

Developing and Validation of Moral Behavior Styles Inventory

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Abstract

Purpose: The present study was done to introduce an efficient tool in the field of moral behavior. **Material & Method:** method of the study was correlational, its approach was test developing and its population was students of Islamic Azad University- Astara and Karaj branches. The study was conducted in three stages according to topic and was sampled in three steps. First, 328 students of Astara university were selected by the multistage sampling, in the second step 42 students of that university were selected by the available method and in the third step 277 students of Karaj university were selected by the multistage sampling. **Findings:** Data were analyzed by the principal component analysis, Pearson correlational coefficient and confirmatory factor analysis after collecting data by the questionnaire. Three factors structures of the moral behavior styles were extracted using principal component analysis in the first step of the research and named as people-oriented, task-oriented and self-centered. Then, using the Pearson correlational coefficient revealed that scores of the extracted components have acceptable test-retest reliability. In addition to concurrent validity, using confirmatory factor analyzing showed that the three factors structure of the moral behavior styles has acceptable fit whit the collected data, in the third step. **Discussion:** Totally, in the base of results concluded that three components moral behavior styles inventory has acceptable psychometric properties.

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1. Introduction

In the past 20 years, doing research in the areas of morality and promoting it, have significantly been increased (Killen and Smetana, 1999; Power et al., 2007). One important reason for paying attention to this area is the survey results of the Gallup institution that was published in 1994 which showed that more than 90 percent of American citizens are concerned about morality in their society and believed that the first priority of education in schools should be the subject of morality (Power et al., 2007). Morality study is necessary from many aspects for different societies. Because morality is largely determined the nature of the relationship between the individual and society, (Myry and Helkama, 2002) and covers a wide range of human behavior (Doris, 2010). In the definition of ethical behavior, some know it behavior that it is acceptable for the human species and is ethical norms function (Tryvino & et al., 2006), some experts define it as justice, avoid injury to others and no deviation from social norms (Haidt & et al, 1993). It can be concluded based on the above definition that the purpose of ethics, is promotion of social well-being and happiness for all members of society. Because the growth rate of adherence to moral principles, increases equality, fairness, altruism, justice (Godfrey, 2005; George, 2010). Although the purpose of the human societies from codification of rules and regulations in various fields is the natural tendency of man to justice and equality, however, based on the motto of the University of Pennsylvania, many experts believed that laws without morals are worthless (Descioli & Kurzban, 2009).

2. Research Background

In terms of Kohlberg's opinion, morality has three dimensions: the cognitive, emotional and behavioral dimensions (Bandura, 1999). Behavioral dimension of morality refers to a wide range of behaviors. Albert Bandura mentioned its proactive and inhibitive aspects and believes that proactive morality is determined with doing positive behaviors that benefit others and inhibitive morality is determined with refraining from behaviors that are harmful to others. According to Bandura's opinion, even inhibitive aspect is positive because prevents from the injury others (Reynolds and Ceranik, 2007). Some researchers put under consideration the intercultural part of the ethical behavior and consider the ethical behavior as those behaviors that are based on widely accepted moral norms (Trevino et al., 2006; Reynolds and Ceranik, 2007).

in general, according to expert's definitions in the field of morality, it can be concluded that ethical behavior was associated with well-being and prosperity of humankind and it is doing or not doing actions that lead to increase well-being or prevent the loss of others well-being. Great interest of the Piaget's cognitive development theory and Kohlberg's moral development to the study of moral judgment and Nyvklbrgyha 's interest to explain its relation to moral behavior, provided the construction area of measurement instrument in the field of moral judgment (Eilertson , 2010) that we can mention to Colby and Kohlberg 's moral judgment interview (MJI), Rest 's definition issue test(DIT), Kamonya and Glenn 's moral Judgment Test (MJT), Padua Moral Judgment Scale (Gibbs et al., 2007).

However, the results of the studies showed that there is only a moderate correlation between moral judgment and moral behavior (Ellertson, 2010). This issue indicates that other factors may be involved in determining ethical behavior apart from moral judgment. For this reason, new models for explanation of ethical behaviors were emerged that are including: Blasi 's self-model(self) (Blasi, 2004), Rest 's moral sensitivity (Power et al., 2007), Schwartz's moral values Schwartz (Schwartz, 2007) and Besser- Jones's moral character (Besser -Jones, 2008) that explanations leded to design different measurement instrument for measuring the variables of morality field. in recent years, despite researchers attention of the morality field to make measurement instrument for measuring the variables of morality field, designing instrument in the field of ethical behavior is considered less and most of the researches of the ethical behavior area, designed situation according to the issue , placed individual (subject) in that specific

situation to observe their behavior (Reynolds and Ceranic, 2007, Gino et al; Perugini & Leone, 2009; Akyeno et al., 2009; Sage & Kavussanu, 2007).

