an individual's ability to face stress in their life, be more productive, and be able to contribute socially. Well-being is not only about the absence of disease, disorder, or disability, but about how individuals improve themselves to achieve goals (Keyes, 2002). Improving well-being is a new goal in mental health care, but currently there are many definitons of well-being based on two main concepts, namely: psychological well-being and subjective well-being (Weiss et al., 2015).

Subjective psychological well-being is based on a hedonic framework, where the desire to experience positive experiences is one of the most important things to go through. In this case, life satisfaction is measured by the balance between positive and negative emotions. This balance of negative and positive emotions is known as subjective well-being (Diener, 1984). This subjective well-being does not provide a theoretical framework about the standards that others use to judge their subjective well-being. This is in contrast to the view of Carol Ryff (1996) who attempted to build positive indicators for psychological well-being, based on theories of human functioning. This idea is in line with the eudaimonic perspective on happiness. Self-determination theory, another highly researched theory in the eudaimonic tradition, states that meeting basic psychological needs is essential for growth and well-being (Ryan and Deci, 2001). According to Doghe et al (2012) explain that Psychological Well-Being is a balance between psychological, social and physical resources against challenges in life that require these resources. In this case, Psychological Well-Being has dimensions, namely (1) self-acceptance, (2) building positive relationships with others, (3) autonomy, (4) mastery of the environment, (5) having a purpose in life, (6) having potential (Ryff, 1989).

In positive psychology, hedonistic and eudaimonic are perspectives found in well-being. Hedonistic is described as happiness and joy, thus focusing on a subjectively determined mental state consisting of life satisfaction dominated by positive emotions and the absence of negative emotions. Meanwhile, eudaimonic explains that psychological well-being will be achieved when someone realizes their potential and functions optimally. This different persepective is one of the causes of differences in defining welfare, especially for santri (Aulia et al., 2020).

Well-being measurements should include positive attributes. In the context of Islamic boarding school, the welfare of students according to this perspective is related to how students can improve their abilities and functions fully. Research by Aulia et al. (2020) in a literature review states that it is necessary to create measuring instruments and test psychological well-being instruments in accordance with the context of a representative sample, namely Islamic boarding school students.

Instrument for the Psychological Well-Being of Santri

The instrument used is a development of research by Prasetyaningrum et al. (2022), then instrument has gone through a content validation process. Validation was carried out using CVI and rater revision with valid and moderately valid statements. Then it is compiled as an instrument blue print and the numbers are adjusted for each aspect and indicator with direction from expert judgment. **Table 1.** below is a blue print of the Santri Welfare instrument after validation to then be analyzed using construct validation.

Table 1. Blueprint Instrument for the Psychological Well-Being of Indonesia Santri

Aspek	Indikator	Jenis Item		Jumlah
		F	UF	
Pribadi	Dapat menerima keadaan	1,2	3,4	4
	Berusaha menjadi santri yang baik	5,6	7,8	4
Emosi	Memiliki perasaan positif pada diri	9,10	11,12	4
	Memiliki semangat	13,14	15,16	4
Sosial	Merasa nyaman di lingkungan pondok	17,18,19	20,21	5
	Dapat berkomunikasi dengan nyaman	22,23,24	25,26	5
Fisik	Sehat jasmani	27,28	29,30	4
	Tercukupi kebutuhan pokok	31,32	33,34	4
Spiritual	Yakin pada Allah dalam menghadapi masalah	35,36	37,38	4
	Menjadikan ibadah sebagai sarana penguatan dalam menghadapi masalah	39,40	41,42	4
Kognitif	Berusaha menyelesaikan tugas akademis pondok	43,44	45,46	4
	Mencari jalan keluar dari permasalahan yang dihadapi	47,48	49,50	4
Total Item		26	24	50

Confirmatory Factor Analysis

One of the hallmarks of confirmatory factor analysis or CFA is its hypothesis-driven approach. CFA is often used in the instrument development process to examine the structure of the variables used to verify the number of items or even the underlying dimensions. Therefore, CFA helps in determining how an instrument/test should match expectations. When the instrument is multifactor in nature, the factor loading value created by CFA will show how a test can be scored using subscales and the number of factors shows the number of subscales and the pattern of relationship between items and factors shows how the subscales should be scored (Brown, 2006).

