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Research Article

Examining the Psychometric Adequacy of the Conscientiousness Ethics Scale

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Abstract

Background: Moral characteristics are virtues that can affect the quality of different dimensions of people's lives. Conscientiousness is one of the most critical ethical virtues. Therefore, a tool with appropriate psychometric properties must measure this ethical background with other variables. The current research aims to determine the factor structure and psychometric properties (validity and reliability) of the conscientiousness ethics scale.

Objectives: The purpose of the present study was to investigate the psychometric properties of the conscientiousness ethics scale in a group of Shiraz University undergraduate students.

Methods: The undergraduate students in the present study were from Shiraz University; 440 (221 women and 219 men) were selected by the multistage random clustering method and responded to the conscientiousness ethics scale. After entering data into the software SPSS-16, The data were randomly divided into two equal parts; Thus, to perform exploratory factor analysis, Data from the first 220 samples and confirmatory factor analysis were collected from 220 other samples.

Results: The results of exploratory factor analysis showed that conscientiousness ethics is composed of two factors, conscientiousness and trustworthiness. The confirmatory factor analysis also confirmed the two-factor structure of conscientiousness ethics. The values of Cronbach's alpha coefficients also confirmed the instrument's reliability.

Conclusion: In general, the results of this research show the efficiency of the conscientiousness ethics scale; And researchers in the field of moral psychology can use it.

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1. Introduction

Humans have permanently attached importance to ethics as an integral part of life due to their way of life. For this reason, writers, philosophers, and sages have recommended many dos and don'ts for individual and social behavior throughout history. Accordingly, psychologists also tried to improve societal morality (Lee & Misco, 2016; Krek et al., 2019). In this regard, there are different definitions of ethics; among them, we can mention Wong's (2006) definition of ethics, which states: "In the social context, ethics is a system created by humans to work and communicate with each other, and it includes reasoning, logic, and norms". Wang et al. (2020) define morality as "morality constructs the relationship between the self and others, providing a sense of appropriateness that facilitates and coordinates social behaviors." In order to achieve its goal, which is to predict people's ethical and unethical behavior, the psychology of ethics evaluates moral reasoning. The main emphasis in research in moral psychology is how people make judgments in complex moral dilemmas or bottlenecks – in situations where there is no clear right or wrong choice. For example, many psychological types of research on ethics have used Kohlberg's moral dilemmas, as in the Heinz case (e.g., Rest et al., 1999), a situation in which respondents had to decide whether Mr Heinz should steal medicine to save his dying wife or not. In moral dilemmas such as these, moral values related to fairness, justice, care, and loyalty are present, and they are often in conflict. These moral dilemmas are an effective tool for identifying various cognitive and emotional processes in situations where it is difficult to judge the rightness and wrongness of an action (Narvaez, 2010). However, although creating moral dilemmas can be effective for examining moral reasoning, it is possible to understand what predicts more everyday behaviours, where there is broad agreement about the rightness or wrongness of a moral action, which is not helpful. Therefore, recently, instead of examining people's moral reasoning, moral psychologists have turned to examining those personality traits that can predict moral behavior (Cohen et al., 2014), because personality traits are relatively stable and have a better ability to predict people's behavior in different everyday situations (Larsen et al., 2021).

According to recent models, personality traits are divided into temperament and character (Garcia et al., 2020). Temperament relates to automatic emotional responses; it is more hereditary and remains relatively stable throughout life. On the other hand, character refers to self-concepts and individual differences in goals, values, and choices of the individual and the meaning of life. Character is more influenced by sociocultural learning, and it grows throughout life. Each of the dimensions of character and temperament in an interactive network affects the compatibility and accommodation of the individual's life with the community. Psychological health and favourable mental states, and, conversely, preparation for mental disorders originate from the interaction of a person's character and temperament characteristics (Río-Martínez et al., 2020). The differences between people in character traits and temperament create different personalities. The combination of low scores in character traits and high scores in temperament dimensions creates immature, irrational, reactive, and unstable personalities.

