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## **Altruism Scale: A Psychometric Study for Junior High School Student**

Kuswoyo<sup>a</sup>, Fatwa Tentama<sup>b\*</sup>, Pipih Muhopilah<sup>c</sup>

<sup>a,b,c</sup>*Master of Psychology, Ahmad Dahlan University, Yogyakarta, Indonesia*

<sup>a</sup>*Email: kuswoyoaji78@gmail.com*

<sup>b</sup>*Email: fatwa.tentama@psy.uad.ac.id*

<sup>c</sup>*Email: pipihmuhopilah7@gmail.com*

### **Abstract**

The purpose of this study is to test the construct validity and reliability on the altruism scale and examine the aspects and indicators that can form this variable. Altruism is measured by three aspects, namely empathy, voluntary, and desire to help. The population in this study are all students of "X" Public Middle School in Semanu, consisting of 572 students, with a total sample of 142 students. The sampling technique in this study is a simple random sampling technique, while the data collection method used is the altruism scale. Research data were analyzed with Structural Equation Modeling (SEM) through the SmartPLS 3.2.8 program. Based on the results of data analysis, the aspects and indicators that made up the altruism variable were declared valid and reliable. The most dominant aspect that reflects altruism is empathy, with a loading factor of 0.823, and the weakest aspect that reflects the variable is the desire to help, with a loading factor of 0.780. This shows that all aspects and indicators are able to reflect and form altruism variables. Thus the measurement model can be accepted because the theory that describes altruism fit variables with empirical data obtained from the subject.

**Keywords:** Altruism; Desire to Help; Empathy; Construct reliability; Construct validity; Voluntary.

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\* Corresponding author.

## **1. Introduction**

Education is a very important aspect of individual development. In addition to developing cognitive potential, education also serves to develop students' affective potential. One important affective potential to be developed in students is altruism. Altruism is intentional and voluntary actions taken to benefit others. This action is carried out without any desire or hope to get rewards and gifts from others in return [1]. The results of [2] research show that the development of moral knowledge, attitudes, and skills is important to give to students. Reference [3] found that individuals with higher education have higher levels of altruism. Some of the results of these studies indicate that the educational process is an effective means of developing altruism.

Altruism is shown by the willingness to reduce one's comfort for the comfort of others [4]. Numerous studies show that individuals who engage in altruistic behavior have higher physical health, psychological well-being, and happiness [5,6,7]. Besides, altruism behavior has a role in increasing life satisfaction [8], self-esteem [9] and wellbeing [10], and a potential strategy for post-traumatic coping [11]. For the community, altruism can increase social interaction [12] and reduce conflict [13]. For adolescents, altruism behavior can foster a sense of responsibility and reduce apathy [14] and develop social attitudes [10]. Conversely, low altruism is associated with deviance [15], selfishness [16], and narcissism [17].

Various factors can influence behavior. For example, crises such as disasters can increase altruism behavior because, in times of crisis, the need for mutual support is very high [18]. Altruism behavior is also influenced by self-control. Individuals with good self-control will involve in processing information with rational thinking so that it shows more altruism behavior [19, 20]. The results of Hough, Whitehead, Cornnachia, and Porterfield's study showed that altruism is influenced by mood, personality type, and closeness of individuals with recipients of altruism.

