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Validity and Reliability of The Verbal Aggression Scale in Junior High School Students: Exploratory and Confirmatory Factor Analysis

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Abstract

This study aimed to examine the construct validity and reliability of the Verbal Aggression Scale (VAS) among seventh-grade junior high school students using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Accurate measurement of verbal aggression is essential for identifying students' behavioral tendencies and supporting evidence-based guidance and counseling interventions. This study employed a quantitative psychometric design involving 420 seventh-grade junior high school students. The instrument was an Indonesian adaptation of the Verbal Aggression Scale developed through a systematic cross-cultural adaptation process, including forward translation, back translation, expert judgment, and pilot testing to ensure linguistic and cultural appropriateness. The final instrument consisted of 20 items rated on a five-point Likert scale. Prior to factor extraction, data suitability was confirmed using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity. The EFA results indicated that all items loaded on one dominant factor, suggesting that verbal aggression among junior high school students is primarily represented as a unidimensional construct. The CFA demonstrated an acceptable model fit, with RMSEA = 0.065, CMIN/DF = 1.931, CFI = 0.872, and TLI = 0.852. Reliability analysis showed satisfactory internal consistency, with both McDonald's ω and Cronbach's α exceeding 0.70. These findings provide empirical evidence that the Indonesian version of the Verbal Aggression Scale possesses adequate construct validity and reliability for assessing verbal aggression among junior high school students and supports its use as a valid assessment instrument for guidance and counseling services, educational research, and school-based intervention programs in Indonesia.

Keywords: *Verbal Aggression; Construct Validity; Reliability; Exploratory Factor Analysis; Confirmatory Factor Analysis.*

INTRODUCTION

The phenomenon of verbal aggressiveness among junior high school (SMP) students has become an issue that has received increasing attention in recent years. Verbal aggressiveness appears in the form of ridicule, insults, or harsh words directly, and develops among adolescents both at school and in society (Fatmawati & Maryam, 2024). In Indonesia, it is known that aggressive behavior of students still often occurs at school, Aggressive behavior shown by students includes mocking their friends with dirty words and damaging teaching and learning facilities in schools, such as crossing out tables and classroom walls, other forms of aggressiveness that often appear are students usually in the form of excessive jokes, profanity, insults, yelling, gossiping, telling the ugliness of friends, spreading unpleasant news to other students and ostracizing friends (Sari, 2016). If this phenomenon is not handled appropriately, it can interfere with students' social-emotional development and create a less conducive school climate.

The impact of verbal aggressiveness on their relationships with friends at school and the student learning process is significant. Students who become perpetrators tend to have difficulty building healthy interpersonal relationships with other friends, while those who become victims often show decreased self-confidence, anxiety, and withdrawal from the social environment (Ananta et al., 2025). In addition, verbal aggressiveness is also correlated with low academic involvement and decreased learning achievement, this is caused by impaired concentration and motivation to learn (Wang & Degol, 2015). In the context of education, this condition requires systematic intervention through guidance and counseling services (BK). Therefore, an accurate assessment of the level of verbal aggressiveness is needed, which is a crucial first step in designing preventive and curative BK services.

Theoretically, verbal aggressiveness is defined as the tendency of an individual or person to attack another person's self-concept through verbal communication such as insults, criticism of a negative nature, or threats (Infante & Wigley, 2009). The dimension of verbal aggressiveness includes various aspects, including the use of offensive language, the expression of negative emotions, and the purpose of communication that is detrimental to the other party. In the study of psychology and education, behavioral measurements such as verbal aggressiveness require psychological instruments that are able to capture constructs validly and consistently. Through confirmatory factor analysis (CFA), Exploratory factor Analysis (EFA) and reliability calculation are tools and requirements for a good instrument, in addition to having clarity of theoretical dimensions, but also supported by empirical evidence through psychometric tests such as construct validity and internal reliability (Zahra et al., 2025). Thus, the use of the right instruments is key in producing accurate and reliable data.

The urgency of using valid and reliable instruments In psychometric research, the quality of an instrument is determined not only by its level of reliability, but also by the extent to which the instrument is able to represent the theoretical construct to be measured. The construct of verbal aggressiveness is a latent variable that cannot be observed directly, so its existence is measured through a number of indicators in the form of statements that reflect verbally aggressive behavior. Therefore, construct validity testing is a very important stage to ensure that each instrument item actually measures the same construct and has a consistent relationship with the theoretical concept of verbal aggressiveness (Pramuaji & Loekmono, 2018).