On the other hand, the more a person's score in character traits increases and the more balance there is in the temperament scores, the more mental health is increased (Garcia et al., 2020). Some psychologists have conceptualized those biological and acquired personality traits that can predict moral behavior under the title of moral character (Cohen et al., 2014), and some others consider only those acquired personality traits that are related to ethics as the moral character (Khormaei & Ghaemi, 2017).

In the definition of ethical behavior, Cohen et al. (2014) have stated that moral character is a person's willingness and readiness to think, feel, and behave ethically; Or, to put it another way, it is expressed as a subset of individual differences in morality. Funder & Fast (2010) also emphasized the psychological mechanisms underlying these components and enumerated thoughts, feelings, and moral behavior in defining moral character. In addition to the definitions of ethics, various models have been presented about moral character; among them, we can refer to Khormaei & Ghaemi's (2017) model. Based on the theoretical model developed by Khormaei & Ghaemi (2017), moral character includes a network of moral-religious traits and values thought to be influenced by social learning and education. Therefore, it is possible to help people adapt and improve their quality of life by cultivating moral character. Khormaei & Ghaemi's model of moral character (2017) includes eight moral characters based on positive and negative moral philosophy, embedding moral traits and religious values in each of the characters; In other words, this model has introduced eight characters (Etiquette ethics, Conscientious ethics, Pious ethics, Forgiving ethics, Honesty ethics, Compliant ethics, Sensitive ethics, Independence ethics); which is on one side of the axis of every character, moral virtue and the other side is the moral vice. Due to the importance of Conscientious ethics in the occurrence of positive outcomes in different aspects of life (Lee et al., 2020; Shackelford et al., 2008). In the present study, only the psychometric characteristics of Conscientious ethics were examined. Conscientious ethics refers to a range of traits whose core is values based on duty and individual obligations, such as individual responsibility, adherence, punctuality, patience, and discipline, and negation of them, such as laxity and disorder. Khormaei & Ghaemi (2017) generally consider Conscientious ethics as including two components of Conscientiousness and trustworthiness.

Conscientiousness as a personality trait refers to regularity, taking notice of events, moderation, punctuality, perseverance, and being forward-looking (Longley et al., 2017). Research has shown that Conscientiousness, as a powerful ability, predicts being ethical (Huanhuan et al., 2016; Song & Kim, 2018). Conscientiousness is associated with positive outcomes in different aspects of life. For example, in the academic context, conscientiousness is associated with academic achievement (Kappe & Van Der Flier, 2012; Atashafrouz & Araban, 2017), academic giftedness (Mottahedi et al., 2013), help-seeking (Golestaneh & Askari, 2014), and satisfaction of the need for competence (Ahmadian et al., 2011). Also, conscientiousness in the job field is related to better job performance (Barrick & Mount, 1991; Hashemi Sheykhshabani, 2011). In addition, research evidence indicates the relationship between conscientiousness and health-oriented behaviours (Bogg & Roberts, 2004), anger control (Emami et al., 2024), and psychological well-being (Tanksale, 2015). In the family domain, conscientiousness is also related to marital satisfaction (Claxton et al., 2012). All these findings indicate the importance of this personality trait for adaptation in life.

Trustworthiness, another component of Conscientious ethics, is defined as a personality trait, a tendency to behave according to the positive expectations of others over time and under different circumstances (Levine et al., 2018); and it is a calculative reaction to trusting others (Buchan et al., 2008). Researchers have shown that trustworthiness may be the most critical factor in developing and maintaining happy and good relationships (Simpson, 2007; p. 264); Also, this moral character reduces conflicts (Zaheer et al., 1998); It strengthens the positive perception of the individual's relationships (Luchies et al., 2013) And it increases forgiveness after interpersonal conflicts (Molden & Finkel, 2010).