When conducting Confirmatory Factor Analysis or CFA, researchers must determine how many latent factors, which real indicators are allowed to load the latent factors (i.e., which loadings are freely estimated and constrained to zero), whether there is a correlation between the latent factors and the residual indicators (Goretzko, 2023). In addition, in carrying out the specifications, it is based on theoretical considerations and empirical findings of previous studies (usually based on Explanatory Factor Analysis). In the study, researchers did not use EFA as an analysis because EFA is an old method and is considered unscientific (Umar & Nisa, 2020). The results of CFA analysis can be the basis for using a total score (a combination of all items. For example, the feasibility of a total score can be demonstrated when the relationship between dimensions (factors) of a test can be accounted for by high factor loading values. Therefore, CFA is referred to as a method for construct validity.

First, the researcher hypothesizes the structure of the model, which is described as the specific factors underlying the item set. Then, an analysis is conducted to determine how much of the covariance between the items will be captured by the expected factor structure (Hooper, Coughlan, & Mullen, 2008). In addition to assessing the covariance captured by the model, one of the important steps in CFA is to assess the fit of the proposed model, which indicates how well the model fits the observed data (Hooper et al., 2008). Various model fit indices are used to assess the relationship between the observed data and the theoretical data expected from the model (Alavi et al., 2020). The criteria used for model fit are RMSEA <.05, CFI >.90, TLI >.90, and SRMR <.08, which are common criteria suggested by various literatures (Hu & Bentler, 1999; Wang & Wang, 2020).

Constructs are theoretical concepts or matching between theoretical and empirical relationships (Trafimow, 2020). In this case, Psychological Well-being is a construct that is manifested by various behaviors or feelings reported by Santri. Results from CFA can provide strong evidence of convergent and discriminant theoretical validity. Convergent validity is demonstrated by evidence that the

behavior/feelings of Santri differ from psychological well-being constructs that are theoretically similar or overlapping. Meanwhile, discriminant validity shows that the behavior/feelings of Santri from the construct of Psychological Well-being are theoretically different and do not correlate with each other. CFA is a type of Structural Equation Modeling (SEM) that specifically deals with measurement models. The measurement model is the relationship between the observed response, in this case the item, and the latent variable, namely psychological well-being, which is based on the hypothesis created. Therefore, the emphasis is greater on theory and hypothesis testing.

Methods

The total sample in this study consisted of 595 respondents (santri). Consisting of 334 male and 261 female (M = .438; SD = .496) with aged 15- 23 years (Mean = 14.83; SD = 2.66). The data was taken in Yogyakarta offline. Sampling in this research used probability sampling techniques using random sampling techniques. In this research, the validity of the Psychological Well-Being Santri Scale construct was tested using a confirmatory factor analysis (CFA) approach with the help of Lisrel 8.7 software (Joreskog & Sorbom, 1999). In validity testing with CFA the aim is to find out whether all items measure what they want to measure and whether each item is significant in measuring the construct. The logic is by comparing the extent of the correlation matrix estimated using theory with the correlation matrix obtained from the data. In this case, testing is carried out to test whether all items measure the same thing (unidimensional), namely the construct that is to be measured. If there is no significant difference between theory and data, it means that all the items measure the same thing. Next, using the same software, tests can be carried out on each significant item in measuring what is to be measured. After measuring its validity, the reliability of the items owned by the researcher is then tested.

