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VALIDITY AND RELIABILITY ASSESSMENT OF THE CHILDREN'S BEHAVIOR QUESTIONNAIRE VERY SHORT FORM AMONG PRESCHOOLERS IN SABAH, MALAYSIA

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Abstract

This study aims to evaluate the reliability and validity of the Very Short Forms of the Children's Behavior Questionnaire (CBQ-VSF) among preschoolers in Sabah, Malaysia. The CBQ-VSF is specifically designed to assess children's temperament and has undergone adaptations for use in various regions. However, its application within the preschool population of Sabah remains unexplored. In this study, the sample comprised 255 mothers of children aged 4 to 6 years. Data were collected through an online questionnaire targeting children's behaviors. Findings suggest that the CBQ-VSF exhibits reliability and validity among respondents in Sabah, thereby establishing its suitability for evaluating temperamental traits in preschoolers. This research contributes to advancing our understanding of temperament assessment during early childhood and emphasizes the significance of culturally validating assessment tools for diverse populations.

Keywords: Very Short Form of Children's Behavior Questionnaire, CBQ-VSF, Preschooler, Sabah, Validity.

INTRODUCTION

Temperament, as defined by Rothbart, Evans, and Ahadi (2000), encompasses individual differences in reactivity and self-regulation that are rooted in one's constitution. It is widely acknowledged that temperament traits serve as the foundation for future personality characteristics (Tackett et al., 2009).

Among the various proposed models, the vulnerability/predisposition model offers insight into the relationship between temperament traits and future personality development, suggesting that extreme temperament early in life may predispose a child to a higher risk of developing specific forms of psychopathology (Tackett, 2006).

Extreme temperament has been identified as a risk factor for various outcomes, including cognitive functioning (Blair, 2002; Healey et al., 2010; Wolfe & Bell, 2007), psychopathology (Cipriano & Stifter, 2010; Muris & Ollendick, 2005), and overall functioning (Healey et al., 2010). Some researchers propose that extreme temperamental characteristics measured early in life may indicate the early presence of certain disorders themselves (Egger & Angold, 2006).

This evidence of a link between children's temperament and later developmental issues has prompted the search for more efficient instruments with a developmental perspective that can be utilized at an early age to better understand the relationship between temperament and psychopathology, and ideally, to predict and develop effective intervention strategies.

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The Children's Behavior Questionnaire (CBQ; Rothbart et al., 2001) is commonly utilized for assessing temperament in children aged 3 to 7 (Putnam & Stifter, 2008). The very short form of Children's Behavior Questionnaire also be provided by the developer. The CBQ-VSF instrument comprises 36 items designed to assess three overarching temperament domains: Surgency, Negative Affectivity, and Effortful Control.

Surgency relates to impulsive and active behavior, Negative Affect pertains to the inclination towards experiencing negative emotions and difficulty in being comforted, while Effortful Control involves voluntary regulation of attention and behavior. Each domain includes 12 items, with responses rated on a Likert scale ranging from 1 to 7.

Some items are reverse-scored to ensure consistency in interpretation across all items within a domain. There is no total temperament score; instead, individual domain scores are computed by averaging the responses to the relevant items. Higher scores indicate a stronger manifestation of the respective temperament domain in the child.

In recent years, several studies have utilized the CBQ-VSF to assess behavioral adjustment among preschoolers. Previous studies utilizing the CBQ-VSF have primarily focused on exploring various aspects of preschoolers' behavior, with applications in different countries such as Spain, the Netherlands, Greece, and the USA.

For instance, Osa, Granero, Penelo, Domènech, and Ezpeleta (2014) conducted a study in Spain with a community sample of preschoolers aged 3 years, while Sleddens, Kremers, Candel, De Vries, and Thijs (2011) investigated Dutch children aged 6 to 8. Additionally, studies in Greece (Sofologi, Koulouri, Moraitou, & Papantoniou, 2021; Rohini, 2016) and the USA (Acar, Torquati, Encinger, 2017) have also examined child temperament by CBQ-VSF in preschool settings.

