

Validity And Reliability Of The Emphaty Scale Construction

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Abstract: The purpose of this study is to describe empathy in the educational context, to analyze the construct validity and reliability of the empathy scale, and to find aspects that make up the construct of the empathy scale. Empathy is measured by four aspects: perspective taking, fantasy, personal distress and empathic concern. The subjects in this study were 59 high school X students. This study was analyzed using the Smart PLS 3.2.8 program with reflective constructs through the 2nd order CFA. Based on the analysis of construct validity and construct reliability, the aspects and indicators that make up empathy are valid and reliable. This shows that all aspects and indicators are able to reflect and shape empathy. The dominant aspect that affects the construction of empathy is personal distress. The lowest aspect that affects the construction of empathy is fantasy. Thus the model can be accepted because the theory that describes empathy is in accordance with the empirical data obtained.

Keywords: Empathic Concern, Empathy, Fantasy, Perspective Taking, Partial Least Square, Personal Distress, School

1. INTRODUCTION

Empathy is a central component of normal social functions for pro-social behavior [1], maintaining social relationships [2], and improving psychological well-being [3]. In this view, being able to conceptualize and assess empathy in a valid and apparent way [4]. Individuals who have the ability to empathize can be known based on their behavior or actions. This is according to what was mentioned by Borba [5] that children who have empathy will show an attitude of tolerance, compassion, understanding the needs of others, want to help people who are difficult, more understanding, caring, and better able to control emotions. The ability of empathy begins to be possessed by individuals when they reach the end of early childhood, namely the age of six years. All individuals have the ability to empathize, only different levels of depth and how to actualize them. So as a teenager should already have the ability to empathize. Empathy is the ability to feel the emotional state of others, feel sympathetic and try to solve problems, and take the perspective of others [6]. The need to empathize is greater along with increasing awareness of the importance of empathy. The ability to recognize and empathize with others is needed to foster and maintain relationships, including romantic relationships [7]. Empathy is widely used as a technique to improve inter-group relations [8]. Lack of empathy has an impact on antisocial personality disorder and these individuals tend to show low sensitivity to others who experience difficulties [9].

Other research says that the impact of low empathy is shown by students not appreciating other people's feelings, mocking each other, and fighting in class [10]. Increasing the amount of empathy in schools in the curriculum as an effort to reduce bullying and other aggressive behavior [7]. Other curriculum develops empathy to increase awareness and positive attitudes towards individuals with learning disabilities [11]. Empathy can foster compassion, relief, reduce, help and alleviate sadness, make life happier, be a talk, and know the truth .

Empathy leads to affective terms, which can inhibit aggressive and antisocial behavior [13], [14], [15]. Empathy is negatively

related to aggression, external behavior, antisocial, and acceptance of physical violence [16]. Other literature shows that low empathy can affect the formation of characteristics of cyberbully [17]. Empathy is an individual's reaction in observing the experiences of others [18]. The reaction in question is in the form of cognitive reactions or reactions that are more referring to emotional reactions (affective). Empathy is described as the ability of individuals to understand the feelings and emotions of others and imagine themselves in other people's places [19]. Some experts define empathy as the ability to align oneself with what others might feel and think in certain situations [20]. According to Gottman [21], empathy is the ability to place oneself in the position of others and respond according to circumstances. Empathy has a cognitive component that is the ability to see the psychological state in others [22]. Empathy consists of cognitive and affective components, this has developed substantially [23]. Over the years, various measures of empathy have themselves been developed [24]. Davis [25] states that the Interpersonal Reactivity Index is the scale most often used to measure individual differences in empathy tendencies [26]. First, this scale is considered the only scale based on the conceptualization of multidimensional empathy. Second, IRI is considered the most extensive and comprehensive measure of empathy. The scale developed by the Interpersonal Reactivity Index [25] consists of four subscales on seven items, each of which is a separate aspect of the concept of empathy in general. The Perspective Taking Scale (PT) contains items that assess spontaneous efforts to adopt the perspectives of others and see things from other people's perspectives. Items on a fantasy scale (F) measure the tendency to identify with characters in films, novels, dramas and other fictional situations. Two other subscales explicitly reveal the emotional reaction of individuals to negative experiences of others. Empathy Concern (EC), which is the tendency to experience feelings of warmth, sympathy, and attention towards others, while Personal Distress (PD) is the tendency of individuals to have uncomfortable and worried feelings when seeing negative experiences of others.