The steps for testing items with CFA (Umar, 2012) are as follows:
1. Determine the specifications of the model by describing (formulating) the model (theory). After the model is established, data (samples) are collected from the field, then the correlation matrix is calculated between the existing items. If what is theorized (the unidimensional model) is indeed true, then there should be "no difference" between Σ (the matrix predicted by the theory) and S (the matrix obtained from the data). If the model does not fit the data or there are differences between the model and the data, it is necessary to modify the model by allowing for measurement errors in items that are correlated with each other. If the fit model has been obtained, then the next step is carried out.
2. Calculate the difference between the "correlation matrix expected by theory" and the "correlation matrix according to field data", to confirm S-Σ = 0 (statistical test whether the difference between S - Σ is significantly different from zero). For example, with the Chi-Square test, or with other indices such as Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), etc. The results of these calculations and statistical tests are available in output software such as Lisrel.
3. If the difference is NOT statistically significant, then the hypothesis S-Σ = 0, is NOT rejected, which means the "one factor" theoretical model fits the data and can be accepted. This means that the test validity measures only one factor, namely what it was planned to measure.
4. If the model is accepted (valid), it can be continued with a significant test of each λ coefficient which aims to see whether each item makes a significant contribution in measuring the targeted factor (construct). This can be done using a t-test with a value > 1.96.
5. If the theoretical (unidimensional) model being tested does not fit the data or is rejected, then the model can be modified by dropping certain items that are the cause of the one-factor model not fitting. To find which items need to be dropped, this can be done by adding parameters, for example freeing up the correlation between measurement errors, until model fit is achieved, and then items with residuals that have a lot of correlation can be dropped so that finally a unidimensional model can be obtained that fits the data.

Broadly speaking, CFA is carried out using two steps: 1) testing the hypothesis "whether all items measure one construct in this case the psychological well-being of students, 2) if the model is unidimensional, then testing the hypothesis "wheteher each item produces significant information about the construct being measure"

Results

Reliability

A reliable test is a test that produces the sama data even though the tes is carried out by different people, at different times adn in different places. In other words, reliability refers to the accuracy and stability of research results. The reliability of the test aims to measure the consistency,precision,repeatability, and trustworthiness of the test. Test reliability is essential to determine whether a measuring instrument in the form of the a test is reliable or consistent over time. Test reliability has several weaknesses, in this case test reliability is very susceptible to being influenced by several factors, such as the characteristics of the test participants, the conditions of the test participants, variations in the test administration, as well as errors and differences in assessment, the length of the test, the homogeneity of student abilities, and the level of difficulty of the questions (Setyaedhi, 2024). Research conducted by Putri and Nahadi (2019) found that test reliability is also related to the way the test is presented, the mood of the test participants, the attitude of the test participants when facing the exam, high and low motivation, the condition of the exam room and so on.

Table 2. Reliability Analysis

N of Items	Cronbach's Alpha	Composite Reliability
50	.871	.941

Table 2. show the result of the reliability test, the researcher obtained a Cronbach's Alpha reliability value of .871 and a composite reliability of .941. Thus indicates that this measuring instrument has a good and very high level of accuracy and stability.

Validity

Validity is one of the proofs to prove the feasibility of a measuring instrument. Validity speaks about the ability of how well a defined concept can be measured (Hair et al, 2014) concluded or measured and related accurately to theory and data or there is no difference between theory and data. In previous research, Prasetyaningrum (2022) has conducted an analysis of the proof of the validity of the instrument content. The results of the validity test showed that there were 50 valid items. This explains that the 50 items measure what is to be measured, namely the psychological well-being of students.

In this proof, the researcher conducted proof of criterion validity and construct validity. Establishing criterion validity involves determining the relationship between the instrument and external criteria. The instrument is declared valid if the correlation value in the range matches the score on the criteria. Meanwhile, construct validity refers to the ability of the test to measure the investigation of the construct theoretically. Construct validity involves proving or testing the hypothesized construct to represent the theoretical concept the researcher is trying to measure, and a number of replicated studies will provide a level of credibility for the hypothesized construct validity (Creswell, 2002).

