Providing a Model for Explaining the Impact of Achievement Goals, Social Comparison, Cognitive-Emotional Trust, and mismatch between effort and reward on student cheating behavior

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Abstract

Background

cheating is one of the forms of abuse that has become one of the biggest concerns of educational institutions. Therefore, the aim of the present study was to Provide a model for explaining the impact of achievement goals, social comparison, cognitive-emotional trust, and imbalance between effort - reward on student cheating behavior.

Methods: Structural equation modeling was the method used in this research. The statistical population of this study consisted of 384 students selected from male second- high schools in 4 districts of Tehran in the academic year 2017-2018. According to Morgan table, the sample size was specified; and cluster random sampling method was used for sample selection. Achievement Goals Questionnaire, developed by Migli et al., 2000; Social Comparison Scale by Chan and Parandrgst, 2007; Cognitive -Emotional Trust Scale by Yang and Mohsedler, 2010; Effort-Reward Imbalance Questionnaire by Sigrist, 2010; and cheating Behavior Questionnaire by Newstead et al., 1996 were applied for collecting data. For data analysis, Pearson's correlation with SPSS 20 and Amos 24 (α = 0.05) were used.

Results: A significant positive correlation was found between avoidance (r=.560, P <0.01), performance (r = .329, P <0.01) and cheating behavior.Whearas, there was a significant negative correlation between avoidance subscale and cheating behavior (r =-429, p <0.01). Mreover, there was no significant relationship between imbalance effort-reward and cheating behavior. However, emotional trust (r=.391, P <0.01) and cognitive trust (r=.145, P <0.01) were positively correlated with cheating behavior.

Conclusion: The results obtained in this study indicated that social comparison and cognitive-emotional trust variables have the power to explain the scores of cheating behavior. However, the other two variables of this study and model did not show a significant relationship with it..

Key Words: Achievement goals, cheating behavior, cognitive-emotional trust, inconsistency between effort and reward, social comparison.

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INTRODUCTION

Cheating has become a major concern and a common and alarming problem in educational settings (1). Cheating is the intentional use or attempt to use unauthorized materials, information or study in any scientific work that is presented to obtain a grade or score; Thus, such behaviors include using secret notes or copying the work of others during an exam or unauthorized collaboration in an exam, quizzes, extracurricular activities, or a project, etc., without permission are examples of cheating (2-3). However, no specific percentage can be determined for the prevalence of cheating. Numerous studies in different countries have shown that cheating is not specific to a course, a university or a country and is seen all over the world (2-3). One of the motivational factors affecting student cheating behavior is achievement goals. Goal Progress Theory (4) assumes that students' goals are an important predictor of progress-related processes and outcomes. The three most commonly studied achievement goals are mastery goals, approach-performance, and avoidance-performance goals. Students with mastery goals focus on developing competency and skills in their homework. Students with approach-performance goals focus on demonstrating their worthiness towards others, while students with avoidance-performance goals focus on avoiding appearing incapable of others (5). Studies that have examined academic cheating have shown that academic achievement goals affect student cheating behavior (6, 7).

Another variable influencing student cheating behavior is social comparison. According to social comparison theory, individuals tend to compare themselves to others, and this comparison can take place between groups or between individuals. Individuals can compare themselves with those who are inferior (in order to boost self-esteem) or with those who are better than them (in order to draw an ideal pattern) (8). Students who engage in social comparisons may engage in cheating behaviors in order to boost their self-esteem or in order feel superior or not inferior to their peers (9-12). It is assumed that the variable of trust also affects the behavior of cheating. Trust is the trusting person's desire to become dependent on another person based on the belief that he or she is worthy, open-minded, considerate, and credible (13). McAllister (14) has experimentally tested the distinction between two forms of trust. The first form of trust is based on emotion, which refers to the mutual attention and importance between individuals; and the second form of trust is based on knowledge, which refers to the reliability and competence of the other party. Trust is important in interpersonal relationships (15). This importance has been emphasized in previous marketing research (17, 16, 12). According to the pattern of inconsistency between effort and reward, the efforts made by students are part of a social contract that must be balanced with sufficient reward (18). An imbalance between the efforts made and the rewards received may lead to negative consequences such as cheating behavior (16). In other words, if students feel that there is no coordination between their efforts and their rewards, they may reduce their efforts and engage in cheating behaviors to achieve their educational goals (18).

In a study on student cheating behavior, Balantine et al., in 2018, found that a superficial approach to learning has a significant relationship with cheating behavior. A deep and strategic approach to learning leads to a reduction in cheating behavior (19). Alt, during his research in 2015 showed that the experience of educational justice is negatively correlated with academic cheating (20). Cole's study in 2014 also showed that attitudes,

religiosity, and achievement goals influence cheating behavior (21). The findings of Ma et al., in 2013 showed that organizational deterrence and individual performance have a negative effect on cheating, while perceived personal pressure, peer cheating and extracurricular activities have a positive effect on it (2). The statistical results of several studies can also indicate the need to pay more attention to cheating in the educational environment, including the study of McCabe et al., published in 2006 which showed that 70% of students had cheated at least once. Failure to pay attention to cheating has many negative effects on the society in which it takes place, such as reduced social trust, increased corruption, inefficiency, etc. In the educational environment, negative effects such as disorder and lack of proper qualified learning, pervasiveness of injustice, and general inconsideration of ugliness of cheating, etc. have been also mentioned (22).