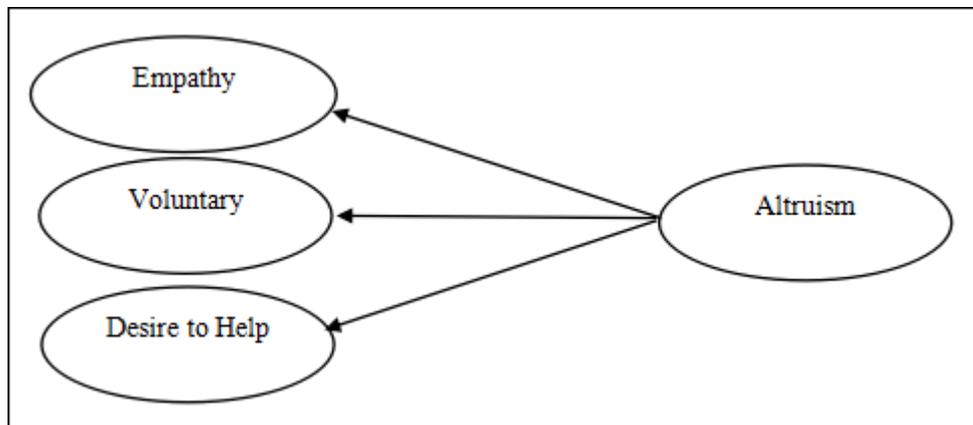
The results of observations at the "X" Public Middle School in Semanu show that students do not take the initiative to develop mutual assistance. When giving assistance, students tend to ask for rewards and expect something in return. This phenomenon is found equally, namely when students provide assistance to other students or when providing assistance to teachers or school staff. This shows that students have a low altruism attitude.

The concept of altruism was first introduced by Aguste Comte, and he revealed altruism as a principle of behaving to devote oneself to the interests of others [22]. Scientific research on altruism began in the 1960s [23]. The psychological basis in altruism is explained in social exchange theory [24]. Evolutionary theorists see altruism as a social exchange effort, so scientists conclude that most altruism is associated with pseudo-altruism [25]. Self-space basis views that altruism is open-mindedness as a result of the urge to fulfill the need to coexist with others [26,27]. According to an evolutionary view, altruism occurs because of a desire for longer survival. Altruism is an effort to protect themselves, relatives, and the environment to develop themselves to survive [28]. Sociologically, altruism makes individuals willing to put others ahead of themselves [29] and makes individuals ready to help others without expecting anything in return [30].

According to [31], altruism is voluntary behavior carried out intentionally with motivation to benefit others without wanting rewards or the desire to avoid punishment. Altruistic action is a deliberate action to help/benefit others without bringing benefits for themselves, sometimes even making the individual have to pay [32]. Altruism is a form of behavior that aims to help others without reward but is more motivated by the desire to benefit others [33]. According to [34], altruism is a motive for improving the welfare of other people without regard to profit for themselves.

At this time, there are various views that develop the concept of altruism. Psychology views altruism as part of self-promotion, which is pseudo-altruistic behavior that might be done to help reduce the difficulties of others or to get credit for altruistic behavior. However, in individuals with low selfishness, he will think more about the welfare of others before himself, and he will do something useful for others even if it is risky for him [35]. Research on altruism continues to develop, for example, research from [36], which found that altruism is related to the student's intention to donate organs.

Reference [30] states that individuals can have a tendency to altruism when contained within themselves the following aspects: First, empathy, namely the ability to feel, understand and care about the feelings experienced by others. Second, voluntary, that is, there is no desire to get a reward in return. This action is solely carried out for the benefit of others, even willing to sacrifice the values of honesty and justice that exist in him. Thirdly, the desire to help is the desire to assist others in need even though no one knows. Assistance provided can be material and time.



**Figure 1:** Conceptual model of altruism

Based on Figure 1 above, this study hypothesizes that 1) Altruism scale measurement model that is fit with empirical data is formed. 2) The aspects of altruism, such as empathy, voluntary, and desire to help, are able to form altruism variables.

One approach that can be used in testing the construct of a measuring instrument is Confirmatory Factor Analysis (CFA). Confirmatory Factor Analysis (CFA) is one of the main approaches in factor analysis. Confirmatory Factor Analysis (CFA) can be used to test aspects 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 (e.g., altruism) by looking at the loading factor of each aspect that forms the construct. Confirmatory Factor Analysis (CFA) is also used to test the construct validity and construct reliability of the indicators (items) forming latent constructs [37]. Confirmatory Factor Analysis (CFA) used in this study is the second order Confirmatory Factor Analysis (2nd Order CFA), a measurement model that consists of two levels. The first level of analysis is carried out from aspects to its indicators, and the second analysis is carried out from latent variables to its aspects [37]. Based on the description above, the formulation of the problem in this study is: 1) Is the altruism scale valid and reliable? 2) Are the aspects of empathy, voluntary, and desire to help able to form altruism variables ?. The purpose of this study is to: 1) Test the validity and reliability of the altruism scale, and 2) Test the aspects and indicators that can form altruism variables.