Modern psychometric approaches recommend the use of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) sequentially in the construct validation process. EFA is used to explore patterns of relationships between items and identify factor structures formed based on empirical data without establishing a specific model beforehand. Furthermore, the CFA is used to test the extent to which the structure of the obtained factor is compatible with the proposed measurement model. The complementary use of the two techniques provides more comprehensive evidence of construct validity than using just one approach, as it not only reveals the structure of the factors empirically, but also evaluates the suitability of the measurement model through various goodness-of-fit indices. Thus, the integration of EFA and CFA is a recommended procedure in psychological instrument adaptation and validation research so that the resulting instruments have a strong empirical basis and can be used accurately in the target population. The use of untested instruments can result in biased data, improper interpretation, and impact on inappropriate decision-making, especially in guidance and counseling practices in schools. In the context of verbal aggressiveness assessment, invalid and reliable instruments can lead to errors in identifying students who need intervention, resulting in ineffective services (Nailunnajwa, 2025). Therefore, testing the validity and reliability of the instrument is an essential stage in psychometric research.

A number of previous studies have developed and used the Verbal Aggression Scale (VAS) as an instrument to measure verbal aggression and show that the instrument has a strong conceptual foundation. However, most studies still focus on testing reliability or validity using a single analysis approach, while studies that integrate Exploratory Factor Analysis (EFA) and Confirmatory Factor

Analysis (CFA) in the construct validation process are still relatively limited, especially in the population of junior high school students in Indonesia. Differences in the cultural characteristics, language, and developmental stages of the respondents allow for variations in the structure of the factors of an instrument, so that retesting is needed in different population contexts. The novelty of this study lies in testing the psychometric quality of the Verbal Aggression Scale (VAS) through the integration of EFA, CFA, and internal reliability testing in grade VII junior high school students in Indonesia. This study not only evaluates the internal consistency of the instrument, but also tests the suitability of the empirical factor structure obtained with the VAS measurement model so as to produce a more comprehensive proof of construct validity. The results of the study are expected to strengthen the use of VAS as a valid and reliable verbal aggressiveness assessment instrument to support the implementation of guidance and counseling services in schools.

METHOD

This study uses a quantitative approach with an instrument validation study design (psychometric study) which aims to test the validity of the construct and reliability of the Verbal Aggression Scale (VAS) in junior high school (SMP) students. This approach was chosen because it is suitable for evaluating the psychometric quality of an instrument through the analysis of factor structure and internal consistency. The research subjects were junior high school grade VII students who were in the age range of 12–13 years. This age group was chosen because it is an early adolescence phase characterized by physical, cognitive, social, and emotional development that takes place rapidly so that verbal aggressive behavior begins to appear in interactions with peers (Endah Tri Wisudahningsih, 2025).

The study respondents totaled 220 grade VII students who were selected using the proportionate stratified random sampling technique. This technique is used to provide equal opportunities for each student to become a respondent while maintaining the representation of the sample from each class. The number of samples has met the requirements of psychometric analysis. According to Winter et al. (2009), the minimum sample number for Exploratory Factor Analysis (EFA) is 50 respondents, while Sapnas and Zeller (2002) state that Confirmatory Factor Analysis (CFA) requires at least 50–100 respondents. Thus, the number of samples of 220 respondents is considered adequate to produce stable parameter estimates in the two analysis techniques.

The research instrument used the Verbal Aggression Scale (VAS) developed by Dominic A. Infante and Charles J. Wigley III, then adapted into Indonesian according to the cultural characteristics and developmental level of junior high school students. The instrument adaptation process is carried out through several stages, namely: (1) translation of the original instrument into Indonesian (forward translation); (2) back translation to ensure equality of meaning; (3) assessment by experts (expert judgment) consisting of guidance and counseling experts and psychometric experts to evaluate the suitability of content, language, and culture; (4) revision based on expert input; and (5) limited testing (pilot testing) for junior high school students to ensure that each item can be understood well before being used in the main research. The adaptation results resulted in 20 statement items measured using the five-category Likert scale, namely: (1) I hardly ever do such a thing, (2) I rarely do it, (3) I do it sometimes, (4) I do it often, and (5) I almost always do it.