What the present study intends to investigate is of paramount importance, because past cheating can be a strong predictor of future cheating. Therefore, there will be many problems if the students who are the future-makers of the country are not committed to moral practices in education. It is hoped that the present study can take a small step to fill the research gap in this field of research in order to identify the factors affecting scientific cheating and the results will be effective for preventing scientific cheating. The purpose of this study is to provide a structural model of achievement goals, social comparison, cognitive-emotional trust and mismatch of effort and reward on students' cheating behavior. The main hypothesis of the research is that: the structural model of achievement goals, social comparison, cognitive-emotional trust and mismatch of effort and reward on students' cheating behavior has a good fit. The form of the conceptual model of research is shown in Figure (1).
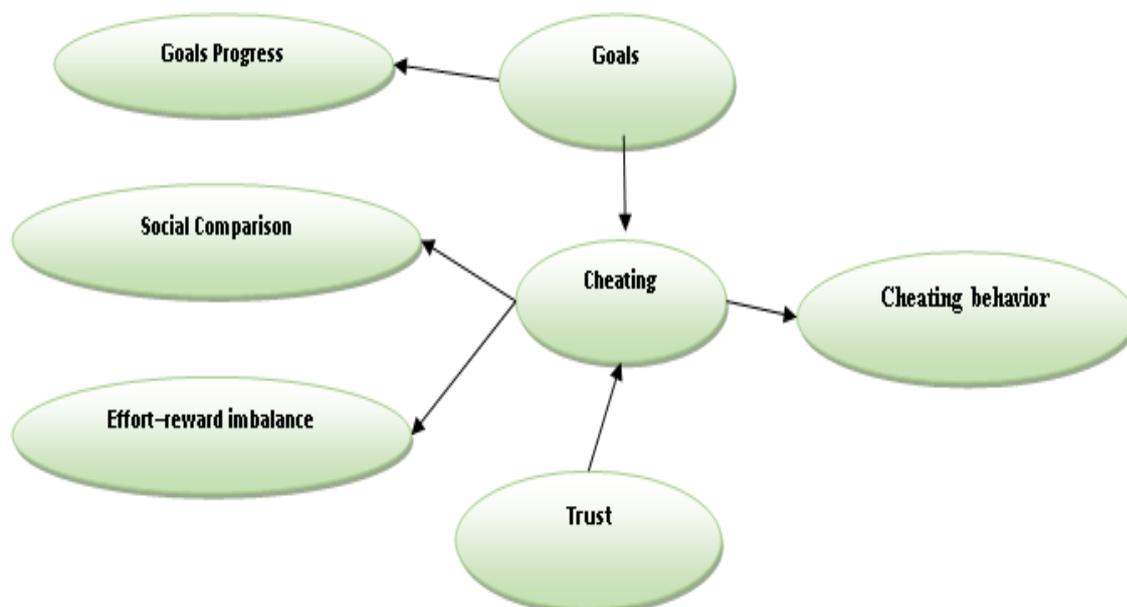

Figure 1: Figure of the conceptual model of the research

2-1. Study design and population

The statistical population in this study includes all male high school students in Tehran province in 2017-18. The participants were 384 students who were selected from the statistical population using multi-stage cluster sampling method. Morgan table was used to estimate the sample size required for the present study. By referring to the table, it was determined that 384 subjects were sufficient for a population of 100,000.

2-2. Methods

2-3. Measuring tools: validity and reliability

Data were collected using Migli et al.'s Achievement Goals Questionnaire (23), Chan & Prandergast's Social Comparison Scale (24), Young & Mosshedler's Cognitive-Emotional Trust Scale (25), Sigrist's Reward and Effort Imbalance Scale (26) and Cheating Behavior Questionnaire by Newstead et al. (27).

Achievement Goals Questionnaire: This questionnaire is developed by Migli et al. (23). It has three sub-goals of mastery, avoidance goals and performance goals. The questionnaire consists of 17 questions based on a five-point Likert scale. Questions 1 to 6 are related to Objective goals, questions 7 to 12 deal with Functional goals, and questions 13 to 17 consider Avoidance goals. There are three sub-tests of goal orientation, namely; Skills, practice-approach and performance-avoidance that each subscale includes 6 questions, respectively. The minimum and maximum scores for each subscale are 1 and 42, respectively, and the minimum and maximum scores for the whole questionnaire are 1 and 126, respectively. This questionnaire has been validated in Iran in a study conducted by Visani et al. (28); and they have reported the reliability of the questionnaire, as 0.81 based on Cronbach's alpha coefficient.