Specifically, a study focused on Malaysian preschoolers also employed the CBQ-VSF (Fujii, Hayashi, & Teng, 2022). However, to date, there has been no research conducted in Sabah, Malaysia utilizing the CBQ-VSF. This study aims to fill this gap by examining the temperament among preschool children in Sabah context.

METHOD

Participants

This study conducted in a Chinese kindergarten named Tadika Chung Hwa Penampang, in Sabah. All parents of preschool-aged children were invited to participate by completing an online questionnaire.

After excluding invalid responses, such as those where "race" was mistakenly filled with names, the final number of valid questionnaires was 255. Parents were given one week to complete the questionnaire. As an incentive for their participation, parents were offered a set of watercolor pens as a token of appreciation.

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Data Collecting Procedures

Before collecting data, meeting with target preschool principal was held to discuss the procedure to administer the questionnaire. In the research, participants had the right to know the purpose and the aim of the study and how the results were used. Participants also have the right to refuse or withdraw from the study. Interference or disruption to schools also has to be minimized. A data collection form was created online using Google Forms and required participants to answer all questions before moving on to the next question or form, preventing missing data.

RESULTS

This study utilized item analysis, reliability assessment, and construct validity testing to analyze the instrument. Item analysis aims to examine whether the questionnaire items demonstrate good discrimination and homogeneity. Discrimination assesses whether the questionnaire items differentiate between individuals of varying abilities. Typically, the critical ratio (CR) method is employed to investigate differences in item scores between high and low scorers. The total scores are computed and ranked by percentile (27%), with independent sample t-tests analyzing significant statistical differences between high and low scorers for each item. A CR value ≥ 3 ($P<0.05$) indicates good discrimination, whereas lower values suggest poor discrimination, warranting consideration for item deletion. Homogeneity testing involves Pearson correlation and communality testing. Pearson correlation and corrected item-total correlation (CITC) values ≥ 0.4 indicate high item homogeneity, while values below suggest low homogeneity, prompting item removal. Communalities, factor loadings, and Cronbach's alpha values after item deletion are also examined, with values meeting or exceeding specific criteria indicating good homogeneity. If the Cronbach's α value after item deletion is less than or equal to the scale's α value, communalities are greater than or equal to 0.2, and factor loadings are greater than or equal to 0.45, and all three indicators meet or exceed the standard range, then it indicates that the items exhibit good homogeneity (Wu, 2010).

Item analysis of CBQ-VSF

The results of the item analysis for the 36 items of the CBQ-VSF are presented in Table 1. In terms of discrimination, all items exhibit a critical ratio (CR) > 3 ($P<0.05$), indicating good discrimination for each item. Regarding correlation, both the Pearson correlation coefficient (r) and the corrected item-total correlation (CITC) for each item are above 0.4, indicating good item correlation.

In terms of homogeneity testing, all items have communalities above 0.2 and factor loadings exceeding 0.45. After deleting items, the Cronbach's alpha coefficient remains below the reliability coefficient value of 0.96 for the scale, indicating good homogeneity for the items. In summary, the items of the CBQ-VSF demonstrate satisfactory discrimination and homogeneity, and thus, no items require deletion.

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Table 1: CBQ-VSF of Item Analysis