Data analysis was performed using JASP software version 0.19.3.0. The first stage was the feasibility testing of the data for factor analysis using Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity. The KMO value ≥ 0.50 indicates the adequacy of the sample, while the significant Bartlett result ($p < 0.05$) indicates that the correlation matrix is worthy of further analysis using factor analysis. Next, Exploratory Factor Analysis (EFA) is carried out to identify the structure of the empirical factors i VAS. The determination of the number of factors is based on the eigenvalue of more than 1, the scree plot, and the interpretation of factor loading, with a factor loading value of ≥ 0.40 used as the criterion for receiving the item.

The factor structure obtained from the EFA was then tested using Confirmatory Factor Analysis (CFA) to evaluate the suitability of the measurement model. The feasibility of the model was assessed based on several goodness-of-fit indices, namely Chi-square/df (CMIN/DF) ≤ 3.00, Root Mean Square Error of Approximation (RMSEA) ≤ 0.08, Comparative Fit Index (CFI) ≥ 0.90, and Tucker-Lewis Index (TLI) ≥ 0.90. However, CFI and TLI values in the range of 0.80–0.90 can still be accepted as acceptable fit if supported by ol eh other model conformity index. Furthermore, the reliability of the instrument was analyzed using the Cronbach's Alpha and McDonald's Omega coefficients with a value of ≥ 0.70 as an indicator of good internal consistency.

FINDINGS AND DISCUSSION

Findings

A. Exploratory Analysis (EFA)

Exploratory Factor Analysis (EFA) was conducted to examine the underlying factor structure of the Indonesian version of the Verbal Aggression Scale (VAS) and to identify the latent dimensions represented by the observed items. EFA is an essential psychometric procedure because it explores the relationships among items without imposing a predetermined measurement structure. This analysis helps determine whether the instrument measures a single construct or multiple dimensions based on the empirical data. The results of EFA provide important evidence regarding the construct validity of the adapted instrument before the proposed measurement model is further evaluated through Confirmatory Factor Analysis (CFA). Therefore, EFA serves as the initial step in establishing the factorial validity of the Verbal Aggression Scale for junior high school students in the Indonesian context.

1. Data Feasibility Test for Factor Analysis

Before factor extraction was performed, the suitability of the data for factor analysis was examined using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. These preliminary analyses are necessary to determine whether the correlation matrix among the observed variables is appropriate for identifying latent factors. The KMO statistic evaluates the adequacy of the sample by assessing the proportion of common variance among variables that can be explained by underlying factors. A KMO value above 0.60 generally indicates that the sample is adequate for factor analysis, whereas values above 0.80 are considered to represent very good sampling adequacy. Higher KMO values suggest that the variables share sufficient common variance to justify factor extraction.

Bartlett's Test of Sphericity examines whether the correlation matrix significantly differs from an identity matrix, in which variables are assumed to be uncorrelated. A statistically significant result ($p < .05$) indicates that meaningful correlations exist among the items, supporting the application of factor analysis. Consequently, both KMO and Bartlett's Test are complementary procedures for evaluating the appropriateness of the dataset.

Only after these assumptions are satisfied can the extraction of latent factors be considered statistically appropriate. Establishing data suitability at this stage increases confidence that the resulting factor structure accurately reflects the relationships among the observed variables rather than random variation. The results of the KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity are presented in Table 1 to determine whether the dataset fulfills the statistical assumptions required for Exploratory Factor Analysis.

Table 1. Results of the KMO Test and Bartlett's Test of Sphericity

No.	Chi-squared Test			
		Value	df	p
1.	Model	277.921	151	<,001

The results of the analysis showed a KMO value of 0.800, which is included in the meritorious category, thus showing that the sample size was sufficient for factor analysis. In addition, the results of Bartlett's Test of Sphericity showed a value of $\chi^2(151)=277.921$; $p<0.001$, which indicates that the correlation matrix differs significantly from the identity matrix. Thus, there is an adequate correlation between items so that the data meets the assumptions for Exploratory Factor Analysis (EFA).

2. Analysis of the Measure of Sampling Adequacy (MSA) by Item

Following the overall assessment of data suitability using the KMO statistic and Bartlett's Test of Sphericity, the Measure of Sampling Adequacy (MSA) was examined for each individual item. The MSA value evaluates the extent to which each item shares sufficient common variance with the remaining items to justify its inclusion in factor analysis. Items with MSA values greater than 0.50 are considered adequate and contribute meaningfully to the underlying factor structure, whereas items with lower values may require revision or removal. Therefore, the analysis of MSA for each item provides additional evidence regarding the appropriateness of individual items before proceeding with the factor extraction process.