## **2. Research Method**

### **2.1. Population, Sample, and Sampling Technique**

The population in this study were all students of "X" Public Middle School in Semanu, totaling 572 students. The sample consists of 142 students. The sampling technique used in this study is a simple random sampling technique.

### **2.2. Data Collection Method**

Altruism in this study was measured using the altruism scale with a Likert scaling model. The scale of this study was compiled by researchers with reference to aspects of altruism, according to Myers [30], namely empathy, voluntary, and desire to help. Examples of items on the empathy aspect are "Don't care about the condition of a disabled friend" and "Feel normal to watch disasters on television." Examples of items on voluntary aspects are "Befriending with someone equal" and "Ignoring people's feelings when I talk to that person." Examples of items on the aspect of desire to help are "feel unhappy when sharing food to neighbors" and "avoid donating to disaster victims". Blueprints that are used as a reference in developing altruism scale can be seen in table 1.

**Table 1:** Blueprint of aggressive altruism scale

Aspect	Indicator	Item Number		Total
		Favorable	Unfavorable	
Empathy	Feeling	1, 2,3	4, 5, 6	14
	Understanding	7, 8	9, 10	
	Caring	11, 12	13, 14	
Voluntary	Honesty	15, 16, 17, 18	19, 20, 21, 22	14
	Justice	23, 24, 25	26, 27, 28	
Desire to help	Material (money)	29, 30, 31, 32	33, 34, 35, 36	14
	Time	37, 38, 39	40, 41, 42	
Total		21	21	42

### 2.3. Construct Validity and Reliability

To test the construct validity and construct reliability, this study uses the outer model testing through the smartPLS 3.2.8 program. The construct validity test consists of convergent and discriminant validity tests. Convergent validity can be seen from the loading factor and the Average Variant Extracted value of  $> 0.5$  [38]. According to [39], the higher the loading factor score, the more critical the role of loading will be in interpreting the factor matrix. Loading factor and Average Variance Extracted values of  $> 0.5$  are considered significant [38]. While discriminant validity can be seen from comparing the roots of the Average Variance Extracted (AVE) between aspects in which it must be higher than the correlation with other aspects [38].

The construct reliability test is performed to show the internal consistency of the measuring instrument, by looking at the value of composite reliability and Cronbach alpha with a higher value, it will show the consistency value of each item in measuring latent variables. According to [39], the expected composite reliability and Cronbach alpha values are  $> 0.7$ , but 0.6 are still acceptable [38].

### 2.4. Data Analysis

The data in this study were analyzed using the outer model with the CFA 2nd Order approach through the SmartPLS 3.2.8 program. According to [40], Partial Least Square (PLS) is a variant-based Structural Equation Model (SEM) that can simultaneously test measurement models to test the construct validity and reliability.

## 3. Result

The test result of the outer altruism scale model performed using the Smart PLS 3.2.8 program can be seen in Figure 2.