This type of studying and measuring ethical behavior has two major weaknesses: A) with this method of evaluation, only a fraction of ethical behavior will be considered and b) the time and cost –consuming of this type of measurement, limits using some statistical techniques that require high sample size (such as structural equation modeling). Two mentioned limitations highlight the need to build a valid and reliable measurement instrument in the field of ethical behavior. For this reason, the present study acted to develop a pulpy pencils tool in the field of ethical behavior styles and tried to evaluate the it's convergent validity and internal consistency in addition to determining the factor structure. it should be noted that first series (about 150 cases) from behaviors that are ethical in our country culture, were developed for the inventory construction of ethical behavior styles, based on definitions of some experts about ethical behavior (Bandura, 1999; Reynolds and Ceranic , 2007; Trevino et al., 2006) and reviewing some of the sources of Islamic morality field (Dailamy and Azerbaijanis, 1383; Motahari, 1389, Moussaoui Ghorori, 1384), and then the posed questions were given to the several psychology, sociology and philosophy professors and first they were asked to identify which of the behaviors listed in the culture of our country is not considered ethical behavior and secondly, if there is another ethical behavior is not on this list, they suggest. In the following, based on comments of instructors, 45 ethical behaviors were selected and were designed for item. Each of the items of the participants wanted to respond in a range of 5 degrees (1= not at all, 2= rarely, 3= sometimes, 4= most of the time, 5= always).

3. Method

The study was practical and was done with testing approach. That is why, researcher selected statistical sample in the three stages. The first sample was 328 individuals (162 females) who were from Islamic Azad University students of Astara that the purpose of their selection was the implementation of principal component analysis to extract scale factors of moral behavior. The second sample was 42 individuals (15 male) from psychology and nursing students of Azad University of Astara that this sample is available and was selected to assess the test-retest reliability ethical behavior checklist. The third sample was 277 individuals (116 females) who were from Islamic Azad University students of Karaj that were selected by multistage sampling method like the first sample. This sample group was selected with the aim of conducting confirmatory factor analysis and testing results of Principal Component Analysis and evaluation of concurrent validity the scale factors of ethical behavior, which is extracted during the first phase. It should be noted that the mean and standard deviation age of first sample was respectively 25.18, 6.07, and second sample was 22.62 and 5.55 and third sample was 24.48 and 4.73.

3.1. Measurement tools

In this research, inventory measurement instrument of five big personality factors and moral sensitivity and the sub-scale of antisocial personality (PD), Minnesota Multidimensional Inventory (MMPI) were used in addition to the list of ethical behavior styles.

3.1. 1. Five big personality factors Inventory (BFI):

This Inventory was developed by John and colleagues (1990; quoted in Ramstd and John, 2007) to measure the five main personality factors which contains 44 articles and measures five subscales include extraversion, neuroticism, agreeableness, openness versus experience and conscientiousness factors in a five-point scale (from 1=strongly disagree to 5= strongly agree). Reliability coefficient of factors of this questionnaire was desirable in our country and had been reported on average between 0.70-0.82 (Shukri et al., 1386).

3.1. 2. Moral sensitivity questionnaire: this questionnaire was developed from moral sensitivity based on Narvaez conceptualization (2002; quoted by Thierry and Nykolaynn, 2007) and covers seven ethical sensitivity dimensions including : understanding and expression of emotions , adopting the perspective of others, caring through relationships with others, work with group and interpersonal differences, identify the consequences of actions and choices, and retention of social bias and creation of alternatives and interpretations. Moral sensitivity questionnaire consists of 28 items and participants must determine their answer on a five-point scale (from 1= strongly disagree to 5= strongly agree). This tool manufacturer reported Cranach's alpha coefficients of its subscales between 0.54-0.78 and the entire questionnaire 0.87 (Thierry and Nykolaynen, 2007).

3.1. 3. Antisocial personality inventory: in this study, items related to anti-social personality (PD) of (71 items) multilateral Minnesota inventory (MMPI) was used to measure antisocial personality, sub-scale of anti-social personality (PD) of (71 items) multilateral Minnesota inventory (MMPI) includes 19 items that competitor answers it for Yes and No. This inventory is used frequently in Iran and results of the studies showed acceptable psychometric properties of that (Fakhari et al., 1387).