Table 2. Measure of Sampling Adequacy (MSA)

No.	*Kaiser Meyer Olkin Review*																				
	Overall MSA	E_1	N_2	E_3	N_4	E_5	N_6	N_7	E_8	N_9	E_10	N_11	E_12	N_13	E_14	E_15	N_16	E_17	N_18	N_19	E_20
1.	MSA	0.827	0.875	0.785	0.826	0.854	0.853	0.787	0.818	0.884	0.747	0.873	0.784	0.879	0.602	0.770	0.770	0.771	0.889	0.890	0.842

All indicators have an MSA value above 0.50, so all items are eligible for further analysis. The MSA value ranges from 0.602–0.890, which indicates that each item has adequate sample adequacy in forming a factor structure. Item N_13 had the lowest MSA value (0.602), while items N_18 (0.890), E_12 (0.879), and N_4 (0.854) showed excellent sample adequacy. Therefore, no items are eliminated in the early stages of analysis.

3. Factor Extraction

After confirming that the data met the assumptions for factor analysis, the next step was factor extraction to identify the underlying latent structure of the Verbal Aggression Scale (VAS). The extraction process aims to determine the number of factors that best represent the relationships among the observed items based on their shared variance. Factors were extracted using the Principal Axis Factoring (PAF) method because it is appropriate for identifying latent constructs in psychometric instrument development. The retained factors were evaluated using eigenvalues, the proportion of explained variance, and the scree plot to determine the most appropriate factor structure for the instrument.

4. Factor Loading

Following factor extraction, factor loadings were examined to evaluate the contribution of each item to the extracted factor(s). Factor loading represents the correlation between an observed item and its underlying latent factor, with higher loading values indicating a stronger relationship. In psychometric studies, items with factor loadings of 0.40 or higher are generally considered acceptable because they adequately represent the construct being measured. Therefore, the analysis of factor

loadings provides important evidence for determining whether each item should be retained as part of the final measurement model and contributes to establishing the construct validity of the instrument.

Tabel. 3 Factor Loadings

No.	Indicator	Factor 1	Factor 2	Uniqueness
1.	E_8	0.701		0.509
2.	E_1	0.647		0.569
3.	E_15	0.627		0.615
4.	E_10	0.625		0.628
5.	E_3	0.603		0.620
6.	E_17	0.521		0.729
7.	E_12	0.515		0.721
8.	E_20	0.501		0.761
9.	E_5	0.480		0.781
10.	E_14	0.400		0.803
11.	N_11		0.636	0.614
12.	N_7		0.614	0.631
13.	N_16		0.604	0.633
14.	N-6		0.588	0.644
15.	N_9		0.571	0.682
16.	N_2		0.565	0.690
17.	N_18		0.468	0.720
18.	N_13		0.436	0.820
19.	N_4			0.777
20.	N_19			0.863

Note. Applied rotation method is promax

The results of the Exploratory Factor Analysis (EFA) showed that most items had a loading factor ≥ 0.40, thus meeting the minimum criteria as an indicator of verbal aggressiveness construct. In Factor 1, the loading factor value ranged from 0.400–0.701, with the highest loading being found in item E_8 (0.701), followed by E_1 (0.647), E_15 (0.627), E_10 (0.625), and E_3 (0.603). Meanwhile, in Factor 2, the value of factor loading was in the range of 0.436–0.636, with the largest contribution shown by items N_11 (0.636), N_7 (0.614), N_16 (0.604), and N_6 (0.588). No meaningful cross-loading was found, so each indicator was more dominant on one factor. However, items N_4 and N_19 do not show a loading factor that meets the minimum limit and have relatively high uniqueness values (0.777 and 0.863). This indicates that both items are more influenced by specific variances than latent constructs formed.

5. Eigenvalues and Total Variance Explained

The eigenvalue and total variance explained were examined to determine the number of factors that should be retained and to evaluate how much of the total variance in the observed variables is accounted for by the extracted factor(s). According to the Kaiser criterion, factors with eigenvalues greater than 1.00 are considered meaningful because they explain more variance than a single observed variable. In addition, the percentage of total variance explained provides evidence of the explanatory

power of the extracted factor structure, with higher cumulative variance indicating that the retained factor(s) adequately represent the construct measured by the Verbal Aggression Scale.