Table 4. Criterion Validity

Aspect	Indicator	F/UF	No	Validity	Information
PENERIMAAN DIRI					
	Dapat menerima keadaan	F	Item 1	.684	Significant
		F	Item 2	.627	Significant
		UF	Item 3	.589	Significant
		UF	Item 4	.624	Significant

Aspect	Indicator	F/UF	No	Validity	Information
Pribadi	*Berusaha menjadi santri yang baik*	F	Item 5	.537	Significant
		F	Item 6	.504	Significant
		UF	Item 7	.511	Significant
		UF	Item 8	.411	Not Significant
Emosi	*Memiliki perasaan positif pada diri sendiri*	F	Item 9	.576	Significant
		F	Item 10	.554	Significant
		UF	Item 11	.370	Not Significant
		UF	Item 12	.596	Significant
	Memiliki semangat	F	Item 13	.687	Significant
		F	Item 14	.601	Significant
		UF	Item 15	.570	Significant
		UF	Item 16	.677	Significant
MAMPU BERADAPTASI DENGAN LINGKUNGAN					
Sosial	*Merasa nyaman lingkungan pondok*	F	Item 17	.549	Significant
		F	Item 18	.492	Not Significant
		F	Item 19	.537	Significant
		UF	Item 20	.424	Not Significant
		UF	Item 21	.521	Significant
	Dapat berkomunikasi dengan nyaman	F	Item 22	.581	Significant
		F	Item 23	.643	Significant
		F	Item 24	.624	Significant
		UF	Item 25	.544	Significant
		UF	Item 26	.407	Not Significant
Fisik	*Sehat Jasmani*	F	Item 27	.611	Significant
		F	Item 28	.612	Significant
		UF	Item 29	.585	Significant
		UF	Item 30	.538	Significant
	Tercukup Kebutuhan Pokok	F	Item 31	.534	Significant
		F	Item 32	.540	Significant
		UF	Item 33	.575	Significant
		UF	Item 34	.440	Not Significant
KOKOH MENGHADAPI MASALAH					
Spiritual	*Yakin pada Allah dalam menghadapi masalah*	F	Item 35	.541	Significant
		F	Item 36	.474	Not Significant
		UF	Item 37	.589	Significant
		UF	Item 38	.586	Significant
	Menjadikan ibadah sebagai sarana penguatan dalam menghadapi masalah	F	Item 39	.492	Not Significant
		F	Item 40	.575	Significant
		UF	Item 41	.467	Not Significant
		UF	Item 42	.504	Significant
Kognitif	*Berusaha menyelesaikan tugas akademis pondok*	F	Item 43	.559	Significant
		F	Item 44	.583	Significant
		UF	Item 45	.659	Significant
		UF	Item 46	.580	Significant
	Mencari jalan kelur permasalahan	F	Item 47	.551	Significant
		F	Item 48	.474	Not Significant
		UF	Item 49	.037	Not Significant
		UF	Item 50	.308	Not Significant

Table 4. Show that researcher found that there were 10 items that had a coefficient value of the loading factor below < .05. The ten items are item 8, item 11, item 20, item 26, item 34, item 36, item 39, item 48, item 49 and item 50.

Construct Validty with Confirmatory Factor Analysis

Personal Factors (Faktor Personal)