Item	Critical ration	Correlation		Homogeneity test			The number of failed indicators	Remarks
	(CR)	r	CITC	Cronbach's α if Item Deleted	Communalities	Factor loading		
S1	12.986 ***	0.627**	0.601	0.959	0.674	0.795	0	reserve
S2	13.257***	0.657**	0.631	0.958	0.624	0.719	0	reserve
S3	12.353***	0.640**	0.614	0.958	0.601	0.726	0	reserve
S4	12.291***	0.617**	0.588	0.959	0.587	0.730	0	reserve
S5	12.887***	0.667**	0.643	0.958	0.633	0.739	0	reserve
S6	11.417***	0.616**	0.587	0.959	0.585	0.726	0	reserve
S7	13.237***	0.682**	0.659	0.958	0.597	0.682	0	reserve
S8	13.717***	0.643**	0.615	0.958	0.594	0.721	0	reserve
S9	12.545***	0.621**	0.593	0.959	0.568	0.705	0	reserve
S10	13.844***	0.654**	0.628	0.958	0.623	0.736	0	reserve
S11	15.725***	0.667**	0.639	0.958	0.611	0.721	0	reserve
S12	12.823***	0.638**	0.611	0.958	0.613	0.740	0	reserve
N1	14.768***	0.700**	0.681	0.958	0.694	0.768	0	reserve
N2	17.882***	0.716**	0.694	0.958	0.620	0.677	0	reserve
N3	12.973***	0.615**	0.586	0.959	0.578	0.718	0	reserve
N4	15.460***	0.616**	0.589	0.959	0.590	0.730	0	reserve
N5	13.043***	0.630**	0.602	0.959	0.585	0.716	0	reserve
N6	11.977***	0.583**	0.554	0.959	0.565	0.719	0	reserve
N7	15.844***	0.655**	0.630	0.958	0.676	0.783	0	reserve
N8	13.468***	0.617**	0.590	0.959	0.638	0.766	0	reserve
N9	14.046***	0.625**	0.598	0.959	0.612	0.745	0	reserve
N10	14.456***	0.682**	0.660	0.958	0.598	0.687	0	reserve
N11	15.570***	0.718**	0.695	0.958	0.608	0.657	0	reserve
N12	13.892***	0.628**	0.600	0.959	0.646	0.771	0	reserve
EC1	12.180***	0.634**	0.611	0.959	0.629	0.752	0	reserve
EC2	17.098***	0.681**	0.656	0.958	0.650	0.743	0	reserve
EC3	14.043***	0.688**	0.665	0.958	0.596	0.680	0	reserve
EC4	14.215***	0.673**	0.649	0.958	0.577	0.674	0	reserve
EC5	13.219***	0.629**	0.600	0.959	0.571	0.704	0	reserve
EC6	12.517***	0.606**	0.578	0.959	0.563	0.708	0	reserve
EC7	12.414***	0.604**	0.575	0.959	0.552	0.700	0	reserve
EC8	13.015***	0.601**	0.574	0.959	0.563	0.710	0	reserve
EC9	12.835***	0.638**	0.612	0.958	0.538	0.664	0	reserve
EC10	14.784***	0.593**	0.563	0.959	0.634	0.776	0	reserve
EC11	17.610***	0.706**	0.682	0.958	0.663	0.736	0	reserve
EC12	12.928***	0.627**	0.599	0.959	0.563	0.694	0	reserve
Judgment criterion	CR≥3	≥0.4		≤0.960	≥0.2	≥0.45	-	-

Note: 0.96 is the internal consistency Cronbach's α coefficient for the Children's Behavior Questionnaire scale; *** p<0.001, ** p<0.01, * p<0.05.

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After conducting item analysis on the questionnaire scale, it is necessary to further examine the reliability of the questionnaire results. This involves conducting reliability analysis, where this study utilizes the internal consistency coefficient method (Cronbach's α) for reliability analysis, determining the reliability through the Cronbach's α coefficient. DeVellis (1991) suggests that Cronbach's α coefficient between 0.65-0.7 is minimally acceptable, between 0.7-0.8 indicates fair reliability, between 0.8-0.9 indicates good reliability, and above 0.9 indicates excellent reliability. In addition to using the Cronbach's α coefficient, it is also important to consider the "Corrected Item-Total Correlation" (CITC) and "Cronbach's α if Item Deleted" indicators to assess the consistency of the items. When CITC is ≥0.4, it indicates good correlation among the items and they can be retained; if this value is less than 0.4, deletion should be considered. "Cronbach's α if Item Deleted" refers to the Cronbach's α coefficient value of the scale after deleting the respective item. If Cronbach's α if Item Deleted is lower than the Cronbach's α coefficient of the scale, it suggests that the item has high homogeneity with other items and should be retained; otherwise, it can be deleted.