Tabel 4. Factor Characteristics

		Unrotated solution				Rotated solution		
No.	Factor	Eigenvalues	SumSq. Loadings	Which was the case.	Cumulative	SumSq. Loadings	Which was the case.	Cumulative
1.	Factor 1	4.424	3.860	0.193	0.193	2.708	0.135	0.135
2.	Factor 2	3.100	2.516	0.126	0.319	2.582	0.129	0.265
3.	Factor 3	1.188	0.604	0.030	0.349	1.150	0.057	0.322
4.	Factor 4	1.132	0.600	0.030	0.379	0.845	0.042	0.364
5.	Factor 5	1.095	0.501	0.025	0.404	0.796	0.040	0.404

The characteristics of the factor show that before the rotation, Factor 1 has an eigenvalue of 4.424 and explains 19.3% of the total variance. Factor 2 has an eigenvalue of 3,100 with a contribution of 12.6%, so the two factors cumulatively explain the 31.9% variance. After Promax rotation, the variance distribution becomes more balanced. Factor 1 explains 13.5%, while Factor 2 explains 12.9% variance. Cumulatively, both factors explain 26.5% of variance, while the third to fifth factors only provide a relatively small additional variance.

Although there are five factors with eigenvalues greater than one, most of the data variation is concentrated on two main factors. This condition shows that the structure of factors has not shown a strong separation of dimensions so that empirically verbal aggressiveness is still dominated by one general construct (general factor).

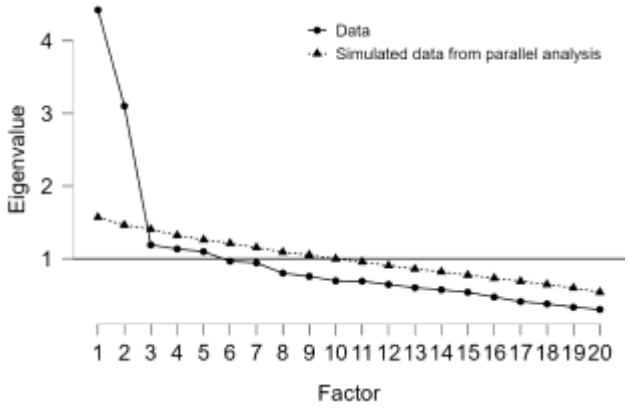


Figure 1. Scree Plot dan Parallel Analysis

The determination of the number of factors is also carried out using Scree Plot and Parallel Analysis. The scree plot shows a very sharp decrease in eigenvalue from the first factor to the second factor, then the curve starts to slope after the second factor. This pattern indicates the presence of elbows, which indicates that most of the variance is explained by initial factors.

The results of the Parallel Analysis showed that only the first two factors had a greater eigenvalue than the random simulation data, while the third factor and so on were below the parallel analysis line. Thus, only two factors are worth maintaining. However, the dominance of the first factor which is much greater than the second factor shows that the empirical structure of the instrument still tends to form a general construct (general factor). Therefore, the EFA results indicate that verbal aggressiveness in

junior high school students is more global and integrated, while two-dimensional separation still requires further confirmation through the CFA.

6. Synthesis of EFA Results

Overall, the EFA results show that the data meet all the assumptions of factor analysis (KMO = 0.800; Bartlett's Test $p < 0.001$), all items have adequate sample adequacy (MSA > 0.50), and most indicators have loading factors that meet the criteria. Although the analysis yields two groups of factors that correspond to the theoretical foundation, the eigenvalue pattern, scree plot, and parallel analysis show that the empirical structure is still dominated by one general construct. Therefore, further testing using Confirmatory Factor Analysis (CFA) is required to test the suitability of two-dimensional theoretical models.

B. Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) was conducted to verify the factor structure identified through the Exploratory Factor Analysis (EFA) and to evaluate whether the proposed measurement model adequately fits the observed data. Unlike EFA, which explores the underlying structure of the data, CFA tests a hypothesized factor model based on theoretical and empirical evidence. This analysis provides stronger evidence of construct validity by examining the relationships between latent variables and their observed indicators within a predefined measurement model. In addition, CFA allows researchers to assess the adequacy of the measurement model using several goodness-of-fit indices that reflect the consistency between the theoretical model and the empirical data. Therefore, CFA represents an essential step in confirming the factorial validity of the Indonesian version of the Verbal Aggression Scale before it is recommended for research and practical applications.