Considerable literature has examined trustworthiness, but the dominant model of trustworthiness is the ability, benevolence, and integrity model of Mayer et al. (1995). According to this model, people are likely to trust those who have high ability (intelligent, competent, capable), high benevolence (kind, caring, empathetic), and high integrity (harmonious, lawful, and ethical). According to this model, trusters judge the ability, benevolence, and integrity of the person they want to trust by using various personality, social, and situational signs. For example, has the person they are trying to trust already kept their word? (Schweitzer et al., 2006); or does he or she have hidden interests; or, in other words, does he or she have a conflict of interest (Sah et al., 2013); and whether the trusted person apologizes for or denies having committed the potential inappropriate behavior (Schweitzer et al., 2015). More recent models seek to identify other personality traits that predict trust (Kim & Cohen, 2015). Levine et al. (2018) show that guilt predicts trustworthiness better than other personality traits and consider interpersonal responsibility the primary mechanism of trustworthiness.

Despite the importance of trustworthiness, the research findings show that various devices and institutions face a fundamental challenge in choosing trustworthy people (Lamb & Joy, 2018). Employing people who do not have a favourable status in terms of trustworthiness causes many problems (Daly et al., 2020); therefore, questionnaire psychometrics that can be used as a preventive action for the selection of trusted people in institutions is considered a necessity. This research defines *trustworthiness* as a character attribute that includes responsibility, commitment, trustworthiness, and loyalty (Khormaei & Ghaemi, 2017).

In general, it can be said that responsibility is considered the central core of the moral character of Conscientiousness (Khormaei & Ghaemi, 2017), which refers to a person's commitment and accountability (Allen & Mintrom, 2010). Responsibility, one of the personality's essential characteristics, can be taught and learned (Yesil, 2013). The importance of responsibility is such that some researchers consider its cultivation essential for being ethical (Kershnar, 2018).

According to the theoretical foundations and the background of the research, it seems necessary to construct and validate a tool to measure Conscientious ethics. While based on the conducted searches, a tool to measure Conscientious ethics has yet to be created and validated. Even in the few foreign studies that have been done on moral characters, the tool of variables close to the research variable (Conscientious ethics) has been used (Cohen et al., 2014; Kim & Cohen, 2015). In response to this need, Khormaei & Ghaemi (2017) designed a questionnaire of moral characters based on the conceptualization made in their model. This questionnaire has sixteen moral characteristics (eight moral virtues and eight moral vices). In conceptualizing the components in Khormaei & Ghaemi's (2017) model of moral characters, teachable traits have been used. This characteristic is one of the advantages of the mentioned model because it allows educational psychologists to carry out interventions.

Examining the psychometric characteristics of essential factors such as Conscientious ethics from the model of the moral character of Khormaei & Ghaemi (2017) can be used in cases where the model and the research problem only require the use of Conscientious ethics, Or there are time and financial limitations on the researcher's path, it will be a way forward and meet the researchers' needs. Generally, it is sometimes necessary to have sub-scales of a questionnaire whose psychometric properties are examined separately. This need is exceptionally high in models where the nature of the factors is very different. It may be necessary to use only one of the model factors depending on the research problem.

The separate validation of the tool for measuring Conscientiousness ethics can also significantly contribute to increasing theoretical knowledge in the field of ethics and moral character because Conscientiousness is of great importance among different moral characters; In such a way that having a high Conscientiousness can prevent negative consequences in various areas of life. For example, in the social context, high Conscientiousness has a negative relationship with less delinquency (Slagt et al., 2015) and, in the occupational domain, with unethical behaviours at work (Kim & Cohen, 2015). In the academic field, high Conscientiousness is related to less academic dishonesty (Lee et al., 2020). At the family level, it negatively relates to dysfunctional behaviours such as marital betrayal (Shackelford et al., 2008). Additionally, Conscientiousness is associated with positive outcomes in various contexts (Larsen et al., 2021; Bogg & Roberts, 2004). Therefore, the validation of this tool can have a new look in psychological research to examine the antecedent role of moral characters in cognitive, behavioural, and motivational consequences. Also, since moral character traits are teachable personality traits, the results obtained from the research in this field can be significant in terms of application as well. Considering the mentioned importance and the existing gap in the research literature on moral character, about the psychometrics of a valid scale to measure the moral character of Conscientious, the purpose of the current research was to operationalize a valid instrument based on the conceptual definition of moral character; to take action to measure this structure. About the goal above, answering the question of "Does the moral character scale of Conscientious (Khormaei & Ghaemi, 2017) have good validity and reliability?" is the main problem of the present research.