Researchers tested whether the 8 items were unidimensional, meaning they only measured personal factors. From the CFA analysis carried out with the one dfactor model, it turns out that it is not fit, with Chi-Square = 177.87, df = 20, p-value = .0000, RMSEA = .131. Therefore, the researcher made modifications to the model, where the measurement errors on several items were free to correlate with each other. So, **Figure 1.** show that obtained a fit model with Chi-Square = 20.92, df = 13, p-value = .07451, RMSEA = .036. The chi-square value produces a p-value > 0.05 (not significant), which means a one-factor model (unidimensional) where all items measure one factor, namely the personal factor.
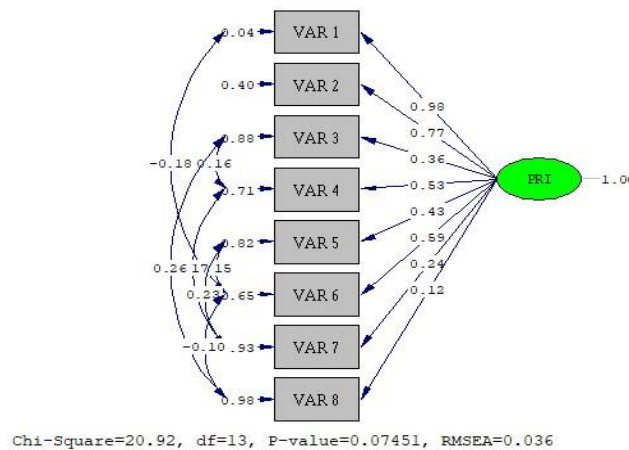

Figure 1 *Path Diagram of Personal Factors*

Table 5. Table of Factor Loadings for Students' Psychological Well-Being Items

Item	Lambda	Error	T-Value	Information
Item 1	.98	.04	24.30	Significant
Item 2	.77	.04	18.11	Significant
Item 3	**.36**	**.05**	**7.80**	**Not Significant**
Item 4	.53	.04	11.96	Significant
Item 5	**.43**	**.05**	**9.26**	**Not Significant**
Item 6	.59	.05	11.52	Significant
Item 7	**.24**	**.05**	**5.25**	**Not Significant**
Item 8	.12	.05	2.48	Significant

In the **Table 5.**, it can be seen that there are 3 items that have a loading factor value <.5, negative value and T-value <1.96 (Umar & Nisa, 2020). The three items are item 3, item 5, and item 7. The researcher suggests that the three items be revised.

Emotional Factors (Faktor Emosi)

Researchers tested whether the 8 items were unidimensional, meaning they only measured the Emotion factor. From the CFA analysis carried out with the one dfactor model, it turns out that it is not

fit, with Chi-Square = 197.19, df = 20, p-value = .0000, RMSEA = .139. Therefore, the researcher made modifications to the model, where the measurement errors on several items were free to correlate with each other. So, **Figure 2.** show that obtained a fit model with Chi-Square = 12.92, degree of freedom = 10, p-value = .22823, RMSEA = .025. The chi-square value produces a p-value > .05 (not significant), which means a one-factor model (unidimensional) where all items measure one factor, namely the personal factor.
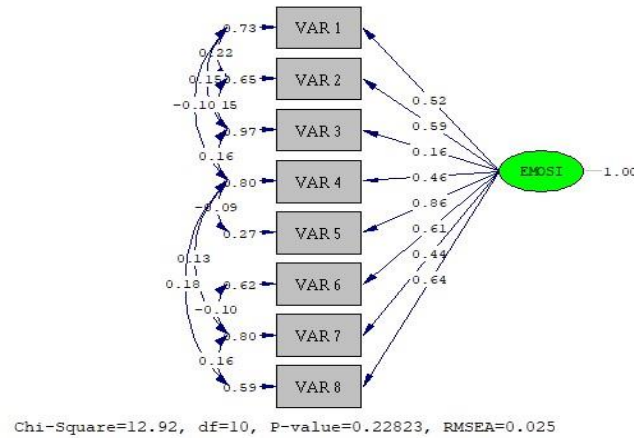

Figure 2. Path Diagram emotional factors (Faktor Emosional)

Table 6. Factor Loadings Dimension of Emotional for Students' Psychological Well-Being Items

Item	Lamda	Error	T-Value	Information
Item 9	.51	.05	10.72	Significant
Item 10	.59	.05	12.58	Significant
Item 11	**.16**	**.05**	**3.21**	**Not Significant**
Item 12	**.46**	**.06**	**7.74**	**Not Significant**
Item 13	.86	.04	19.61	Significant
Item 14	.61	.05	13.24	Significant
Item 15	**.44**	**.05**	**8.73**	**Not Significant**
Item 16	.64	.05	13.85	Significant

In **Table 6.** of the emotional dimension, it can be seen that there are 3 items that have a factor loading value of <.5, a negative value and a T-value <1.96 (Umar & Nisa, 2020). The three items are item 11, item 12, and item 15. The researcher suggests that the three items be revised.