1. Goodness of Fit Model

The adequacy of the measurement model was evaluated using several commonly accepted goodness-of-fit indices to determine the extent to which the hypothesized model represented the observed data. Multiple fit indices were considered because no single statistic is sufficient to evaluate overall model fit comprehensively. The assessment included the Root Mean Square Error of Approximation (RMSEA), the Chi-square divided by degrees of freedom (CMIN/DF), the Comparative Fit Index (CFI), and the Tucker-Lewis Index (TLI), which are widely recommended in psychometric and structural equation modeling studies. Generally, lower RMSEA and CMIN/DF values, together with higher CFI and TLI values, indicate a better-fitting measurement model. The results of the goodness-of-fit evaluation are presented in the following table to determine whether the proposed factor structure of the Verbal Aggression Scale demonstrates an acceptable level of model fit.

Tabel 5. Goodness of Fit Model

No.	Instrument	N	Reliability Test		Validity				
			McDonald's	Cronbach's	RMSEA	GFI	CMIN/DF	CFI	TLI
1.	Verbal Aggression	220	0.793	0.808	0.065	0.892	1.931/118	0.872	0.852
2.	Neuroticism		0.810	0.812					
3.	Extrovers		0.782	0.778					

McDonald > 0,60 (Reliable); Cronbach alfa > 0.60 (Reliable); RMSEA ≤ 0,08 (Accepted Model); GFI (Goodness of Fit)= 0 (poor fit)-1,0 (perfect fit); CMIN/DF ≤ 2,0 (Accepted Model); CFI ≥ 0,95 (Accepted Model); TLI ≥ 0,95 (Very Good Fit). The results of the analysis showed that the model had an RMSEA of 0.065 and a CMIN/DF of 1.931, which indicates the acceptable fit category. The GFI value of 0.892, CFI of 0.872, and TLI of 0.852 is slightly below the ideal criteria, but it is still within acceptable limits in instrument development research. Overall, two-dimensional models are acceptable to represent verbal aggressiveness constructs.

2. Standardized Factor Loading

The standardized factor loadings were examined to assess the strength of the relationship between each observed item and its corresponding latent construct in the measurement model. Higher

standardized loading values indicate that an item is a stronger indicator of the underlying construct and contributes more substantially to its measurement. In psychometric research, standardized factor loadings of 0.50 or higher are generally considered acceptable, while values above 0.70 provide strong evidence of convergent validity. Therefore, the evaluation of standardized factor loadings is essential for determining whether each item adequately represents the construct of verbal aggression and should be retained in the final measurement model.

Tabel 6. Factor loadings

No.	Factor	Indicator	Estimate	Std. Error	z-value	p	95% Confidence Interval	
							Lower	Upper
1.	Factor 1	E_1	1.000	0.000			1.000	1.000
		E_3	0.888	0.108	8.187	<,001	0.675	1.101
		E_5	0.529	0.093	5.706	<,001	0.347	0.711
		E_8	0.859	0.098	8.734	<,001	0.667	1.052
		E_10	0.689	0.096	7.163	<,001	0.500	0.877
		E_12	0.761	0.114	6.656	<,001	0.537	0.985
		E_15	0.746	0.100	7.487	<,001	0.551	0.941
		E_17	0.765	0.114	6.685	<,001	0.541	0.989
		E_20	0.602	0.100	6.041	<,001	0.407	0.798
2.	Factor 2	N_2	1.000	0.000			1.000	1.000
		N-6	1.154	0.184	6.279	<,001	0.794	1.514
		N_7	1.003	0.163	6.167	<,001	0.684	1.322
		N_9	1.079	0.173	6.248	<,001	0.741	1.418
		N_11	1.258	0.194	6.500	<,001	0.878	1.637
		N_13	0.728	0.152	4.786	<,001	0.430	1.026
		N_16	1.251	0.196	6.397	<,001	0.868	1.634
		N_18	1.070	0.191	5.601	<,001	0.696	1.444

The CFA results showed that all indicators maintained had a significant factor loading ($p<0.001$).

In Factor 1, the loading value ranges from 0.529–0.888, while Factor 2 ranges from 0.728–1.258. All indicators have high z-values and a 95% confidence interval that does not cross zero, suggesting that each indicator contributes significantly to latent constructs.

These findings provide evidence that the two-dimensional model developed based on the theory has an adequate empirical representation.

3. Validitas Convergence

Convergent validity was assessed to determine the extent to which the indicators measuring the same latent construct share a high proportion of common variance. This evaluation is commonly based on the Average Variance Extracted (AVE), where an AVE value of 0.50 or higher indicates that the construct explains at least half of the variance in its indicators, thereby demonstrating adequate convergent validity. The results of the convergent validity analysis provide important evidence regarding the extent to which the items consistently represent the underlying construct of verbal

aggression in the proposed measurement model. Convergent validity was evaluated using Average Variance Extracted (AVE).