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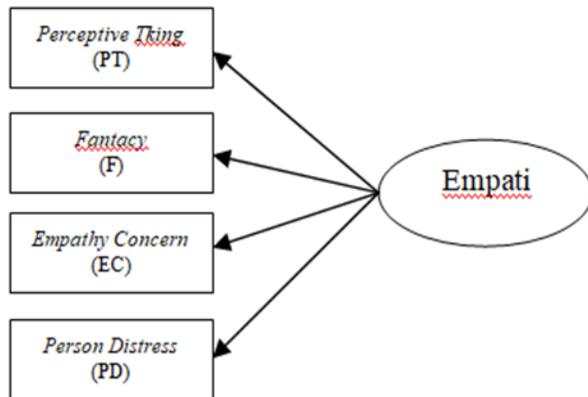


Fig. 1. Conceptual Framework for Confirmatory Factor Analysis in Empathy Construction

H: Perspective Taking (PT), Fantasy (F), Empathy Concern (EC), Personal Distress (PD) aspects, are able to form empathy constructs.

The approach that can be used in testing the construction of a measuring instrument is Confirmatory Factor Analysis. Confirmatory Factor Analysis (CFA) is one of the main approaches in factor analysis. CFA can be used to test the dimensionality of a construct. This test is used to measure the model (model measurement) so that it can describe aspects and indicators of behavior in reflecting latent variables, namely empathy. You do this by looking at the loading factor of each aspect that forms a construct. Confirmatory Factor Analysis (CFA) is also used to test the validity of the extracts and the reliability of the constructs of the indicators (items) forming latent constructs [27]. The CFA used in this study is a second order confirmatory factor analysis (2nd Order CFA), a measurement model that consists of two levels. The first level, the analysis is carried out from variable to aspect and the second analysis is carried out from aspect to indicator [27]. Based on the description above, it can be concluded that empathy is a component in prosocial behavior. Given the importance of empathy, the formulation of the problem in this study are: 1) Is the construct of empathy valid and reliable? And 2) Are aspects of perspective taking, fantasy, empathic concern and personal distress able to form constructs or variables of empathy? This study aims to describe empathy in the educational context, to analyze the construct validity and empathy scale reliability, and to find aspects that make up the empathy scale construct.

2 RESEARCH METHOD

2.1 Research Subject

The subjects in this study were 59 students with the following criteria: high school students or equivalent, age 15-17 years, have a low to moderate empathy score, get approval to be a research subject from the school, and willing to be the subject of this research.

2.2 Research Design

The design in this study is semi-construction, where the scale design will be done using theoretical collaborative studies with information directly obtained from field data. The advantage of using this semi-construction design is to strengthen existing

theories and reproduce behavioral indicators that can be obtained. Furthermore, testing of psychometric properties, including content validity analysis, discriminating power, confirmatory factor analysis, and external concurrent validity testing.

2.3 Instrument

The instrument used to measure empathy in this study is the scale of empathy constructed by the author based on the empathy aspect of Davis [18], namely perspective taking, fantasy, empathic concern and personal distress. The following examples of items on the perspective of taking aspects are "I am prioritizing the interests of others rather than my interests" and "I prefer to do tasks in groups rather than individually". Examples of items in the fantasy aspect are "When I see a friend not excited I will ask the situation" and "I don't like seeing my friend sad". Examples of items in the empathic aspect of concern are "Seeing my friend grieve because the test scores are low, I am also sad" and "I hate people who complain about their lives". Examples of items on the aspect of personal distress are "I feel ordinary when I see other people fainting" and "Seeing my friend on the bully I feel normal". Azwar [28] states that the scale used in this study is a modification of the Likert scale with each scale having four alternative answers separated into favorable and unfavorable statements, by rating using four categories of answers. Scoring scales can be seen in Table 1.

TABLE 1
SCORE OF EMPATHY SCALE

Statement	Favorable Score	Unfavorable Score
Very Appropriate	4	1
Appropriate	3	2
Not Appropriate	2	3
Totally not Appropriate	1	4

The author uses the number of items on an empathy scale totaling 32 items consisting of 16 favorable items and 16 unfavorable items. Here is a blueprint of the empathy scale.