Reliability Analysis of the CBQ-VSF

The reliability results of the CBQ-VSF are presented in Table 2. The overall Cronbach's α coefficient for the entire questionnaire is 0.96, indicating high overall reliability. In terms of subscales, the Surgency dimension consists of 12 items, with a Cronbach's α coefficient of 0.940. The Corrected Item-Total Correlation (CITC) values for the items range between 0.702 and 0.768, all exceeding 0.4. After deleting items, the Cronbach's α coefficient remains below 0.94, indicating good reliability of the Surgency dimension. The Negative Affectivity dimension comprises 12 items, with a Cronbach's α coefficient of 0.941. The CITC values for the items range between 0.693 and 0.794, all exceeding 0.4. After deleting items, the Cronbach's α coefficient remains below 0.941, indicating good reliability of the Negative Affectivity dimension. The Effortful Control dimension consists of 12 items, with a Cronbach's α coefficient of 0.936. The CITC values for the items range between 0.682 and 0.767, all exceeding 0.4. After deleting items, the Cronbach's α coefficient remains below 0.936, indicating good reliability of the Effortful Control dimension. In summary, the overall reliability of the CBQ-VSF and its subscales are within the excellent range.

Table 2: CBQ-VSF of Reliability Analysis

variable	Item	Corrected Item-Total Correlation(CITC)	Cronbach's α if Item Deleted	Cronbach's α of variable	Number of Item	Cronbach's α of Entirety
Surgency	S1	0.768	0.934	0.940	12	0.960
	S2	0.727	0.935			
	S3	0.725	0.935			
	S4	0.714	0.935			
	S5	0.749	0.934			
	S6	0.713	0.936			
	S7	0.718	0.935			
	S8	0.719	0.935			
	S9	0.702	0.936			
	S10	0.741	0.934			

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	S11	0.735	0.935			
	S12	0.734	0.935			
Negative Affectivity	N1	0.794	0.935	0.941	12	
	N2	0.737	0.936			
	N3	0.709	0.937			
	N4	0.714	0.937			
	N5	0.711	0.937			
	N6	0.693	0.938			
	N7	0.778	0.935			
	N8	0.741	0.936			
	N9	0.732	0.936			
	N10	0.728	0.936			
	N11	0.720	0.937			
	N12	0.752	0.936			
Effortful Control	EC1	0.739	0.930	0.936	12	
	EC2	0.759	0.928			
	EC3	0.723	0.930			
	EC4	0.711	0.930			
	EC5	0.702	0.931			
	EC6	0.693	0.931			
	EC7	0.687	0.931			
	EC8	0.691	0.931			
	EC9	0.682	0.931			
	EC10	0.732	0.929			
	EC11	0.767	0.928			
	EC12	0.692	0.931			

Validity Analysis

Validity analysis refers to the examination of the structural rationality of questionnaire data, assessing whether the measurement scale structure accurately reflects the effectiveness of questionnaire items. To test the structural validity of the questionnaire, this study employed exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to analyze dimensionality, convergent validity, and discriminant validity of the data. Exploratory Factor Analysis (EFA) is a method used to synthesize variables with complex interrelationships into a few core factors. When assessing the validity of a questionnaire, it is necessary to first conduct a factor analysis fit test. This typically involves judging based on the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. A higher KMO value indicates greater suitability for factor analysis, with KMO values ≥ 0.6 generally considered acceptable. The closer this value is to 1, the better suited the data is for factor analysis. Additionally, Bartlett's test of sphericity yields a significance value (sig) ≤ 0.05, indicating independence among variables. Following the fit test, common factors are extracted using the principal component method (initial eigenvalues > 1), with cumulative contribution rates $> 50\%$, and variable communalities ≥ 0.2. These criteria signify better explanation of the original variable information by the extracted common factors (Wu, 2010). After extracting common factors, maximum variance rotation is typically applied to the common factors to achieve a rotated component matrix. This facilitates clearer judgment of the rationality of dimensionality: (1)

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when factor loading coefficients of items ≥ 0.45 and items with similar characteristics are grouped under the same principal component, the factor can be named and explained; (2) a common factor should contain at least three or more item variables to explain the meaning of the common factor; (3) each item should not have multiple loadings on different factors. Meeting these conditions suggests reasonable dimensionality and indicates good questionnaire validity.