Tabel 7. Average Variance Extracted

No.	Factor	AVE
1.	Factor 1	0.334
2.	Factor 2	0.313

The AVE values of both factors were below the ideal criterion (AVE ≥ 0.50), thus indicating that the convergent validity was not optimal. These findings indicate that there is still a proportion of indicator variance that is influenced by specific variance or measurement errors. This condition is consistent with the results of the EFA which shows that the factor structure is not yet completely stable.

4. Construct Reliability

Construct reliability was evaluated to determine the internal consistency of the indicators in measuring the underlying latent construct. In CFA, construct reliability is commonly assessed using Composite Reliability (CR), where values of 0.70 or higher indicate that the construct demonstrates satisfactory reliability and that the indicators consistently measure the same concept. The results of the construct reliability analysis provide evidence that the measurement model possesses adequate internal consistency and can be considered reliable for assessing verbal aggression among junior high school students.

Tabel 8. Frequentist Scale Reliability Statistics

				95% CI	
No.	Coefficient	Estimate	Std. Error	Lower	Upper
1.	Coefficient ω	0.793	0.020	0.754	0.833

The results of the analysis showed that McDonald's Omega was 0.793 (95% CI = 0.754–0.833) and Cronbach's Alpha was 0.808, indicating that the instrument had good internal consistency. The reliability value for each dimension is also above the minimum recommended limit, so that the entire construct is declared reliable. Although the AVE score has not reached the ideal criteria, the combination of high reliability values indicates that the instrument still has good psychometric quality and is suitable for use as a measure of verbal aggressiveness in junior high school students.

5. Synthesis of CFA Results

Overall, the CFA results show that the two-dimensional model has an adequate level of model conformity, all indicators have significant loading factors, and the reliability of the construct is in the good category. Although the convergent validity shown by the AVE value is not optimal, the results of McDonald's Omega, Cronbach's Alpha, and Composite Reliability show that the instrument has good internal consistency. Thus, the adapted Verbal Aggression Scale (VAS) was declared to have adequate psychometric characteristics and is suitable for use to measure verbal aggression in junior high school students.

Discussion

The results of the study show that verbal aggressiveness such as mocking and swearing has an inversely proportional relationship with peer social support, which means that the higher the social support, the lower the verbal aggressiveness (Fatmawati & Maryam, 2024). In addition, verbal aggressiveness is also influenced by various factors such as family, social environment, media, and economic conditions, which have an impact on psychological well-being (Ananta et al., 2025). This reinforces the results of the study that although verbal aggressiveness has a variety of causative factors, its empirical structure through Exploratory Factor Analysis (EFA) shows a unidimensional tendency, so that it can be understood as a global and integrated construct in junior high school students.

Theoretically, verbal aggressiveness is the tendency of an individual or person to attack the self-concept of others through communication messages. Verbal aggressiveness is also seen as part of an individual's personality traits related to hostility, assertiveness, and argumentation, and can be explained

through interpersonal models and measured using valid and reliable instruments (Infante & Wigley, 2009). In addition, verbal aggressiveness is a relatively stable personality characteristic that is different from other aggressions, and it is very important for individuals to understand to control aggressive behavior. These findings reinforce that verbal aggressiveness is a personality construct in interpersonal communication that distinguishes attacks on ideas and individuals (Hamzah, 2018).

The results of the Exploratory Factor Analysis (EFA) show that all items of the Verbal Aggression Scale (VAS) are grouped into one dominant factor. These findings indicate that verbal aggressiveness in junior high school students is better understood as a complete construct, so that each instrument item represents the same latent dimension. In psychometric studies, the structure of factors formed through EFA aims to identify patterns of empirical relationships between items without establishing a previous measurement model. The factors formed reflect the latent constructs that underlie the relationships between indicators so that they can be used as a basis for evaluating the validity of an instrument's construct (Fabrigar et al., 1999). The results of this study show that all VAS indicators have a strong conceptual relationship in measuring verbal aggressiveness, thus supporting the assumption that the instrument has a consistent factor structure when applied to junior high school students in Indonesia.

