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Validity Analysis Of Emotional Stability Instrument Using The Rasch Model In Adolescents

Kamila Suci[1], Nandang Budiman[2], Dodi Suryana[3]
[1,2,3]Universitas Pendidikan Indonesia,/Jl. Dr. Setiabudhi No. 229 Bandung 40154. Jawa Barat
e-mail: *[1]kamilasuci31@upi.edu, [2]nandang.budiman@upi.edu, [3]dodi.suryana@upi.edu

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Abstract. *Measuring emotional stability is needed so that adolescents know the level of them emotional stability. This research was conducted to develop a valid instrument so that it can test the level of emotional stability of adolescents. Validation analysis was carried out to test whether the emotional stability instrument was able to accurately reveal the level of emotional stability of adolescents. It is a quantitative study through a random sampling survey for 152 respondents consisting of 43 boys and 109 girls in class XI at a school in Sumedang, West Java. Instrument analysis using the Rasch model by WINSTEP version 3.73.0 from John M. Linacre. Based on the results of the analysis using the RASCH model, it can be concluded that the emotional stability instrument is good enough to measure emotional stability in adolescents with a Cronbach alpha value, which represents the interaction between persons and the overall item items of 0.62 including the good category, the person reliability value of 0.57 as an indicator of the respondents' answer consistency is included in the sufficient category. Meanwhile, the item reliability of 0.98 as an indicator of the quality of the item on the instrument is classified as a special category.*
Keywords: *Rasch, Emotional Stability; Validation Analysis*

Abstrak. Alat ukur stabilitas emosi diperlukan supaya remaja mengetahui tingkat stabilitas emosi yang dimilikinya. Penelitian ini dilakukan untuk mengembangkan instrumen yang valid sehingga dapat menguji tingkat stabilitas emosi remaja. Analisis validitas ini dilakukan untuk menguji apakah instrumen stabilitas emosi mampu mengungkap tingkat stabilitas emosi remaja secara akurat. Penelitian ini menggunakan pendekatan kuantitatif melalui survei secara random sampling terhadap 152 responden terdiri dari 43 orang laki-laki dan 109 orang perempuan kelas XI pada salah satu sekolah di Sumedang, Jawa Barat. Analisis instrumen dilakukan menggunakan model *RASCH* dengan aplikasi *winstep* versi 3.73.0 dari John M. Linacre. Berdasarkan hasil analisis menunjukan bahwa instrumen stabilitas emosi cukup baik untuk mengukur kestabilan emosi pada remaja dengan nilai *cronbach alpha* yang mempresentasikan interaksi antara person dengan butir-butir item keseluruhan sebesar 0.62 termasuk kategori baik, nilai person realiability sebesar 0.57 sebagai indikator konsistensi jawaban

responden, termasuk kategori cukup. Sedangkan item reability sebesar 0,98 sebagai indikator kualitas butir-butir item dalam instrumen, tergolong kategori istimewa.

Kata kunci: *Rasch*; Stabilitas Emosi; Analisis validasi

A. INTRODUCTION

Adolescents are very sensitive to the feelings and behaviors that influence them (Wulandari, 2014). Especially in terms of friendship, which is an important part of adolescent development. Compared to the health of other age groups, health problems in the adolescent group are more complex, namely problems related to puberty. Most adolescent health problems stem from dangerous behavior (Wulandari, 2014). In behaving and acting, adolescents are influenced by emotions. These emotions can determine attitudes and thoughts in adolescents (Shahab et al., 2022). Emotions are also able to influence interactions with their friendship environment. So that teenagers who have emotional stability will be better able to manage behavior in interactions with their environment. Emotional stability is, of course, supported by physical health related to emotional health and emotional adjustment (Rosdiana, 2012).

B. THEORETICAL FOUNDATION

In accordance with the concept of emotional stability by Schneiders (1960), the ability of adolescents to control emotions by displaying appropriate responses to emotions that have been received. This allows individuals to adapt and socialize with others (Schneider, 1960). Emotional stability is a person's emotional state that does not change quickly, causing emotional disturbance to the individual (Shahab et al., 2022). Adolescents who have good emotional stability will be able to express and deal with their problems appropriately and carefully so that they do not interfere with their activities in daily life. So it can be concluded that emotional stability shows emotions that are fixed, do not change, or are not quickly disturbed even when facing problems (Schneider, 1964) Thus, someone who is emotionally stable can direct him or herself to focus

on their activities and can use a more positive mind to not easily conform to things that are negative for him.