2. Objectives

The purpose of the present study was to investigate the psychometric properties of the moral conscientiousness scale in a group of Shiraz University undergraduate students.

3. Methods

3.1. Sample and procedure

The current research is developmental in terms of its purpose and descriptive in its correlational research design. The statistical population of the present study was all the undergraduate students of Shiraz University in 2019-220 academic years, of which 440 people (221 women and 219 men) were selected by multi-stage random cluster method. Kline's (2016) perspective was used to determine the sample size. Kline (2016) suggests that 10 to 20 participants be selected for each parameter calculated in the model; however, in any case, the sample size should be at least 200 people. The way to choose clusters was from among the faculties of Shiraz University six faculties (1- education and Psychology, 2- Law and Political Sciences, 3- Sciences, 4- Engineering, 5- Literature and Humanities, 6- management, economics and social sciences) was chosen randomly. Two educational groups were selected randomly from each faculty, and one class was chosen randomly from each educational group, And all students in the classes participated in the research.

3.2. Research Tools

Conscientious Ethics Scale: The Conscientious Ethics Scale (CES) was designed by Khormaei & Ghaemi (2017), and it evaluates features such as order, foresight, learning lessons, punctuality, moderation, perseverance, responsibility, loyalty, halal awareness and adherence. In the initial

conceptualization of Conscientious ethics, two factors of Conscientiousness and trustworthiness have been included in this scale. CES has 11 items; Items No. 1, 3, 5, 7, 8, and 9 are intended to measure the component of Conscientiousness, and items 2, 4, 6, 10, and 11 are also intended to measure the component of trustworthiness. The scoring of this scale is in the form of a five-point Likert spectrum from entirely true (score 5) to completely false (score 1). Khormaei & Ghaemi (2017) did not provide a report on the psychometric indices of this scale.

3.3. Ethical consideration

All Ethical considerations, consisting of the optionality of participation, confidentiality of information, and freedom to withdraw from the studies even before finishing the questionnaires, had been observed. It is also worth mentioning the criteria for entering the research included consent to participate and study at Shiraz University's undergraduate level. The criteria for exiting the research included the need for more desire and enthusiasm to participate in research and study in Shiraz University's postgraduate studies. In the current research, to collect information, conscientiousness ethics scale was used.

3.4. Data analysis

In order to investigate the psychometric properties of the conscientiousness ethics scale, in addition to considering the exploratory factor analysis method, the confirmatory factor analysis method was used to estimate the construct validity of this scale. Descriptive data analysis and exploratory factor analysis were performed with SPSS-16 software, and confirmatory factor analysis was done using AMOS-24 software.

4. Results

4.1. Demographic Information

The descriptive statistics of the research sample were as follows: The average age of the participants was 20.28 years. The age range of the participants was also between 18 and 28 years. 49.77% of the participants were male, and 50.23% were female. Other descriptive indicators such as mean, standard deviation and correlation coefficients of variables are presented in **Table 4**.

4.2. Results Tables

In order to investigate the construct validity of the conscientious ethics scale, exploratory factor analysis was first performed. For this purpose, the data set was divided randomly into two separate equal samples. The data from the first 220 samples were used to perform exploratory factor analysis. Exploratory factor analysis was performed using SPSS-16 software. Before performing the exploratory factor analysis, preliminary screening of the data (examination of outliers and missing data) was done. The results of this screening showed that some of the questionnaires had unanswered items and to solve this problem, the replacement average was used. Because the missing data in none of the variables was more than five percent of the total data (Meyers et al., 2016). Also, the Explore command was used to identify outliers; the results showed no outlier data in any research variables.