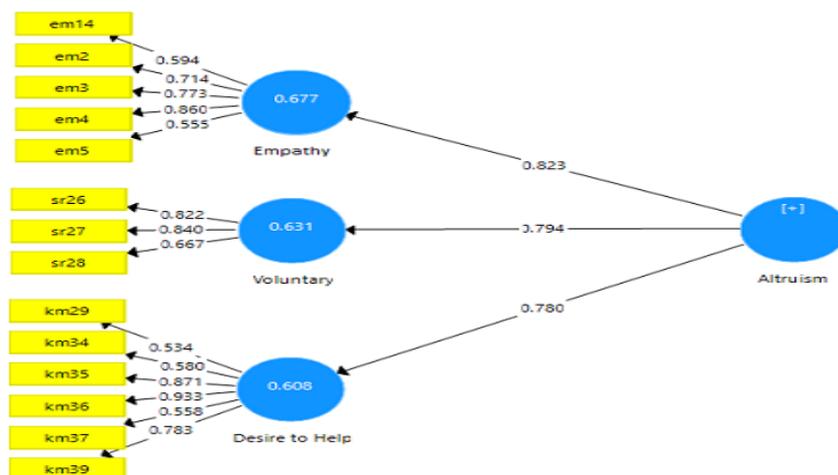


Figure 2: Output outer model of aggressive altruism scale

### 3.1. Construct Validity Test Result

#### 3.1.1. Convergent Validity

Convergent validity test is performed by testing the outer model seen from the loading factor value and Average Variance Extracted (AVE). This test is done by looking at the loading factor and the AVE value of > 0.5. Based on the data analysis, it was found that the value of loading factors from variables to aspects and from aspects to indicators is > 0.5. Loading factor values of above 0.5 or more are considered strong enough to explain latent constructs' validity [39]. The results of convergent validity testing can be seen in table 2 and table 3.

**Table 2:** Loading factor values (variable - aspect)

Aspect	Loading Factor	Explanation
Empathy	0.823	Valid
Voluntary	0.794	Valid
Desire to Help	0.780	Valid

**Table 3:** Loading factor values (aspect - item)

Item	Loading Factor	Explanation
EM14	0.594	Valid
EM2	0.714	Valid
EM3	0.773	Valid
EM4	0.860	Valid
EM5	0.555	Valid
SR26	0.822	Valid
SR27	0.840	Valid
SR28	0.667	Valid
KM29	0.534	Valid
KM34	0.580	Valid
KM35	0.871	Valid
KM36	0.933	Valid
KM37	0.558	Valid
KM39	0.783	Valid

Furthermore, the results of the convergent validity test show the Average Variance Extracted (AVE) value is > 0.5. the AVE value of the altruism variable is 0.538, and the AVE value of each aspect can be seen in table 4.

**Table 4:** Average variance extracted (AVE) value

Aspect	AVE Value	Explanation
Empathy	0.502	Valid
Voluntary	0.609	Valid
Desire to Help	0.529	Valid

### 3.1.2. Discriminant Validity

The results of the discriminant validity test show that the root value of the Average Variance Executed (AVE) in each aspect is higher than the root value of the AVE in other aspects, so the discriminant validity criteria are met. The root value of the (AVE) altruism variable can be seen in table 5.

**Table 5:** Root value of average variance extracted (AVE) of altruism

Aspect	Empathy	Voluntary	Desire to Help
Empathy	0.708	0.625	0.467
Voluntary	0.625	0.780	0.534
Desire to Help	0.467	0.534	0.728

### 3.2. Construct Reliability Test Result

Construct reliability testing is done by testing the outer model, which is seen from the value of composite reliability and Cronbach alpha, which should be above 0.7. It means that the scale in this study is reliable. The composite reliability and Cronbach alpha values can be seen in table 6.

**Table 6:** Composite reliability and Cronbach alpha value of altruism variable

Variable	Composite Reliability	Cronbach Alpha	Explanation
Altruism	0.823	0.713	Reliable

The results of the construct reliability test in table 6 show that the altruism scale has good reliability, and it means that aspects that measure altruism variables meet unidimensional criteria [39]. This is indicated by the reliability value of 0.823 and Cronbach Alpha of 0.713. The construct validity and reliability test results invalid and reliable items that can reflect the aspects of altruism are aspect numbers 2, 3, 4, 5, 14, 26, 27, 28, 29, 34, 35, 36, 37, and 39. The results of the research data analysis using the outer model test also shows that the measurement model can be accepted because all aspects can reflect the variables formed.