The emotional characteristics of a stable adolescent are being realistic and being able to take attitudes and decisions appropriately, accepting oneself and others as they are, having spontaneity, being able to behave naturally and easily adapting to surrounding circumstances, believing in one's own decisions and does not depend on other people, able to judge things objectively, prioritizes the public interest, is able to empathize with others and is able to get along, is aware of differences in opinion, has a sense of humor, not too serious, jokes easily but still maintains the values of decency in joking, able to innovate and improvise (Sholikhah, 2013). The following describes aspects of emotional stability according to Schneiders (1964), namely:

1. Emotional adequacy, namely the emotional reaction according to the stimulus it receives, where this reaction is related to the type or content of the emotion and the direction of the emotion or to whom the emotion is directed.
2. Emotional maturity, characterized by the ability to provide appropriate emotional reactions to unpleasant situations and certain conditions.
3. Emotional control, the basis of emotional maturity is emotional control. It is also very important in self-adjustment and mental health.

To be able to measure the level of emotional stability, it is necessary to measure the validity of the instrument so that the instrument can properly express emotional stability. The RASCH model becomes a way to analyze your instrument (Yusuf et al., 2021). Analysis of the validity of the instrument using the RASCH model, This is a way of looking at an instrument in a way that can be called valid. The RASCH model provides a detailed description of the scale structure of the instrument (Nuryanti et al., 2018). Information conveyed after analysis by the RASCH model relates to one-dimensional item

analysis, participant competence analysis, and instrumental analysis (Planinic et al., 2019). This information provides an overview of the scale's structure so that it can be classified as a valid or invalid measure of emotional stability. (Yusuf et al., 2021).

This model has (1) the ability to provide a linear scale on the same interval, (2) the ability to predict missing data (Aziz, 2015; Azizah & Wahyuningsih, 2020), (3) the ability to provide a more accurate estimate/estimate (Ardiyanti, 2016) (4) the inaccuracy of the model, and (5) provide reproducible measurements (Taufiq et al., 2021). The RASCH model can overcome metric differences between these items by calibrating them to place items and subjects in the same matrix, so that the resulting score is not a raw score but a pure score (Taufiq et al., 2021; Indihadi et al., 2022) (Sumintono & Widhiarso, 2014). The resulting logit scale will bring up a value that depends on the response pattern given, not on the initial score determined, so that the rasch model will always produce independent measurements (Sumintono & Widhiarso, 2015). Estimation and calibration techniques free the data from the effects of subject type, rater characteristics, and instrument characteristics, allowing the Rasch model to meet objective measurements (Boone et al., 2014; Engelhard & Wind, 2018; Mohamad et al., 2015; Yasin et al., 2015).

C. RESEARCH METHODOLOGY

The research was conducted using a quantitative approach through survey methods on a 4-point Likert scale (Strongly agree, Agree, Disagree and Strongly disagree). The subjects in this study were class XI students from a senior high school in Sumedang, West Java. The population and research sample involved 152 respondents consisting of 43 males and 109 females aged 16-17 years. This study used random sampling so that all participants had the right to choose.

Table 1. *Sampel Penelitian*

Kelas	**Jenis Kelamin**		**Jumlah**
	P	L	
IPA	72	25	IPA
IPS	37	18	IPS

TOTAL	152

The instrument was developed from Schneider's theory of emotional stability (1960) which has 3 aspects, Emotional adequation, emotional maturity and emotional control. Each aspect is developed in 4-3 indicators which are then redeveloped in 34 items. This research is aimed at adolescents to find out the emotional

stability using Rasch model is used for instrument analysis because the Rasch model provides information about the scale structure of an instrument so that it can reveal the validity of the instrument used (Muslihin et al., 2022). Analyze the RASCH model using WINSTEP version 3.73.0 by John M. Linacre.

D. RESEARCH RESULTS

Instrumental analysis of students' emotional stability through the race model is based on undimensionality aspects, items analysis (difficulty and suitability level of the items), rating scale, and detailed instrument analysis is described as follows: undiment.