Before conducting the exploratory factor analysis, the Kaiser-Mayer-Olkin-KMO index was used to investigate the adequacy of the sampling of items. In this research, the size of the KMO index was obtained as 0.82. The result of the KMO index indicates the adequacy of the sampling

of the items (Meyers et al., 2016). Also, Bartlett's test of sphericity was used to test the null hypothesis that there is no correlation between the items. The results showed that Bartlett's test of sphericity 2006.0 with a degree of freedom (120) is significant at the level (0.001). The significance of Bartlett's sphericity test shows a sufficient correlation between the items and the possibility of performing exploratory factor analysis (Meyers et al., 2016). According to the screen diagram, the eigenvalues and percentage of variance explained by each of the factors, two factors of Conscientiousness (6 items) and trustworthiness (5 items), based on the principal components method and Varimax rotation (Hayton et al., 2004) in line with the initial theoretical conceptualization was extracted. The results of the exploratory factor analysis are presented in **Table 1.** Each item had the highest factor loading on the factor that was theoretically designed for it. All factor loadings were more than 0.32 as the minimum recommended (Tabachnick & Fidell, 2013).

Table 1. The items related to each component and their factor loadings

Item number	Content item	Conscientiousness	trustworthiness
1	I do my work with order and detailed planning. کارهایم را با نظم و برنامه‌ریزی دقیق انجام می‌دهم.	0.81	
3	I have not been bitten by the same hole twice. از یک سوراخ دوبار گزیده نشده‌ام.	0.43	
5	I try to have a plan for all the moments of my life. سعی می‌کنم برای تمام لحظات زندگی‌ام برنامه داشته باشم.	0.75	
7	I observe moderation in my work. در کارهایم حد اعتدال را رعایت می‌کنم.	0.55	
8	I do not postpone my work. کارهایم را به تعویق نمی‌اندازم.	0.77	
9	I consider the consequences before doing anything. قبل از انجام هر کار پیامدهای آن را در نظر می‌گیرم.	0.51	
2	I do the work that is entrusted to me as soon as possible. کاری که به من سپرده می‌شود در اسرع وقت انجام می‌دهم.		0.78
4	Usually, I take care that halal money enters my life. معمولاً مراقبم پول حلال وارد زندگیم شود.		0.53
6	I am severe and persistent in doing difficult and challenging tasks. در انجام تکالیف سخت و دشوار جدی و مُصر هستم.		0.73
10	If I make a promise to someone, I will definitely keep it. اگر به کسی قولی دادم حتماً به آن عمل می‌کنم.		0.75
11	I return what I borrow on time. چیزی که به امانت می‌گیرم را به موقع پس می‌دهم.		0.77
Eigenvalues		4.67	1.46
Explained variance (after varimax rotation)		21.61	14.23
Total variance explained	35.84		

These two factors explain 35.84% of the variance of the conscientious ethics scale. In other words, as mentioned in the above table, this tool has two significant factors with an eigenvalue greater than 1. Conscientiousness factor with an eigenvalue of 4.67, which explains 21.61% of the variance; the trustworthiness factor can also explain 14.80% of the variance with an eigenvalue of 1.97.

The correlation between the components is calculated with each other and the total score to investigate the internal consistency. Examining the correlation between the components shows that conscientious ethics have a moderate correlation with each other (**Table 2**). Hinkle et al. (2015)

state that the necessary correlation between the components of a questionnaire to ensure internal consistency should not be higher than the average value (correlation coefficient lower than 0.70), which can be said that the construct validity of the scale is also verified by the internal consistency method. Also, the correlation coefficient between the components of conscientious ethics with the total score of the conscientious ethics scale is much larger than the correlation between the components of conscientious ethics. These results indicate the construct validity of the conscientious ethics scale (Groth-Marnat, 2003).

The moderate correlation between the two components of the conscientious ethics scale also confirms the scale's differential validity. In order to verify the discriminant validity, it is expected that the factors have a meaningful relationship with each other; However, the relationship between them is not higher than the average correlation (correlation coefficient lower than 0.70, stated by Hinkle et al., 2015). The average correlation between the two factors of the scale confirms that the two factors are related to each other and are sufficiently distinct from each other.