TABLE 2
BLUE PRINT EMPATHY SCALE

Aspect	Indicator	Item		Total
		Favo	Unfavo	
Perspective taking	a. Prioritize the attitude of perspective rather than self-centered	1,4, 8,12	16,20, 22,28	6
	b. Achieve self-awareness through other people			
Fantasy	a. Able to put themselves in fictitious situations	2,5, 9,17	21,25, 11,13	6
	b. Give a reaction or response to changes in the conditions or actions of others			
Empathic concern	a. Showing high concern and compassion for others	3,6, 10, 14	18,22, 26,29	6
	b. There is a high sense of self about the condition of others .			
Personal distress	a. Feel surprised and deeply concerned about the suffering experienced by others	7,15, 19, 23	27,31, 30,32	6

b. Experiencing excessive fear and anxiety for the suffering experienced by others.			
Total	16	16	36

2.4 Construct Validity and Reliability

2.4.1 Construct Validity

This study uses the validity and reliability of empathy measuring instruments with the outer reflective construct test. To confirm how well the results obtained, researchers used a confirmatory validity test so that the use of measuring instruments has good results with a theoretical reference that can define a construct. The construct validity test used is convergent validity by looking at the loading factor value > 0.5 average variance extracted (AVE) value > 0.5 and discriminant validity compared to the average variance extracted root (AVE) of a construct must be higher than the correlation between aspect.

2.4.2 Construct Reliability

Reliability test is performed to show the internal consistency of the measuring instrument by looking at the value of composite reliability and Cronbach's alpha with a higher value. It aims to show the consistency value of each item in measuring latent variables. Hair [29] state that the expected composite reliability and Cronbach's alpha value is > 0.7 and the value 0.6 is still acceptable. Internal consistency has also been met if the validity of the extract has met the criteria so that the value of Average Variance Extracted (AVE) has represented internal consistency. If the construct is valid, then the construct is reliable but on the contrary a reliable construct is not necessarily a valid construct [30].

2.5 Data Analysis

Analysis of the data in this study using the Smart PLS 3.2.8 program with reflective constructs through the 2nd Order CFA. According to Hartono and Abdillah [31] PLS is a variance-based structural equation analysis (SEM) that can simultaneously test measurement models to test the validity and reliability.

3 RESULT

Based on the Empathy scale model test results obtained as follows

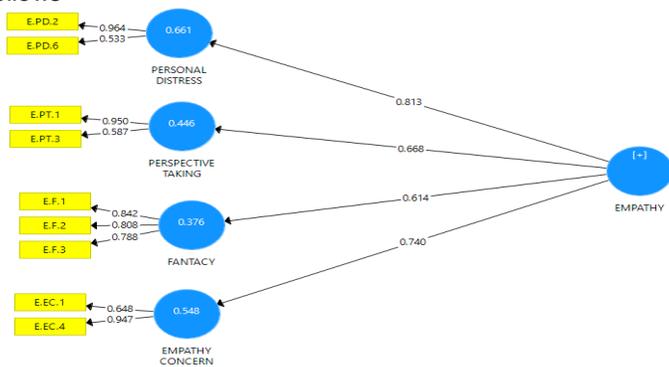


Fig 2. Empathy Scale model outer test results

3.1 Convergent Validity

Based on the convergent validity test the loading factor value is seen from the variable on the Aspect that has fulfilled the requirements with a value > 0.5. Following is the loading factor:

TABLE 3
LOADING FACTOR (VARIABLE-ASPECTS)

Aspects	Loading Factor	Information
PD	0.813	Valid
PT	0.668	Valid
F	0.614	Valid
EC	0.740	Valid

Based on the convergent validity test the loading factor value seen from the Aspect-Indicator meets the requirements with a value > 0.5. Here is a table of loading factor values.

TABLE 4
LOADING FACTOR (ASPECT-INDICATOR)

Item	Loading Factor	Information
PD.2	0.964	Valid
PD.6	0.533	Valid
PT.1	0.950	Valid
PT.3	0.587	Valid
F.1	0.842	Valid
F.2	0.808	Valid
F.3	0.788	Valid
EC.1	0.648	Valid
EC.4	0.947	Valid

The next convergent validity test is known that the Average Variance Extracted (AVE) value of empathy constructs is 0.527 that meets the requirements > 0.5 and the Average Variance Extracted (AVE) value of each Aspect also meets > 0.5. Here is a table of Average Variance Extracted values (AVE):

TABLE 5
THE VALUE OF AVERAGE VARIANCE EXTRACTED (AVE) EMPATHY

Aspect	AVE Value	Information
Personal Distress	0.607	Valid
Perspective Thinking	0.623	Valid
Fantasy	0.661	Valid
Empathy Concern	0.658	Valid

3.2 Discriminant Validity

Based on the discriminant validity test values, the root results of the Average Variance Extracted or AVE in each dimension are higher than the average variance extracted root or AVE in other dimensions, so that the discriminant validity criteria are met. Average Variance Extracted Root Value (AVE) construct of empathy can be seen in the table 6.