Undimensionality

Undimensionality analysis identifies multiple attributes or dimensions measured by an instrument. Undimensionality analysis determines the degree of diversity measured by an instrument, so you can be sure that the instrument can measure what you are trying to measure. (Nur et al., 2022). This analysis uses the output in Table 23 of the Winstep application version 3.73 and considers the row variance explained by the measure and the unexplained variance in the first through fifth contrasts. If the linear variance explained by the measurement is 20% or more, then you can demonstrate the dimensionlessness of the measurement. A general rule of thumb for interpretation is that 20-40% is good enought, 40-60% is good and is very good if greater than 60% and if the unexplained variance contrasts of each <15%).

Table 2. Standardized Residual variance (in Eigenvalue units)

No	Description				Modelen
1	Total raw variance in observations	52.6	100.0%		100.0%
2	Raw variance explained by measures	18.6	35.4%		35.6%
3	Raw variance explained by persons	2.3	4.3%		4.3%
4	Raw Variance explained by items	16.4	31.1%		31.3%

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5	Raw unexplained variance (total)	34.0	64.6%	100.0%	64.4%
6	Unexplned variance in 1st contrast	3.3	6.3%	9.7%	
7	Unexplned variance in 2nd contrast	2.3	4.5%	6.9%	
8	Unexplned variance in 3rd contrast	2.1	4.1%	6.3%	
9	Unexplned variance in 4th contrast	2.0	3.8%	5.9%	
10	Unexplned variance in 5th contrast	1.9	3.5%	5.5%	

Based on table 2, which was reviewed from table 23 in the winstep application, the results of 35.4% were included in the sufficient category, while the unexplained variance in 1st to 5th contrast of residual respectively was unexplained variance in 1st contrast of 6.3%, unexplained variance in 2st contrast of 4.5%, unexplained variance in 3rd contrast of 4.1%, unexplained variance in 4th contrast of 3.8% and unexplained variance in 5th contrast of 3.5%. So it can be said that the instrument construct used as a whole measures one variable, namely emotional stability.

Item Analysis

a. Item Difficulty Level

Table 3. *Measure order*

Entry	Total Score	Total Count	Measure	Model S.E.	Infit		Outfit		Pt-Measure		Exact Match		Item
					MNSQ	ZSTD	MNSQ	ZSTD	CORR.	EXP.	OBS%	EXP%	
34	550	152	2.03	.0.12	1.17	1.05	1.45	3.04	-0.19	0.26	40.08	45.06	34
21	551	152	2.02	0.12	1.14	1.02	1.22	1.08	0.05	0.26	41.04	44.04	21
29	644	152	1.00	0.10	0.79	-2.3	0.79	-2.4	0.41	0.29	53.09	42.00	29
2	645	152	0.99	0.10	0.70	-3.4	0.73	-3.1	0.34	0.29	44.07	41.09	2
15	657	152	0.88	0.10	0.93	-0.7	0.94	-0.6	0.19	0.30	51.03	41.06	15
28	657	152	0.88	0.10	0.98	-0.2	0.98	-0.2	0.41	0.30	39.05	41.06	28
10	659	152	0.86	0.10	0.88	-1.3	0.94	-0.6	0.02	0.30	47.04	41.05	10
33	659	152	0.86	0.10	1.03	0.3	1.05	0.6	0.25	0.30	43.04	41.05	33
11	685	152	0.61	0.10	0.81	-2.0	0.82	-1.9	0.31	0.30	46.07	42.02	11
26	702	152	0.45	0.10	0.80	-2.1	0.81	-2.0	0.28	0.29	56.06	43.03	26
17	704	152	0.43	0.10	1.21	2.00	1.24	2.03	0.21	0.29	38.02	43.06	17
30	720	152	0.28	0.10	1.36	3.03	1.46	4.00	-0.14	0.29	33.06	44.09	30
23	726	152	0.22	0.10	0.95	-0.4	0.95	-0.4	0.48	0.29	48.07	45.03	23
13	727	152	0.21	0.10	0.95	-0.4	0.94	-0.6	0.32	0.29	45.04	45.04	13
6	729	152	0.19	0.10	1.25	2.03	1.27	2.05	0.19	0.29	40.08	45.06	6
24	731	152	0.17	0.10	1.29	2.06	1.29	2.07	0.30	0.29	40.01	45.07	24
14	740	152	0.07	0.10	1.05	0.5	1.04	0.5	0.27	0.29	49.03	46.03	14