Table 2. Mean, standard deviation and correlation coefficients between scale components (N=440)

Variables	Mean	Standard deviation	1	2	3
1-Conscientious ehics	40.63	6.25	1		
2- Conscientiousness	20.09	4.27	0.86*	1	
3- Trustworthiness	20.58	2.74	0.71*	0.49*	1

*p<0.01

Confirmatory factor analysis was used to investigate the validity of the factorial structure of the conscientious ethics scale. Before conducting the confirmatory factor analysis, its assumptions were examined first. The normality of the data is the essential condition of using confirmatory factor analysis. In order to investigate the univariate normality of the data, skewness and kurtosis were used. The skewness of some variables (items) was in the negative range from - 0.08 to - 1.48, and the skewness of one of the variables was positive and equal to 0.003. The standard deviation of the skewness of all variables was 0.12. The kurtosis of some variables was positive in the range of 0.003 to 2.22, and the kurtosis of some variables was negative from 0-.28 to - 0.54. The standard deviation of the kurtosis of the variables was 0.23 or 0.24. If the values of the skewness column for samples of more than 100 people are in the range of -3 and +3 and the values of the kurtosis column are in the range of -10 and +10, then the default of normality is established (Meyers et al., 2016); In this study, the assumption of normality of data distribution based on the criteria mentioned was maintained. Also, the multivariate normality of the data was investigated using the standard probability diagram. The Q-Q diagram also showed that all data are close to the diagonal line. Thus, the normality of the distribution of the variables was confirmed. In this way, the structural equation modelling assumptions were examined and verified. Therefore, to validate the factorial structure, the conscientious ethics model obtained from the exploratory factor analysis was drawn in the AMOS-21 software and tested using the second sample data and the maximum likelihood estimation method. Figure 1 show the research model tested. Confirmatory factor analysis results are reported in **Table 3**.

Table 3 shows the standard factor loading, t value, and the percentage of variance explained for each factor's indicators. The value of t and its significance is the evaluation index of the

relationship of each indicator with the corresponding factor. A t value greater than 1.96 indicates the significance of the relationship of each indicator with the corresponding factor; based on this, in the model of conscientious ethics, all indicators are related to their factors. **Table 4** provides the model's fit indices; the obtained values indicate that the model fits well with the data.