Social Factors (*Faktor Sosial*)

Researchers tested whether the 10 items were unidimensional, meaning they only measured the social factors. From the CFA analysis carried out with the one dfactor model, it turns out that it is not fit, with chi-square = 623.86, degree of freedom = 36, p-value = .0000, RMSEA = .188. Because the model did not fit, the researcher modified the model, where the measurement errors on several items were freed to correlate with each other. After several modifications, the Chi-Square value = 26.90, degree of freedom = 18, p-value = .08093, RMSEA = .033 (**Figure 3.)**. The chi-square value produces a p-value > .05 (not significant), which means a one-factor model (unidimensional) where all items measure one factor, namely the social factor.
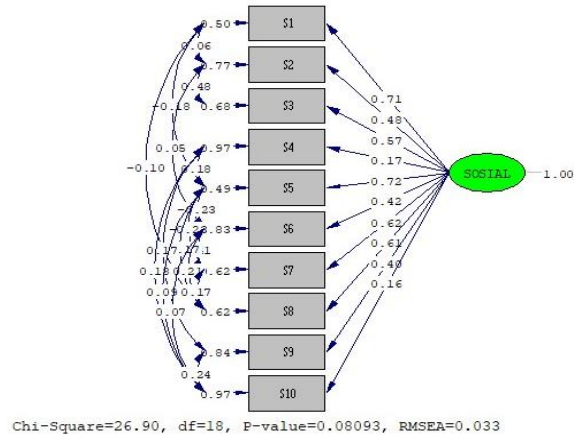
Chi-Square=26.90, df=18, P-value=0.08093, RMSEA=0.033

Figure 3. Path Diagram social factors (Faktor Sosial)

Table 7. Factor Loadings Dimension of Social for Students' Psychological Well-Being Items

Item	Lamda	Error	T-Value	Information
Item 17	.71	.05	12.91	Significant
Item 18	**.48**	**.05**	**9.35**	**Not Significant**
Item 19	.57	.05	11.30	Significant
Item 20	**.17**	**.05**	**3.10**	**Not Significant**
Item 21	.72	.07	10.29	Significant
Item 22	**.42**	**.06**	**7.36**	**Not Significant**
Item 23	.62	.05	11.51	Significant
Item 24	.61	.07	9.38	Significant
Item 25	**.40**	**.05**	**8.22**	**Not Significant**
Item 26	**.16**	**.05**	**2.99**	**Not Significant**

In **Table 7.** of the social dimension, it can be seen that there are 5 items that have a loading factor value <.5, negative value and T-value <1.96 (Umar & Nisa, 2020). The five items are item 18, item 20, item 22, item 25 and item 26. The researcher suggests that the five items be revised.

Physical Factors (Faktor Fisik)

Researchers tested whether the 8 items were unidimensional, meaning they only measured the physical factor. From the CFA analysis carried out with the one dfactor model, it turns out that it is not fit, with Chi-Square = 267.53, df = 20, p-value = .0000, RMSEA = .164. Therefore, the researcher modified the model 7 times, where the measurement errors in several items were allowed to correlate with each other. So, **Figure 4.** Show that obtained a fit model with Chi-Square = 17.00, degree of freedom = 12, p-value = .14955, RMSEA = .030. The chi-square value produces a p-value > .05 (not significant), which means a one-factor model (unidimensional) where all items measure one factor, namely the physical factor.
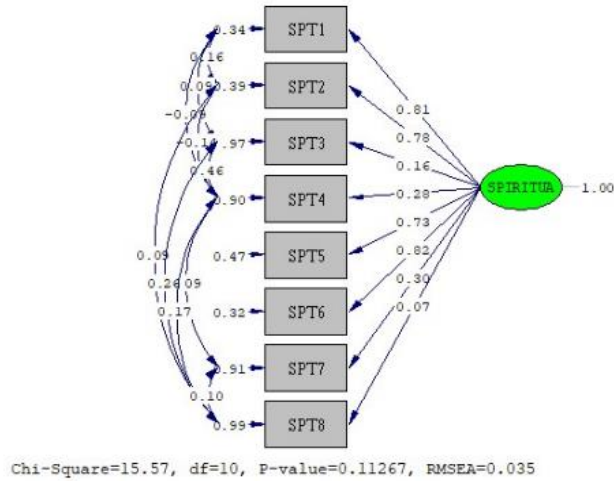
Chi-Square=15.57, df=10, P-value=0.11267, RMSEA=0.035