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22	746	152	0.01	0.10	0.66	-3.7	0.66	-3.7	0.30	0.28	61.08	46.07	22
18	767	152	-0.21	0.11	1.03	0.3	1.02	0.2	0.24	0.28	48.00	47.02	18
19	767	152	-0.21	0.11	0.79	-2.1	0.80	-2.0	0.25	0.28	61.08	47.02	19
20	773	152	-0.28	0.11	1.18	1.06	1.28	2.04	0.12	0.27	45.04	47.02	20
7	780	152	-0.36	0.11	0.95	-0.4	0.96	-0.4	0.42	0.27	51.03	47.02	7
25	781	152	-0.37	0.11	1.03	0.3	1.03	0.3	0.36	0.27	52.00	47.01	25
27	785	152	-0.42	0.11	1.20	1.07	1.20	1.08	0.23	0.27	45.04	47.00	27
3	788	152	-0.46	0.11	1.30	2.05	1.27	2.03	0.32	0.27	40.01	46.08	3
32	801	152	-0.62	0.11	0.76	-2.3	0.81	-1.7	0.38	0.26	57.09	46.02	32
5	802	152	-0.64	0.11	0.88	-1.0	0.86	-1.2	0.33	0.26	52.06	46.01	5
31	805	152	-0.68	0.12	1.29	2.04	1.22	1.08	0.49	0.25	40.01	46.05	31
4	818	152	-0.86	0.12	0.86	-1.2	0.86	-1.2	0.38	0.24	54.06	46.06	4
1	830	152	-1.04	0.13	0.91	-0.7	0.90	-0.8	0.37	0.23	61.02	51.02	1
9	834	152	-1.11	0.13	0.77	-1.9	0.77	-2.0	0.41	0.23	64.05	52.07	9
8	835	152	-1.13	0.13	0.87	-1.0	0.86	-1.1	0.35	0.23	60.05	52.08	8
12	835	151	-1.22	0.13	1.16	1.03	1.07	0.6	0.43	0.22	62.03	55.07	12
16	888	152	-2.50	0.21	0.09	3.01	1.34	1.05	0.37	0.15	89.05	84.08	16
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MEAN	738.09	152.0	0.00	.0.11	1.02	0.0	1.02	0.1			50.03	47.01	
S.D.	78.03	.2	0.91	.0.02	0.23	1.09	0.21	1.09			10.06	7.03	

The item measure reveals the level of difficulty (Nur et al., 2020; Rusmana et al., 2020). The difficulty level of the items in table 3 can be viewed from table 13 of the measure order items in the winstep application. From the table we can see standard deviation is 0.91. Combining with the logit average value, very hard category is > 0.91. Severe category 0.0 to 0.91. Simple Category 0.0 - (-0.91). Then a very simple category < -0.91

Looking at the logit values for each element in table 3, and looking at the fit of each element in order of difficulty, we can see that there are four elements. in a very difficult category, namely items 34, 21, 29 and 2. 14 items into the difficult category, this items 15, 28, 10, 33, 11, 26, 17, 30, 23, 13, 6, 24, 14, 22. Also, there are 11 items that fall into the easy category, namely items 18, 9, 20, 7, 25, 27, 3, 32, 5, 31, 4. Last, there are 5 items that fall into the very easy category, namely items 1, 9, 8, 12, 16.

b. **Item Suitability Level**

Besides being able to find out the level of student ability in answering

the difficulty of the Rasch modeling items, this can also determine the suitability of student answers (Kirom & Hasyim, 2021). Item suitability analysis was carried out to find out whether the items used to measure motivation to learn physical education function normally (fit) or not (misfit) (Nur et al., 2022). The following results are obtained, interpreting the item item functions normally to measure the emotional stability of adolescents so that there are no misconceptions among individuals about the items studied based on data processing using winstep in table 10.1, namely fit order items based on table 10.1 fit order items can be reviewed based on the column out fit MNSQ, out fit ZSTD and point measure correlation:

Table 4. *Person fit order*

Entry	Total Score	Total Count	Measure	Model S.E.	Infit		Outfit		Pt-Measure		Exact Match		
					MNSQ	ZSTD	MNSQ	ZSTD	CORR.	EXP.	OBS%	EXP%	Item
16	888	152	-2.50	0.21	1.74	3.01	1.34	1.05	A 0.37	0.15	89.05	84.08	16
30	720	152	0.28	0.10	1.36	3.03	1.46	4.00	B-0.14	0.29	33.06	44.09	30
34	550	152	2.03	0.12	1.17	1.05	1.45	3.04	C-0.19	0.26	40.08	45.06	34
3	788	152	-0.46	0.11	1.30	2.05	1.27	2.03	D 0.32	0.27	40.01	46.08	3
31	805	152	-0.68	0.12	1.29	2.04	1.22	1.08	E 0.49	0.25	40.01	46.05	31
24	731	152	0.17	0.10	1.29	2.06	1.29	2.07	F 0.30	0.29	40.01	45.07	24
20	773	152	-0.28	0.11	1.18	1.06	1.28	2.04	G 0.12	0.27	45.04	47.02	20
6	729	152	0.19	0.10	1.25	2.03	1.27	2.05	H 0.19	0.29	40.08	45.06	6
17	704	152	0.43	0.10	1.21	2.00	1.24	2.03	I 0.21	0.29	38.02	43.06	17
21	551	152	2.02	0.12	1.14	1.02	1.22	1.08	J 0.05	0.26	41.04	44.04	21
27	785	152	-0.42	0.11	1.20	1.07	1.20	1.08	K 0.23	0.27	45.04	47.00	27
12	835	151	-1.22	0.13	1.16	1.03	1.07	0.6	L 0.43	0.22	62.03	55.07	12
33	659	152	0.86	0.10	1.03	0.3	1.05	0.6	M0.25	0.30	43.04	41.05	33
14	740	152	0.07	0.10	1.05	0.5	1.04	0.5	N 0.27	0.29	49.03	46.03	14
25	781	152	-0.37	0.11	1.03	0.3	1.03	0.3	O 0.36	0.27	52.00	47.01	25
18	767	152	-0.21	0.11	1.03	0.3	1.02	0.2	P 0.24	0.28	48.00	47.02	18
28	657	152	0.88	0.10	0.98	-0.2	0.98	-0.2	Q 0.41	0.30	39.05	41.06	28
7	780	152	-0.36	0.11	0.95	-0.4	0.96	-0.4	q 0.42	0.27	51.03	47.02	7
23	726	152	0.22	0.10	0.95	-0.4	0.95	-0.4	p 0.48	0.29	48.07	45.03	23
13	727	152	0.21	0.10	0.95	-0.4	0.94	-0.6	o 0.32	0.29	45.04	45.04	13
10	659	152	0.86	0.10	0.88	-1.3	0.94	-0.6	n 0.02	0.30	47.04	41.05	10
15	657	152	0.88	0.10	0.93	-0.7	0.94	-0.6	m 0.19	0.30	51.03	41.06	15
1	830	152	-1.04	0.13	0.91	-0.7	0.90	-0.8	l 0.37	0.23	61.02	51.02	1
5	802	152	-0.64	0.11	0.88	-1.0	0.86	-1.2	k 0.33	0.26	52.06	46.01	5

8	835	152	-1.13	0.13	0.87	-1.0	0.86	-1.1	j 0.35	0.23	60.05	52.08	8
4	818	152	-0.86	0.12	0.86	-1.2	0.86	-1.2	i 0.38	0.24	54.06	46.06	4
11	685	152	0.61	0.10	0.81	-2.0	0.82	-1.9	h 0.31	0.30	46.07	42.02	11
26	702	152	0.45	0.10	0.80	-2.1	0.81	-2.0	g 0.28	0.29	56.06	43.03	26
32	801	152	-0.62	0.11	0.76	-2.3	0.81	-1.7	f 0.38	0.26	57.09	46.02	32
19	767	152	-0.21	0.11	0.79	-2.1	0.80	-2.0	e 0.25	0.28	61.08	47.02	19
29	644	152	1.00	0.10	0.79	-2.3	0.79	-2.4	d 0.41	0.29	53.09	42.00	29
9	834	152	-1.11	0.13	0.77	-1.9	0.77	-2.0	c 0.41	0.23	64.05	52.07	9
2	645	152	0.99	0.10	0.70	-3.4	0.73	-3.1	b 0.34	0.29	44.0	41.09	2
22	746	152	0.01	0.10	0.66	-3.7	0.66	-3.7	a 0.30	0.28	61.08	46.07	22
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MEAN	738.9	152.0	0.00	0.11	1.02	0.0	1.02	0.1			50.3	47.1	
S.D.	78.3	0.2	0.91	0.02	0.23	1.9	0.21	1.9			10.6	7.3	