Exploratory Factor Analysis of the CBQ-VSF

In the factor fit test of the CBQ-VSF, the Kaiser-Meyer-Olkin (KMO) measure was found to be 0.963, and Bartlett's test of sphericity yielded an approximate chi-square value of 6047.599 with 630 degrees of freedom and a significance level (sig) of less than 0.001. These results indicate that the data from the questionnaire are highly suitable for factor analysis.

Table 3: CBQ-VSF of Factor fit test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.963
Bartlett's Test of Sphericity	Approx. Chi-Square	6047.599
	df	630
	Sig.	<0.001

Upon conducting the factor fit test, three principal components were extracted with initial eigenvalues exceeding 1. The cumulative variance contribution of these three principal components amounted to 60.613%, indicating a satisfactory level of explanatory power. Furthermore, the communalities of all items were above 0.2, suggesting that the three principal components extracted provided a high level of interpretation for the original questionnaire. Based on the rotated factor loading coefficients, it was observed that Principal Component 1 had an eigenvalue of 14.992, encompassing items N1-N12 with factor loadings > 0.45 and no multiple loadings, consistent with the predefined items of the negative affectivity dimension. Principal Component 2 had an eigenvalue of 3.571, including items S1-S12 with factor loadings > 0.45 and no multiple loadings, aligning with the predefined items of the surgency dimension. Principal Component 3 had an eigenvalue of 3.258, comprising items EC1-EC12 with factor loadings > 0.45 and no multiple loadings, consistent with the predefined items of the effortful control dimension. In summary, the results of the exploratory factor analysis of the CBQ-VSF align with the predefined dimensional structure of the questionnaire.

Table 4: CBQ-VSF of Exploratory Factor Analysis

Item	Component			Extraction
	1	2	3	
S1		0.795		0.674
S2		0.719		0.624
S3		0.726		0.601
S4		0.730		0.587
S5		0.739		0.633
S6		0.726		0.585
S7		0.682		0.597
S8		0.721		0.594
S9		0.705		0.568
S10		0.736		0.623

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S11		0.721		0.611
S12		0.740		0.613
N1	0.768			0.694
N2	0.677			0.620
N3	0.718			0.578
N4	0.730			0.590
N5	0.716			0.585
N6	0.719			0.565
N7	0.783			0.676
N8	0.766			0.638
N9	0.745			0.612
N10	0.687			0.598
N11	0.657			0.608
N12	0.771			0.646
EC1			0.752	0.629
EC2			0.743	0.650
EC3			0.680	0.596
EC4			0.674	0.577
EC5			0.704	0.571
EC6			0.708	0.563
EC7			0.700	0.552
EC8			0.710	0.563
EC9			0.664	0.538
EC10			0.776	0.634
EC11			0.736	0.663
EC12			0.694	0.563
Initial eigenvalue	14.992	3.571	3.258	-
% of Variance	20.416	20.416	19.781	
Cumulative %		60.613		-
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
Rotation converged in 6 iterations.				

Confirmatory Factor Analysis (CFA)

Following the dimensional delineation through Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) was further employed to assess the convergent validity, construct reliability, and discriminant validity of the questionnaire. Prior to constructing the confirmatory factor model, model fit assessment was conducted, with the model fit indices presented in Table 5. After confirming the model fit, the convergent validity and discriminant validity between items and dimensional variables were examined. Convergent validity was primarily assessed through factor loading coefficients and the Average Variance Extracted (AVE) values of the variables. A higher AVE indicates lower relative measurement error, and variables are considered to have good convergent validity when AVE$>$0.5 and factor loading coefficients $>$0.5 (Li et al., 2018). Construct reliability (CR) evaluates the structural reliability of the data, with a CR value greater than 0.7 indicating good construct reliability. Discriminant validity was evaluated by comparing the square root of AVE with the correlations between variables. If the square root of AVE is greater than the correlations between variables, it indicates good discriminant validity between variables.