Figure 4. Path Diagram Physical Factors (Faktor Fisik)

Table 8. Factor Loadings dimension of physis for Students' Psychological Well-Being Items

Item	Lamda	Error	T-Value	Information
Item 27	.74	.05	15.07	Significant
Item 28	.81	.05	16.63	Significant
Item 29	**.49**	**.05**	**9.31**	**Not Significant**
Item 30	**.41**	**.05**	**8.16**	**Not Significant**
Item 31	.50	.05	10.02	Significant
Item 32	**.33**	**.05**	**6.17**	**Not Significant**
Item 33	**.23**	**.05**	**4.49**	**Not Significant**
Item 34	**.17**	**.05**	**3.33**	**Not Significant**

In **Table 8.** of the physical dimension, it can be seen that there are 5 items that have a loading factor value <.5, negative value and T-value <1.96 (Umar & Nisa, 2020). The five items are item 29, item 30, item 32, item 33 and item 34. The researcher suggests that the five items be revised.

Spiritual Factors (Faktor Spiritual)

Researchers tested whether the 8 items were unidimensional, meaning they only measured the spiritual factor. From the CFA analysis carried out with a one-factor model, it turns out that it is not fit, with Chi-Square = 276.47, df = 20, p-value = .0000, RMSEA = .167. Therefore, the researcher modified the model ten times, where the measurement errors in several items were free to correlate with each other. So, **Figure 5.** show that obtained a fit model with Chi-Square = 15.57, degree of freedom = 10, p-value = .1126, RMSEA = .035. The chi-square value produces a p-value > 0.05 (not significant), which means a one-factor model (unidimensional) where all items measure one factor, namely the spiritual factor.

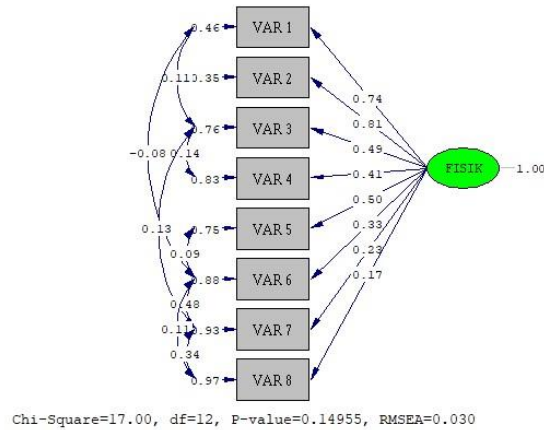Chi-Square=17.00, df=12, P-value=0.14955, RMSEA=0.030

Figure 5. Path Diagram Spiritual Factors (Faktor Spiritual)

Table 9. Factor Loadings dimension of spiritual for Students' Psychological Well-Being Items

Item	Lamda	Error	T-Value	Ketereangan
Item 35	.81	.04	19.04	Significant
Item 36	.78	.04	17.97	Significant
Item 37	**.16**	**.05**	**3.14**	**Not Significant**
Item 38	**.28**	**.05**	**5.45**	**Not Significant**
Item 39	.73	.04	17.06	Not Significant
Item 40	.82	.04	19.86	Significant
Item 41	**.30**	**.05**	**6.03**	**Not Significant**
Item 42	**.07**	**.05**	**1.42**	**Not Significat**

In **Table 9.** of the social dimension, it can be seen that there are 4 items that have a loading factor value <.5, negative value and T-value <1.96 (Umar & Nisa, 2020). The four items are item 37, item 38, item 41, and item 42. The researcher suggests that the four items be revised.