Table 4 above ranks the level of discrepancy between the criteria used (outliers or misfits) with reference to the criteria that will be used to check the appropriateness of the inappropriate answers, namely the outfit mean square, outfit Z-standard, and point measure correlation. The criteria for examining the suitability of item fit or item misfit (misfit), namely the MNSQ outfit the value is greater than 0.5 and less than 1.5 closer to 1, the better. Outfit ZSTD is more than -2.0 and <+2.0, the closer to 0 the better. Corelatioan measure points >0.4 and <0.85. The items can be reviewed in a fit manner if they meet at least 1 of the 3 criteria. All MNSQ outfit items have a value of >0.5 - <1.5. Based on table 4 above, 34 items meet the criteria so that the items are declared fit in the sense that they function normally and can be understood correctly by participants and are able to measure emotional stability, so there are no items that need to be deleted or corrected.

Rating scale diagnostic

This diagnosis was carried out to find out whether the participants understood the differences in the choice of answers in the emotional stability of adolescents. The difference on answers is understood by respondents if the observered average and andrich threshold values increase according to their level. In detail, the andrich threshold values can be seen in winstep table 3.2.

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Table 5. *Andrich threshold*

Category Observed				Bsvd Sample		Infit	Outfit	Andrich	Category	
Label	Score	Count	%	Avrge	Expect	Mnsq	Mnsq	Threshold	Measure	
3	3	495	10	-0.40	-0.58	1.21	1.33	NONE	(-2.44)	3
4	4	1197	23	-0.03	0.07	0.86	0.84	-1.13	-0.75	4
5	5	2002	39	0.64	0.66	0.91	0.85	-0.14	0.70	5
6	6	1473	29	1.34	1.30	0.98	1.02	1.27	(2.53)	6
Missing		1	0	0,101389						

Table 5 above shows the suitability and the same increase in the emotional stability alternative. The results of the analysis show that emotional stability is in accordance with the real conditions of adolescent behavior.

Instrument Analysis

The information is used in the winstep 3.1 table: summary statistics.

Table 6. *Summary person*

	Total Score	**Count**	**Measure**	**Model Error**	**Infit**		**Outfit**	
					MNSQ	**ZSTD**	**MNSQ**	**ZSTD**
MEAN	165.3	34.0	0.59	0.23	1.01	-0.2	01.02	-0.2
S.D.	07.3	0.1	0.38	0.01	0.53	02.01	0.62	2.01
MAX.	188.0	34.0	2.00	0.29	3.02	06.00	0,221528	8.03
MIN.	133.0	33.0	-1.01	0.22	0.34	-04.1	0.34	-04.0
REAL RMSE 0.25		TRUE SD 0.29		SEPARATION 1.14		Person RELIABILITY 0.57		
MODEL RMSE 0.23		TRUE SD 0.31		SEPARATION 1.34		Person RELIABILITY 0.64		
S.E. OF Person MEAN = 0.03								

Table 7. *Summary item*

	Total Score	**Count**	**Measure**	**Model Error**	**Infit**		**Outfit**	
					MNSQ	**ZSTD**	**MNSQ**	**ZSTD**
MEAN	738.9	152.0	0.00	0.11	1.02	0.0	1.02	0.1
S.D.	78.3	0.2	0.91	0.02	0.23	1.09	0.21	1.09
MAX.	888.0	152.0	2.03	0.21	0,093056	3.03	1.46	4.00
MIN.	550.0	151.0	-2.50	0.10	0.66	-03.7	0.66	-3.7
REAL RMSE 0.12		TRUE SD 0.91		SEPARATION 7.47		Item RELIABILITY 0.98		
MODEL RMSE 0.11		TRUE SD 0.91		SEPARATION 8.03		Item RELIABILITY 0.98		

S.E. OF Item MEAN = 0.16						

Person measures represent the mean scores of all participants in completing items of the Adolescent Emotional Stability Disclosure Measures. A greater mean individual score than the mean item (mean item being his 0.00 logit) indicates that the participant's ability is generally higher than the difficulty of the instrument item.