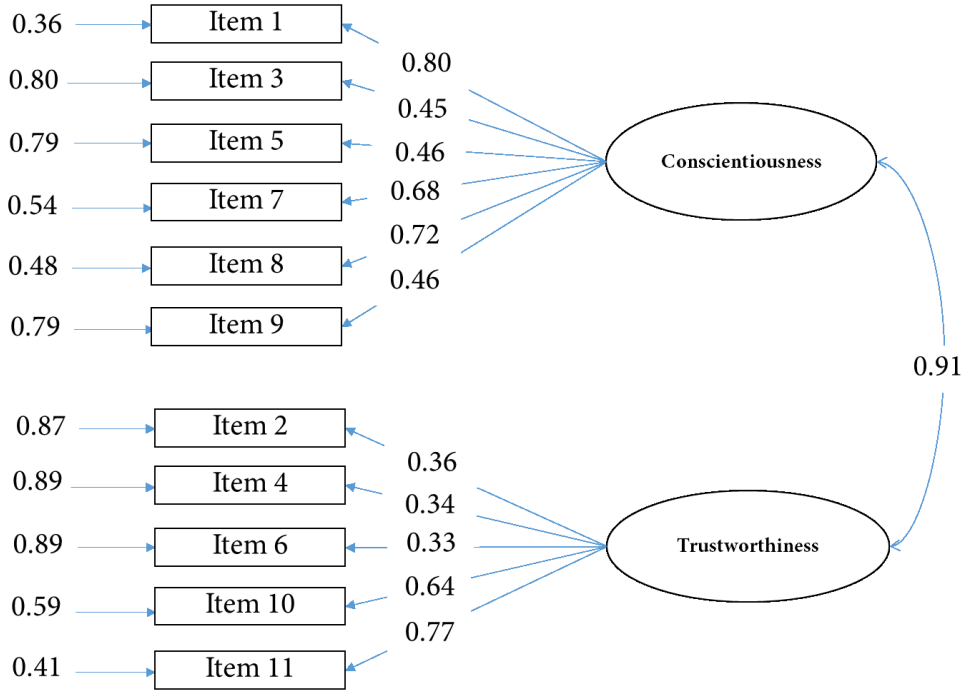


Figure 1. Tested two-factor model of Conscientious ethics

Table 3. Analysis results of the measurement model and partial evaluation index

Construct	Indicator	Standard coefficient	t value	R^2
Conscientiousness	Item 1	0.80	--	0.64
	Item 3	0.45	8.30	0.20
	Item 5	0.46	9.01	0.21
	Item 7	0.68	13.56	0.46
	Item 8	0.72	14.92	0.52
	Item 9	0.46	9.16	0.21
Trustworthiness	Item 2	0.40	--	0.13
	Item 4	0.39	5.13	0.11
	Item 6	0.33	3.70	0.11
	Item 10	0.64	5.62	0.41
	Item 11	0.77	5.76	0.59

Table 4. The value of the fit index of the Conscientious ethics model

index	χ^2/df	TLI	NFI	CFI	RMSEA	PCLOSE
model value	2.49	0.94	0.94	0.96	0.06	0.18
optimal value	3>	0/90<	0/90<	0/95<	0/08 >	0/05 <

Cronbach's alpha coefficient was used to investigate the reliability of the conscientious ethics scale. Cronbach's alpha coefficient was 0.81 for conscientiousness, 0.70 for trustworthiness and 0.83 for the entire scale. It is worth noting that no item would increase the scale's reliability by removing it.

5. Discussion

The primary aim of this study was to examine the psychometric properties of the moral character scale related to conscientiousness. The results indicated that the conscientious ethics scale possesses both validity and reliability. Exploratory factor analysis, confirmatory factor analysis, and significant correlations among the components and the total score demonstrate that the scale consists of two key components: conscientiousness and trustworthiness. The scale shows good validity for measuring conscientious ethics. To assess the reliability of this tool, Cronbach's alpha coefficient was utilized. A Cronbach's alpha coefficient greater than 0.70 is generally regarded as an acceptable level of reliability for research purposes (Cicchetti, 1994), indicating that the scale has good reliability. The findings suggest that the conscientious ethics scale is a promising instrument for evaluating the conscientious ethics of undergraduates. Its psychometric properties are suitable, and its causal structure contributes valuable insights into the theoretical framework of moral character concerning conscientious ethics.The validation of the conscientious ethics scale achieved in this study offers a fresh perspective in the field of ethical psychology, enabling researchers to investigate how moral character in terms of conscientious ethics relates to other variables. Furthermore, this validated scale allows for the exploration of the antecedents of conscientious ethics within moral character research.

6. Limitation and Recommendation

Due to the teachability of character, future research results can be the basis of practical training. Because moral character forms part of human traits that affect academics (Jia et al., 2019; Converse et al., 2019) and career outcomes (Cohen et al., 2014; Kim & Cohen, 2015). The construction and validation of tools to measure other moral characters should be on the agenda in future research. Also, since the level of conscientious ethics in different ages, different groups and different cultural contexts have differences from each other, It is suggested to carry out studies using the scale of the moral character of conscientious ethics with different age groups (for example, teenagers to old adults), different social groups (for example, students, Graduate students, and employees) and different cultural backgrounds; With this knowledge, the moral character scale of conscientiousness can be developed according to specific groups.

7. Conclusion

In short, the results of this research show the validity and reliability of the conscientiousness ethics scale; which can useing to measure this moral character in undergraduate course students.

8. Author Contributions

All the research was done by the researcher.

9. Ethical moral code

This article is the result of the researcher's independent research.

10. Acknowledgment

The researcher considers it necessary to sincerely thank all the students who made it possible to conduct this research with their participation.

11. Conflicts of interest

No conflicting interest

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