Cognitive Factors (Faktor Kognitif)

Researchers tested whether the 8 items were unidimensional, meaning they only measured the cognitive factor. From the CFA analysis carried out with a one-factor model, it turns out that it is not fit, with Chi-Square = 213.12, df = 20, p-value = .0000, RMSEA = .145. Therefore, the researcher modified the model seven times, where the measurement errors in several items were allowed to correlate with each other. So, **Figure 6.** obtained a fit model with Chi-Square = 22.14, degree of freedom = 13, p-value = .05320, RMSEA = .039. The chi-square value produces a p-value > .05 (not significant), which means a one-factor model (unidimensional) where all items measure one factor, namely the cognitive factor.

Based on the results of the factor analysis, all factors measure what is to be measured. Next, the researcher looks at whether the item is significant in measuring the factor to be measured or not and also determines whether the item needs to be eliminated or not. Therefore, it is necessary to test the null hypothesis regarding the factor loading coefficients of the items. The test is carried out by looking at the t-value for each factor loading coefficient. Testing is carried out by looking at the t-value for each factor

loading coefficient. Therefore, item analysis is then carried out to see to what extent the item can contribute to the factor to be measured. **Table 10.** shows the results of the item analysis.

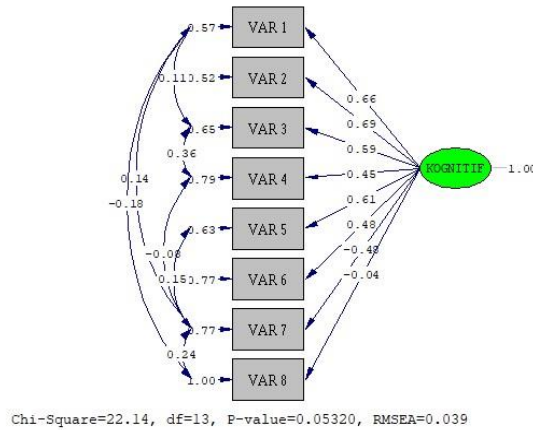**Figure 6.** Path Diagram Cognitive Factors (Faktor Kognitif)

Chi-Square=22.14, df=13, P-value=0.05320, RMSEA=0.039

Table 10. Factor Loadings for Students' Psychological Well-Being Items

Item	Lamda	Error	T-Value	Ketereangan
Item 43	.67	.05	14.62	Significant
Item 44	.73	.05	15.54	Significant
Item 45	.74	.05	15.09	Significant
Item 46	.61	.05	11.19	Significant
Item 47	.55	.05	11.73	Significant
Item 48	.50	.05	10.43	Significant
Item 49	**-.21**	**.05**	**-3.94**	**Not Significant**
Item 50	**-.02**	**.06**	**-0.31**	**Not Significant**

In the cognitive dimension, it can be seen that there are 2 items that have a loading factor value <.5, negative value and T-value <1.96 (Umar & Nisa, 2020). The five items are items 49 and item 50.

Conclusion

Based on table 2 which shows that the t value for the overall factor loading coefficient of the items is significant if the t value is > 1.96 and is positively charged so it is known that there are 3 items that are not significant, including item numbers 3,5,7,11,12,15,18,20,22,25,26,29,30,32,33,34,37,38,41,42,49 and 50. Thus, overall the items that will be 21 items were revised, which means they were not included in the factor score calculation analysis. Thus, the psychological well-being of santri instrument can be used. However, further analysis is needed where it is necessary to test the contribution of each factor to one factors.

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