The Cronbach alpha value for human-to-item interaction is 0.62, which is included in the good category. The Cronbach Alpha values describe how a person interacts with the item as a whole (Chan et al., 2014; Ilfiandra et al., 2022). In this case, the Individual Confidence Score is 0.57 as a measure of the consistency of answers for respondents with sufficient categories. On the other hand, item confidence is 0.98 as an indicator of item quality for instruments that fall into the special category.

Other data in winstep 3.1 tables, the averages of out fit MNSQ and in fit MNSQ are 1.01 and 1.02. On the other hand, from the table of articles, it can be seen that the average value of infit MNSQ is 1.02 and the average value of outfit MNSQ is 1.02. standard: The ideal value is 1, so the closer to 1 the better. Therefore, the average person or thing is close to the ideal standard.

For outfit ZSTD and infit ZSTD, the average individual scores are -0.2 and -0.2 respectively (Taufiq et al., 2021). On the other hand, from the item table, we can see that infit ZSTD has an average value of 0.0 and outfit ZSTD has an average value of 0.1. The ideal ZSTD value is 0, the closer to 0 the better. In this way, it can be said that both the quality of the person and the quality of the product are good.

E. DISCUSSION

A gauge measured by undimensionality is a scale that assesses whether you can measure what the emotional stability gauge is trying to measure. Rasch model analysis is used to measure means diversity by examining whether means are effective. The measurement results

show that the undimensional requirement is ≥20% and the obtained values are 35.4%, i.e. well-categorical, i.e. satisfied, so that the raw variance tends to be equal to the expected value indicates that Furthermore, the results show that when there is unexplained variance, each dimension can be measured because the instrument item scores less than 15%. In this way, the device unidimensionality test results can ensure the validity of the device's expected structure.

Adolescents who have emotional stability will be able to express their emotions appropriately and carefully and are also better able to manage behavior in interactions with their environment. With a valid instrument, it will be able to demonstrate the emotional stability needed by adolescents. The accuracy of the instrument construct can also provide an accurate picture so that it can provide appropriate interventions regarding what emotional stability is like in adolescents.

The item analysis results show that the categories of these items are evenly distributed. The first is very hard, hard, easy, very easy. In the analysis of the level of conformity, it was found that the items function normally to measure emotional stability, which means that each item can be understood and does not cause misconceptions. Each item meets one or two criteria so that there are no items that need to be corrected. The results of the rating scale show that the emotional stability instrument is able to measure the condition and behavior of adolescents in real terms.

Instrumental analysis results indicate that the instrument is of sufficient quality to be used as a tool to measure emotional stability in adolescents. In the interaction between people and things classified as "Good", the consistency of the respondents' answers was included in the fairly consistent category. The results of the reliability of the instrument get results that are classified as special. The instrument can be said to be compliant. Therefore, overall, the emotional stability instrument is good enough to identify the emotional stability of adolescents aged 16-17 years in senior high schools.

F. CONCLUSION

In undimensional analysis, we can say that this tool can measure the emotional stability of adolescents. The variance value of each is below 15%, the resulting raw variance shows an adequate category with a value of 35.4%. Based on the results of the RASCH model analysis, we can conclude that the emotional stability instrument is sufficient to measure adolescent emotional stability. The Cronbach Alpha score represents the overall interaction between people and items, and the reliability of people is good while the quality of items is good. The Person Reliability is also in the moderate category, indicating that respondents are fairly consistent in their answers. On the other hand, item reliability as an indicator of item quality falls into a special category. The average standard item difficulty level is below the emotional stability of adolescents. Thus, emotional stability instrument items are easily approved by teenagers.

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