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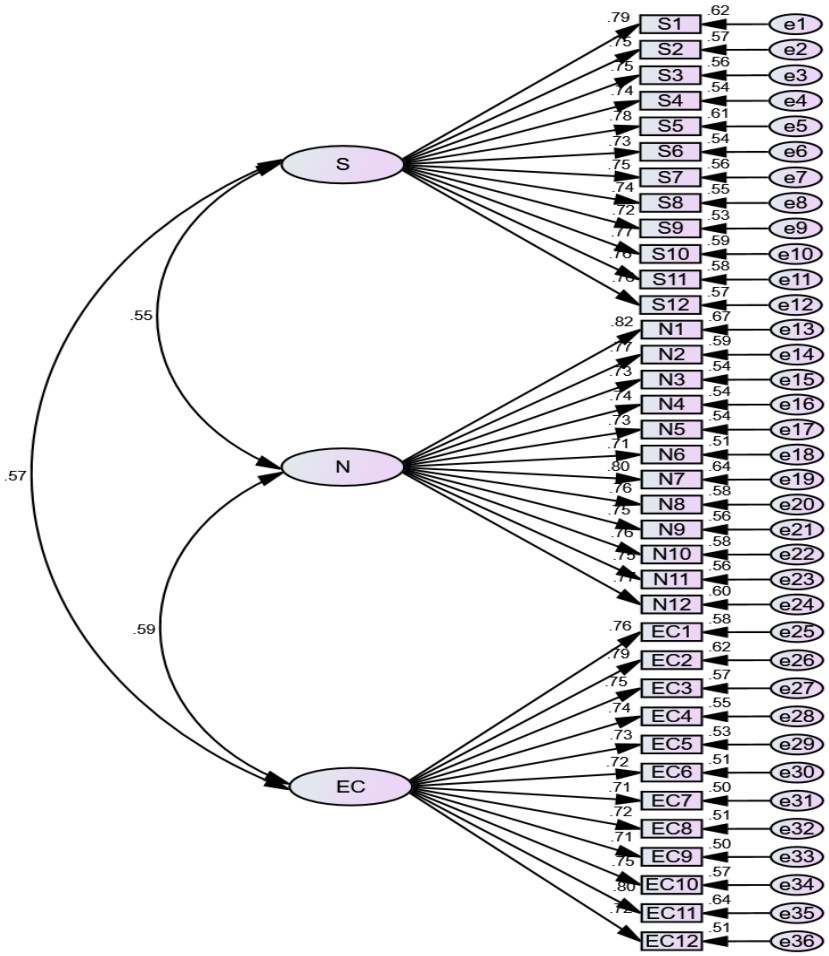
Table 5: Main evaluation indexes and evaluation criteria of structural validity

Statistical test quantity		Evaluating indicator	Adaptation standard	Indicator source
Goodness – of – fit indices	Absolute fit indices	RMSEA	<0.05	Purnomo, Y. W. (2017) ;
		SRMR	<0.05	
	Parsimonious fit indices	CMIN/DF(NC)	1<NC<3	
	Incremental fit indices	IFI	>0.9	
		TLI		
		CFI		
Convergent Validity		AVE	>0.5	
		Factor scores		
Construct Reliability		CR	>0.7	
Discriminant Validity		$\sqrt{AVE}$	>r	



Picture 1: Children's Behavior Questionnaire of Confirmatory Factor Analysis

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The fit indices for the confirmatory factor analysis model of the CBQ-VSF are presented in Table 6. In terms of absolute fit indices, the Root Mean Square Error of Approximation (RMSEA) is 0.022, and the Standardized Root Mean Square Residual (SRMR) is 0.044, both of which are less than 0.05, indicating good fit. For parsimony fit indices, the Comparative Fit Index to Degrees of Freedom Ratio (CMIN/DF) is 1.122, falling within the acceptable range of 1-3. Additionally, the Incremental Fit Indices (IFI), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI) all exceed 0.9, indicating excellent fit. Overall, the fit indices suggest that the confirmatory factor model for the CBQ-VSF has passed the goodness-of-fit test.