TABLE 6
ROOT VALUE AVERAGE VARIANCE EXTRACTED (AVE)
EMPATHY CONSTRUCT

Aspect	PD	PT	F	EC
PD	0.779	0.384	0.384	0.553
PT	0.384	0.790	0.330	0.339
F	0.384	0.330	0.813	0.319
EC	0.553	0.790	0.316	0.811

The construct validity in SEM (Confirmatory Factor Analysis or CFA) shows that all four Indicators are valid with a loading factor value (λ) ≥ 0.5

3.3 Construct Reliability Testing

Based on the results of the construct reliability test that has been done, the Composite Reliability and Cronbach's Alpha values > 0.7 can be obtained so that the items used in this study are reliable.

TABLE 7
VALUE COMPOSITE RELIABILITY AND CRONBACH'S
ALPHA CONSTRUCT EMPATHY

Variable	Composite reliability	Cronbach alpha	Information
Empathy	0.815	0.695	Reliable

The results of construct reliability testing using Confirmatory Factor Analysis 2nd Order in Table 7 above show that constructs have good reliability and give meaning that the aspect that measure constructs or latent variables of empathy meet unidimensional criteria [30]. This is indicated by the Composite Reliability value of 0.815 and Cronbach's Alpha 0.695. Based on the processing and analysis of research data on the aspect of variables or constructs of empathy formed using the 2nd Order Confirmatory Factor Analysis, the results show that the model is acceptable, because all aspect are able to reflect on the variables or constructs that are formed.

4 DISCUSSION

Based on the results of the analysis of the construct validity and construct reliability, all the aspects and items that make up student empathy are declared valid and reliable so that all of these Aspects and Indicators are able to reflect and form empathy in students. The most dominant aspect to reflect empathy is the personal distress aspect where the main Indicator is experiencing excessive fear and anxiety towards the suffering experienced by others. The more specific behavior is when a friend is bullied by an individual who feels normal and feels fine when he sees someone else fainting. The lowest aspect that reflects empathy is the Aspect fantasy where the main Indicator is to give a reaction or response to changes in the conditions or actions of others. The specific behavior is to ask the news of a friend who looks unenthusiastic and disliked when he sees his friend feeling sad. Considering that this research proved that Aspect personal distress has the highest loading factor value (that is 0.813) as a constructor of constructs or variables of empathy compared to the other three Indicators, namely empathy concern with loading factor of 0.740; perspective taking with a loading factor of 0.668; fantasy with a loading factor of 0.614. The findings of this study support the theory or concept described by Pélouquin, and Lafontaine [32] using Aspect emotional empathy, perspective taking, empathic concern and

dyadic perspective taking that meet the reliability requirements with alpha cronbach's of 0.695 while this study uses Aspect perspective taking, fantasy, personal distress and empathic concern. In addition, these findings also support the results of empirical studies conducted by Gilet, Mella, Studer, Grünh, & Labouvie-Vief [33] which prove that empathy fulfills the reliability requirements with alpha cronbach's 0.70 to 0.81. Scale score reliability is different from or smaller than the internal consistency of the original version from 0.72 to 0.78 [25]. The results of this study are expected to provide an overview of the validity and reliability of the empathy construct in the context of school students so that it can be used as a reference in further research related to empathy. the findings of this study are able to provide theoretical implications in the development of empathy theory and practical implications in applying empathy to students, and for advanced researchers, can test empathy models in relation to other variables, expand research units or use different contexts so that research results can be generalized.

5 CONCLUSION

Based on the results of the analysis and discussion, it can be concluded that all existing Aspects and Indicators are able to reflect and form empathy. The dominant aspect affecting the construction of empathy is personal distress. The lowest aspect that affects the construction of empathy is fantasy. Thus the model can be accepted because the theory that describes empathy is in accordance with the empirical data obtained.

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