4. Findings

4.1. Exploratory factor analysis: Principal component analysis method and data of ethical behavior inventory with 45 items of the first sample group (With a sample size of 328 people) was used in order to do exploratory factor analysis. Two criteria were considered to find a number of factors. A) Eigen value greater than one and B) Cattell scree plot. It should be noted that according to initial analysis aimed at finding the number of factors, so the rotation type was not specified. Using of Principal component analysis method showed that Kaiser - Meyer -Olyken index (KMO) is equal to 0.776. This indication shows adequate sample size for exploratory factor analysis. Kaiser believes that the KMO value greater than 0.5 is sufficient, between 0.7-0.5 is average, between 0.7-0.8 is well, between 0.8-0.9 is very well, and higher than the 0.9 is excellent (Field, 2013).

4.2. Also, the results showed that Bartlett's test was statistically significant ($p < 0.001$, $\chi^2(DF=435 \text{ and } N=328) = 1815.72$). Bartlett's test of sphericity shows that the correlation matrix of variables forms the identity matrix. Due to the fact that Bartlett's test was significant at the level 0.01. We therefore conclude that the variables are not independent of one another and there is an acceptable level of correlation between them that we can expect to emerge cluster or clusters. In the following, the results showed that there are nine components with Eigen value greater than one that it explains a total of 57.11% of the total variance, in return, the results of the Screen test supported the presence of three components.

4.3. Therefore, analysis was repeated again with the principal component analysis method and by rotation of Varimax, with this difference that these times the number of components were established with Number 3 and the following conditions were considered: A) factor load of the every items on the main component must be greater than or equal to 0.4 , B) factor load of the every items on the unessential component must be less than 0.4 and c) the difference between factor loads of the every items on two subsidiary and main components must be less than 0.2. the results of renewed analysis showed that 8 items of condition A) and 3 items of condition B) and 4 items of condition C) have been violated, for this reason, after removing 15 adversative items of conditions, the analysis was repeated for the third time, table 1 shows factor loads, Eigen value, the amount of explained variance, and Cronbach's alpha of each of the three components.

Table 1: rotated matrix of factors of Ethical Behavior inventory

Items (number of items in the basic scale)	factors		
	1th component	2th component	3th component
1. I try not to skirt issues and other problems (39).	0.682		
2. I respect the opinions and beliefs of others (32).	0.609		
3. I do not reject good works by giving up the others (41).	0.452	0.208	
4. I do not abuse from my conditions and position (45).	0.542		
5. I do not drop my mistakes and guilt on the neck of others (44).	0.540		
6. I do not flinch from the burden of my responsibilities (34).	0.526		0.240
7. I do not postpone tasks Performance (17).	0.520		0.254
8. I do not want to impose my opinion on others (33).	0.510		
9. Sometimes, I want others to ignore some rules for solving my problem	0.489		0.207
10. I do not trifle work that it is vital for others (26).	0.439		0.213
11. I do not interfere in work that it isn't related to me (19).	0.431		
12. I try not to dun neighbors even unwanted (23).	0.429		
13. I am sensitive in keeping honesty (20).	0.409		
14. I try to improve my relations of my people towards each other (14).		0.721	
15. I guide others (1).		0.611	
16. I tried to console people that terrible something was happened to them		0.610	
17. I remind the mistakes of others friendly them (9).		0.567	
18. I encourage others to do good things (40).		0.549	
19. I tried without attention, to help others (25).		0.535	
20. I bother myself for others (13).		0.507	
21. I pass our interests for the benefit of others (6).		0.499	
22. I help poor people (11).		0.491	
23. I apologize for my mistakes (30).		0.454	
24. I borrowed money to others (7).		0.413	
25. I have forced and lied (8).			0.707
26. I am not indifferent to the cleanliness of the city and the environment* (15).			0.684
27. I talk behind the others (24).	0.235		0.592
28. I accuracy in protecting the environment* (16).	0.298		0.589
28. I don't shout on the father, mother, older people even if I am right*(10).			0.525
29. I may eat for false swearing for convincing others (28).			0.524
30. net value	5.058	3.256	1.685
31. Percentage of explained variance after rotation	16.951	10.853	5.618
32. Cranach's alpha	0.814	0.758	0.711

• Note: items which were quoted by *were scored reversely.