Furthermore, Confirmatory Factor Analysis (CFA) was carried out to test the suitability of the measurement model obtained from the results of the exploratory analysis. The results of the analysis showed that the model had an adequate level of conformity based on several goodness-of-fit indices, namely RMSEA of 0.065, CMIN/DF of 1.931, CFI of 0.872, and TLI of 0.852. According to Byrne (2010), the evaluation of the CFA model is not based only on a single conformity index, but considers a combination of several indices so that the model can be declared feasible if most of the indicators show an adequate level of conformity. In addition, Kline (2023) explains that an RMSEA value below 0.08 and a CMIN/DF of less than 3 indicates that the model has a low rate of approximation error as well as a good relationship between the theoretical model and the empirical data. Thus, the results of CFA in this study provide support for the validity of the Verbal Aggression Scale (VAS) construct as an instrument for measuring verbal aggression in junior high school students.

The difference in results between EFA and CFA is a phenomenon commonly found in psychological instrument validation studies. The function of the EFA is to explore the structure of factors based on the correlation pattern between items, while the CFA aims to confirm whether the structure of the factor is compatible with the proposed measurement model (Brown, 2015). Therefore, the EFA's findings showing one dominant factor do not contradict the CFA results which suggest that the measurement model has an adequate level of conformity. According to Brown (2015), the two techniques have complementary functions in the instrument development process, where the EFA generates an empirical structure, while the CFA provides confirmatory evidence of the validity of the construct. The integration of the two approaches results in more comprehensive psychometric evidence than the use of either method separately.

Based on a psychometric review, the results of this study show that although the factor structure is not yet completely exploratory stable, the instrument still has good reliability, as shown by McDonald's values ω and Cronbach's α that meet the criteria (Nugroho et al., 2025). This is in accordance with the principle that reliability is an important prerequisite in the measurement of psychological constructs (Matthew & Gunawan, 2022).

Based on a psychometric review, the results of this study also show that the Verbal Aggression Scale (VAS) has good internal consistency, as shown by McDonald's values ω and Cronbach's α which exceed the minimum limit of 0.70. High reliability indicates that each instrument item has consistency in measuring verbal aggressiveness constructs. According to Cronbach (1951), reliability is an important indicator of instrument quality because it reflects the consistency of measurement results. Meanwhile, McDonald's (1999) explains that the Omega coefficient provides a more accurate estimate of reliability than Cronbach's Alpha when the contribution of each indicator to the latent construct is not entirely the

same. Thus, the results of this study show that VAS not only has a good construct structure, but is also able to produce consistent measurements when used in junior high school students.

In addition, verbal aggressiveness is also related to logical and critical forms of communication as well as interpersonal expression, which suggests that this construct does not stand alone, but intersects with other communication variables (Infante & Rancer, 2010). Another study also showed that verbal aggressiveness in the context of interactions, including online communication, has a significant relationship with interpersonal relationship qualities such as trust, self-evaluation, and emotion regulation, thus strengthening its association with interpersonal communication variables (Yao et al., 2025). This further strengthens the finding that verbal aggressiveness in this study is more reflective of broad or general factors rather than separate specific dimensions.

Although theoretically verbal aggressiveness is positioned as a multidimensional construct related to personality characteristics (Yolanda & Yolanda, 2020), the empirical results of this study show a tendency for unidimensional structures in junior high school students. This indicates that verbal aggressiveness in adolescents is more contextual and integrated, so it is necessary to develop a measurement model that is more adaptive to individual developmental characteristics (Yuliana et al., 2026).

CONCLUSION

This study provides empirical evidence that the Indonesian version of the Verbal Aggression Scale (VAS) demonstrates adequate psychometric properties for assessing verbal aggression among junior high school students. The Exploratory Factor Analysis (EFA) indicated that the instrument is primarily represented by one dominant factor, while the Confirmatory Factor Analysis (CFA) supported an acceptable measurement model based on the goodness-of-fit indices. In addition, the reliability analysis showed satisfactory internal consistency, with Cronbach's Alpha and McDonald's Omega exceeding the recommended threshold. These findings confirm that the VAS is a valid and reliable instrument for measuring verbal aggression in the context of Indonesian junior high school students and contributes to strengthening psychometric evidence for its application in guidance and counseling research and practice.

Despite these contributions, the study was limited to a relatively homogeneous sample of junior high school students, which may restrict the generalizability of the findings to other populations. Future research is recommended to validate the instrument using more diverse samples and to examine additional psychometric properties, including criterion, convergent, and discriminant validity, as well as measurement invariance. Such efforts will provide more comprehensive evidence and further support the use of the Verbal Aggression Scale as a robust assessment instrument in educational and psychological settings.

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