## 4. Discussion

Based on the results of the analysis of construct validity and construct reliability, the aspects and indicators that make up the altruism scale are declared valid and reliable. This shows that all aspects and indicators are able to

reflect and shape altruism variables. The most dominant aspect that is able to reflect altruism is empathy, with a loading factor of 0.823. The empathy aspect is illustrated by the ability of students to feel the feelings of others, try to understand the situation of others, and care for the difficulties experienced by others. Valid and reliable indicators show that students feel sad and concerned when they see other people in difficulties, both the difficulties experienced by known and unknown people. However, this feeling of empathy has not been manifested in the form of behavior. For example, students do not want to help their disabled friends, and when they see scattered trash, they just leave it because they think there will be a janitor cleaning it. The results of this study indicate that empathy plays an important role in altruism. The results of previous studies indicate that high empathy can induce altruism [41] (Batson, & Ahmad, 2001). When empathy increases and is accompanied by good interaction skills, altruism will emerge [42] (Andreoni, & Rao, 2011). The high role of empathy is because empathy is the driving force of morality, empathy is also correlated with the act of doing good [43] (Bethlehem, Allison, van Anandel, Coles, Neil, & Baron-Cohen, 2017). Empathy makes the individual want to do something to improve the well-being of others, makes him not easily tired to try to provide altruistic knowledge [44] (Burks, Youll, & Durtschi, 2012).

The weakest aspect which reflects altruism is the desire to help with a loading factor of 0.780. Desire to help is indicated by the desire of students to help others even though it will use up the material and time they have. Valid and reliable indicators show that students care about friends who are sick, feel happy when they can share with their friends, and like to be involved in activities to help the implementation of school agendas. However, altruism from the material side is still minimal; this is indicated by the low desire of students to lend goods to friends and neighbors. The desire to help reflect altruism with a low desire to help ask for the desire to eliminate distress and achieve certain satisfaction [45]. But, desire to help is also related to altruism [46], and can be an individual cause of altruism behavior [47], especially in altruism behavior in the form of donations both to specific people and to groups of people [48].

The results of previous studies regarding altruism variables that are relevant to this study and also explain the validity and reliability include research [49], which shows that the altruism scale meets the reliability requirements with Cronbach alpha 0.700. Other research was conducted by [50], which showed a reliable altruism scale with a Cronbach alpha of 0.560. Furthermore, Reference [51] research show a reliable altruism scale with Cronbach alpha 0.710. Bevier's research results [52] showed a reliable altruism scale with Cronbach alpha 0.530, then Oh and Sarkisian research [53] showed a reliable altruism scale with Cronbach alpha of 0.649. The results of this study, when compared with the other research results, show that it is also feasible to be used as an instrument to reveal altruism because the analysis results show that the altruism scale in this study has better validity and reliability and is reliable with composite reliability is 0.823 and Cronbach alpha is 0.713. The results of this study are expected to provide an overview of the validity and reliability of the altruism scale especially in revealing altruism in the context of "X" Middle School students in Yogyakarta so that it can be used in research data collection and become a reference in subsequent research related to altruism.

## **5. Conclusion**

Based on the results of the analysis and discussion, it can be concluded that: 1) The altruism scale meets validity

and reliability. 2) All aspects and indicators can form altruism variables, namely aspects of empathy, voluntary, and desire to help. The aspect that has the most dominant influence on altruism is empathy, and the weakest aspect of reflecting altruism is the desire to help. In this study, an altruism scale measurement model was formed, which corresponds to empirical data obtained from subjects at the study site.

## **6. Limitation and Recommendation**

This study has several limitations; among other things this research is limited to the subject of junior high school students in one school, so the results of this study cannot yet be generalized to other school subjects. Another limitation is the age and education level of the subject, subjects in this study were limited to subjects with a junior high school, so this scale cannot yet be used on subjects at other educational levels. The data analysis technique used is to build the model so that the new model can see the suitability of the theory with the subject conditions at the research location. For further research should be able to conduct research with more subjects and a broader scope. Data analysis techniques used in subsequent studies can use other SEM techniques so that models can be tested so that the model formed becomes more adequate.

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