Based on the above table, factor loads of the remaining items in all analyzes were larger than 0.4 and all of them have created only one component of factor load larger than 0.4. The share of the first -three components was approximately, 17, 11 and 7 percent, in explaining total variance. also, the internal consistency of each component is calculated using Cranach's alpha method and values of 0.81,0.76 and 0.71 was obtained respectively for the first, second and third components. So, after extracting three components of ethical behavior scale were named according to the content of the items, conscientiousness first component, the people-oriented second component and the autonomy third component. In assessing reliability of Inventory components with retest method with a sample size of 42 people and within distance two performance weeks, the correlation coefficient of the first, second and third components were

obtained respectively 0.53, 0.59 and 0.48 which showed acceptable stability of component scores in two performance stages.

B) Confirmatory factor analysis:

Confirmatory factor analysis using of AMOS 0.7 software and maximum likelihood estimation (ML) was performed to test the validity of ethical behavior checklist three-component structure, which was obtained from exploratory factor analysis. This analysis was conducted Using data from the third sample group (sample size, N= 277). Chi-square study showed that the model does not fit the data, $\chi^2(N=277, df=403) = 766.38, p < 0.05$. For this reason, the chi-square is strongly influenced by sample size, other fitness indicators such as softened chi-square $(\chi^2/df)^{.5}$ was used. Although, there is no clear rule about acceptable value of softened chi-square, however, most experts consider softened chi-square less than 3 as demonstrator of model appropriate fitness (Giles, 2002). Softened chi-square for measurement model in this study was 1.91, that it had indicated acceptable fitness of the model. another study Fitness indexes showed that Comparative Fit Index (CFI) is equal to 0.932, Root Mean Square Error of Approximation (RMSEA) is equal to 0.058, Adjusted Goodness of Fit Index (AGFI) is equal to 0.892 and accordingly, it was concluded that Inventory three-component model of moral behavior styles had an acceptable fit to the data and observed variables have likely necessary power to measure their corresponding latent variables. Figure 1 shows research measurement model and its parameters using standard scores.