Table 6: CBQ-VSF of Model fitting results

Evaluating indicator	Measured value	Adaptation standard	Compliance with standards
RMSEA	0.022	<0.05	Coincidence result
SRMR	0.044	<0.05	Coincidence result
CMIN/DF(NC)	1.122	1<NC<3	Coincidence result
IFI	0.988	>0.9	Coincidence result
TLI	0.987		Coincidence result
CFI	0.987		Coincidence result
CMIN=662.974; DF=591; P=0.021.			

The convergent validity and construct reliability results for the CBQ-VSF are presented in Table 7. The Average Variance Extracted (AVE) and Composite Reliability (CR) values for the three variables are as follows: surgency dimension (AVE=0.568, CR=0.940), for the negative affectivity dimension (AVE=0.576, CR=0.942), and effortful control dimension (AVE=0.55, CR=0.936). All AVE values for the three variables as well as the standardized factor loadings for items are greater than 0.5, and all CR values exceed 0.7. These results indicate that the items of the CBQ-VSF can effectively explain the information of the three dimensional variables, demonstrating good convergent validity and construct reliability for each variable.

Table 7: CBQ-VSF of Convergent Validity and Construct Reliability

variable	Item	Factor scores(Standardized)	AVE	CR
Surgency	S1	0.790	0.568	0.940
	S2	0.753		
	S3	0.750		
	S4	0.736		
	S5	0.778		
	S6	0.735		
	S7	0.745		
	S8	0.744		
	S9	0.725		
	S10	0.766		
	S11	0.764		
	S12	0.758		
Negative Affectivity	N1	0.820	0.576	0.942
	N2	0.768		
	N3	0.732		
	N4	0.736		

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	N5	0.735		
	N6	0.713		
	N7	0.801		
	N8	0.763		
	N9	0.751		
	N10	0.759		
	N11	0.751		
	N12	0.774		
Effortful Control	EC1	0.763	0.550	0.936
	EC2	0.789		
	EC3	0.752		
	EC4	0.741		
	EC5	0.727		
	EC6	0.716		
	EC7	0.709		
	EC8	0.717		
	EC9	0.708		
	EC10	0.753		
	EC11	0.800		
	EC12	0.715		

The discriminant validity results for the CBQ-VSF are presented in Table 8. The square root of the Average Variance Extracted (AVE) for the surgency dimension is 0.754, for the negative affectivity dimension is 0.759, and for the effort control dimension is 0.742. The correlation coefficients between the three variables are 0.553, 0.574, and 0.59, respectively. All AVE values for each variable are greater than the correlation coefficients between them, indicating good discriminant validity among the three dimensional variables. Therefore, the discriminant validity of CBQ-VSF has been confirmed.

Table 8: CBQ-VSF of Discriminant Validity

variable	Surgency	Negative Affectivity	Effortful Contro
Surgency	**0.754**		
Negative Affectivity	0.553***	**0.759**	
Effortful Contro	0.574***	0.59***	**0.742**

The value of the diagonal： $\sqrt{AVE}$ ； ***P<0.001.

DISCUSSION

The results of the present study showed that the CBQ-VSF is a reliable and valid instrument among preschooler in Sabah. The psychometric performance of the instrument is remarkably impressive both in terms of reliability and validity. The high internal consistency of the total and subscales of the instrument indicated a high level of homogeneity among items in the scale. The parallel reliability was also high. This is consistent with the previous studies (Putnam & Rothbart, 2006; Sleddens et al., 2011),

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Furthermore, the factor structure of the CBQ-VSF has been examined using exploratory and confirmatory factor analysis, with findings indicating the questionnaire perform good among preschooler respondents in Sabah context. While previous research has provided valuable insights into the validity and reliability of the CBQ-VSF, further studies are needed to explore its applicability and generalizability in diverse cultural and regional contexts.

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