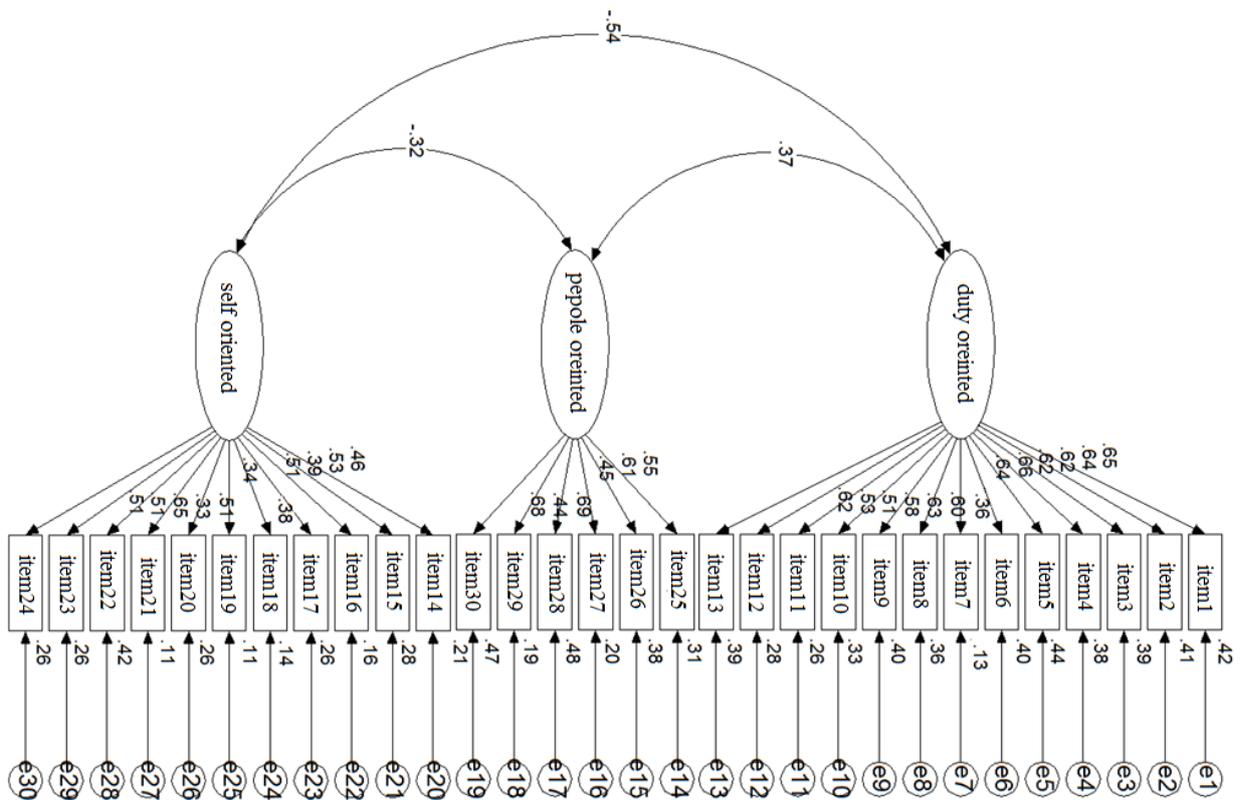


Figure 1. Research measurement model and its parameters using standard scores.

C) Evidence of concurrent validity

Table 2. The correlation matrix of the study variables and the mean, standard deviation and Cranach's alpha coefficient.

	1	2	3	4	5	6	7	8	9	10
1. extroversion	-									
2. agreement	0.12	-								
3. conscientiousness	0.32*	0.42**	-							
4. neuroticism	-0.24*	-0.43**	-0.54**	-						
5. openness	0.43*	0.25**	0.43**	-0.17*	-					
6. ethical sensitivity	0.31**	0.33**	0.36	-0.20**	0.375	-				
7. antisocial personality	-0.14*	-0.26**	-0.40	0.37**	0.102	-0.38**	-			
8. conscientiousness	0.13*	0.13*	0.450^**	0.51**	-0.312	0.103	0.34**	-0.42**	-	
9. people-oriented	0.24**	0.47**	0.331^**	-0.26	0.19*	0.53**	-0.41**	0.54**	-	
10. egocentricity	-0.08	0.31**	-0.29**	0.37	-0.14**	-0.34**	-0.30**	-0.36**	-0.31**	-
11. average	25.11	38.23	32.94	28.49	30.7	34.42	7.84	52.59	38.5	127
12 the standard deviation	5.08	4.90	5.20	6.62	5.99	6.33	2.45	5.11	6.66	3.4
13. α	0.661	0.728	0.685	0.773	0.63	0.886	0.742	0.789	0.76	0.7

* $p < 0.01$ ** $p < 0.05$

According to results of Table 2, with the exception of the correlation coefficient between extraversion and autonomy and openness component and conscientiousness component, correlation coefficients between all factors of the five big factors Inventory of personality, ethical sensitivity and anti-social personality disorder with all three components of ethical behavior is significant. The relationship between neuroticism and antisocial personality based on expectation is positive and significant with two components of conscientiousness and negative people-oriented and egocentricity component. the relationship between factors of agreement, conscientiousness (which are considered as the personality ethic factors) and the moral sensitivity is positive with both People-centered and task-based components and is negative with egocentricity component. based on Cohen's criterions, he believes that the correlation relations smaller than 0.3 is considered weak and coefficients with intensity 0.3-0.5 is considered average and the correlation relations greater than 0.5 is considered strong (Cohen, 1977).

The correlation coefficients among the factors of agreeableness, conscientiousness and ethical sensitivity is average or close to average with to all three components of ethical behavior. It should be noted that according to Table 2, shows that The correlation coefficients between the components of ethical behavior is among 0.32-0.54, it can have concluded that scale components of ethical behavior is acceptable internal consistency. finally, table 2 shows Cranach's alpha coefficients of each components of the ethical behavior scale in addition, Cranach's alpha coefficient of personality, ethical sensitivity and anti-social personality factors that it is among 0.73-0.79 and somehow, it shows the validity of research findings related to internal consistency from the first research sample.

5. Discussion

This study was conducted to introduce the tool in the field of ethical behavior. Finally, using principal component analysis, three components extracted by 30 items and components are named based on the items content respectively to the task-oriented, people-oriented and egocentricity. Based on items content of each of the extracted components can be concluded that likely, people who earn high score in conscientiousness, and respected their rights interact with others and act in accordance with the law.

They probably as people who gained score high on people-centered component, don't pass from their rights in favor of others, however, they were sensitive to the rights of others and they try to live without any cost to themselves and others. Perhaps it can have said that the people who earn high score in this component, probably, they behave corresponding to the second moral level's Kohlberg especially ethics step based on law and order. Kohlberg believes that the conventional level is level from moral development that at it, the person

tries to keep the expectations of families, groups and people, regardless of the its results(Nosy,2001). He stated that people with task-oriented ethical behavior style do behaviors in accordance with the frameworks of the contracts. Second component was named as people-oriented.

From the constituent items of this component can be concluded that people earn a high score in this component, probably, they were altruist and know other problems as their problem and try to help them in solving other problems. They did not expect a reward in helping others and only help them because of a sense of relief and satisfaction that come from helping someone. This behavioral style is the most transcendental style of moral behavior and wan can compare it with the third level of moral development's Kohlberg especially ethic stage based on universal principles. Behavior of people that their moral behavior style is people-centered, was controlled by some internal ideals that they do actions solely on the basis of their true regardless of the reactions of others and conflict with the law and order.

The third component was named as egocentricity style. This style reflects moral preferred growth and it is more similar to the first level of moral development's Kohlberg, it is similar to character institution part of Freud's view. People who their moral behavior style in interaction with the outside world is egoistic, they follow the law and observe the rights of others only for fear of punishment by the authorities as children who are in the second level of Kohlberg's view in terms of the moral development. People who earn higher score in this style, the part of their personality institution in comparison with the other two personality sectors (I and superego) are larger and always, they try to achieve their goals without guilt feeling and with trampling the rights of others. Evidences of construct validity supported from inventory power of ethical behavior Styles in the measurement of three ethical behavior styles in addition to the evidence of the principal components analysis and confirmatory factor analysis. Therefore, the results of concurrent validity showed that two people-oriented and conscientiousness moral behavior styles have positive correlation with agreement and conscientiousness factors and egocentricity style has negative and significant relationship with those two factors. Since the two agreements and conscientiousness factors are moral character factors (Culquitt et al., 2006).

It can be said that designed checklist provides results based on the theory of personality traits. Also, significant and inverse correlation of two people-centered and task-based styles with scores of anti-social personality disorder scale OF questionnaire MMPI supports concurrent validity of ethical behavior styles list. Because that matches the resources of psychopathology, people who suffer from antisocial personality disorder, they ignored as considerable ethical issues and always, they intended to trample laws, regulations and the rights of others (Segal and Hersen, 2010; and Dobbert, 2007). Eventually, the findings of this study showed that two people-centered and task-based styles have positive relationship with moral sensitivity and egocentricity style has negative and significant relationship with it. This finding is also consistent with theories of ethics area which indicates that, people who have high ethical sensitivity, consider ethical principles and standards in different positions (Miriohelekema, 2002, Jordan, 2007, Morton et al, 2006).

Ethical behavior styles inventory is such tests of the obvious goal, because items of this type of test directly question individual's attitudes and acknowledging about inappropriate behaviors (Scott et al., 1989). Against tests of the explicit purpose, personality tests is focused that often, contents of their items isn't explicitly tests of the obvious goal. evidences from meta-analysis studies shows that reliability coefficient of tests of the obvious goal using Cranach's alpha method is on average 0.82 and using the retest method is 0.94(Ones & Viswesvaran, 1998). In the present study, the average Cranach's alpha coefficient was obtained 0.76 for three ethical styles in both the first and third sample and mean of their test-retest reliability coefficient was obtained 0.76 and 0.53 respectively.

Although test-retest reliability coefficient of styles inventory of ethical behavior is somewhat lower than evidence from meta-analysis studies, however, on the basis Cohen's criterions, correlation coefficients greater

than 0.5 are considered strong. moreover, although some researchers believe about the validity of tests of the obvious goal that participants in answering the questionnaire items create a false image of himself (Byle & Holtgraves, 2008), However, another group of researchers based on laboratory findings have shown that if individual responses to the questionnaire related to individual interests, respondent will give unrealistic responses to the items (Donovan Et al, 2003).

For example, evidence shows that individuals can increase or decrease their scores in factors of NEO questionnaire (NEO), which is a personality test to win (Vysovaran and Vanz, 1999). Finally, it should be mentioned that ethical behavior inventory was a clear objective tool and is designed solely for research purposes and its use in other position requires a lot of research. On the other hand, the results of the present study were obtained only based on student's response of two university units (Astara and Karaj), so, generalization of its results to other countries is in the zone ambiguity. Also, researchers also claimed in flow of the interpretation of findings that probably, there is a high correlation between the components of ethical styles inventory and Kohlberg's levels of moral development; however, he didn't present empirical evidence in this field. therefore, based on limits of this study, it is recommended that firstly in the future studies, the reliability and validity of the styles inventory of ethical behavior in other societies was evaluated and secondly items of inventory were designed on the subtle aim and finally, concurrent validity was evaluated by questionnaire of moral judgment.

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