Social Comparison Questionnaire: Chan and Prendergast's Social Comparison Questionnaire (24) was used to measure social comparison among the participants. It consists of 6 questions based on a five-point Likert scale. The subjects were asked to answer the questions in a 5-point Likert scale, including Disagree (1), Somewhat Disagree (2,) I Have No Opinion (3) Somewhat Agree (4 (and Agree (5). This questionnaire has been validated in Iran by Sepah Mansour et al. (29). In their study, the reliability of the questionnaire based on Cronbach's alpha coefficient has been reported as 0.92. Cognitive and Emotional Trust Questionnaire: Young and Mohsedler (25) designed the Cognitive and Emotional Trust Questionnaire, which measures two sub-cognitive and emotional trust questionnaires. The subscale of cognitive trust is from question 1 to 5 and the subscale of emotional trust is from question 6 to 10. The questionnaire consists of 10 questions based on a five-point Likert scale. The lower limit of scores is (10), the average limit of scores (30), the upper limit of scores (50). Scores between 10 and 20 are considered as weak, scores between 20 and 40 as high, scores above 40 as very high, in regard to the amount of the variable. The questionnaire has been validated in Iran by Mohammadzadeh et al. (30). In the mentioned research, the reliability of the questionnaire has been reported as 0.93based on Cronbach's alpha coefficient.

Reward and Effort Imbalance Questionnaire: Seagrist (26) designed this questionnaire. It consists of 16 closed-ended questions based on a four-point Likert scale (strongly disagree, disagree, agree, strongly agree), from which the items 5, 6, 7, 13 are scored inversely. The cut-off point for determining the equilibrium is number one. The higher the ratio is than one, the greater the imbalance. The questionnaire has been validated by Yadegarfar et al. (31), in Iran. And its

Cronbach's alpha reliability has been reported as 0/92. Cheating Behavior Questionnaire: This questionnaire, designed by Newstad et al. (27), is comprised of two subscales and 21 items. The subcales include cheating in homework and cheating in exams. Scoring in this questionnaire in based on a 5-point Likert scale consisting of completely agree with the score (2) agree (1), have no opinion (0) disagree (-1) and completely disagree (-2). 10 items are specified to the first factor and 11 items to the second factor. These two factors have been obtained in the exploratory factor analysis of the present study. Validity and reliability are reported based on Cronbach's alpha coefficient of 0.89.

2-4. Data Collection

Prior to data collection, the city of Tehran was divided into 4 districts: north, south, east and west. 5 schools and two classes from each school were selected to reach 348 samples. This number was determined based on the modeling method in which a sample size of 200 to 400 is recommended for studies with 5 to 10 variables (Pasha Sharifi, 1389). The authorities of the five randomly selected schools were informed about the study and the required permissions were obtained. In the next stage, from each class, 8 students (boys) from the fields of experimental, mathematics and humanities in the tenth, eleventh and twelfth grades were randomly selected. After selecting the subjects, they were asked to answer the questionnaires according to their personal opinion. Due to the large number of questionnaires, the students submitted the filled questionnaires to the school office after two days and the researcher received them at the next visit.

2.5-Ethical consideration

Ethical considerations in this study, included students' informed consent to complete the questionnaires, as well as maintaining confidentiality and confidentiality of personalities and information of the sample were fully observed in the implementation of the study. The present article is taken from the doctoral dissertation of the first author in the field of educational sciences with the approval number 101470702971001/98, Vice Chancellor for Research, Faculty of Psychology and Educational Sciences, Islamic Azad University, Central Tehran Branch.

2-6. Inclusion and exclusion criteria

Inclusion criteria included studying in the first three years of high school, cooperation and informed consent to participate in research, and having complete mental health based on a counseling file; Exclusion criteria included unwillingness to cooperate and having submitted distorted and incomplete questionnaires.

2-7. Data Analyses

In order to analyze the data, a descriptive statistics including frequency distribution, mean, and standard deviation were used. It should be noted that the process of descriptive statistics analysis was performed by SPSS-22 statistical software. In the inferential section, according to the type of research, Pearson correlation coefficient test was performed to determine the normality of the data, confirmatory factor analysis to check the validity of research tools and to test the research model through Structural Equation Modeling (SEM), using Analysis of Moment Structures (AMOS) -24 software.

3- RESULTS

Demographic data analysis showed that the participants whose mothers had a diploma and lower education included 188

(37.5%) of the students (only boys) in the sample group, 150 (30%) of the participants' mothers had a bachelor's degree; and 162 (32%) had a master's degree or higher. In regard to the fathers' education level, 184 (36.8%) had a diploma and lower education, 163 (32.6%) had a bachelor's degree, and 153 (30.6%) had a master's degree or higher.

42.8% of the sample group lived in families with moderate economic status, 48.4% enjoyed above-average economic status, and 8.8% had affluent status.

The results of Table 1 show that among the components of achievement goals, the highest average is related to the performance goal.

To study the structural equation model, one of the most important assumptions is the number of factors used in the model. Supported by the ultimate SEM model, structural equation modeling involves a family of multivariate statistical methods that simultaneously investigate the relationships between apparent and hidden variables or indirectly through the measured variables.

Table-1: Descriptive findings

Variables	Mean ±SD	Skewness	Kurtosis
learning	13.36 ±2.60	.485	.730
Performance	19.42 ±2.83	.024	-.436
Avoidance	17.13 ±3.91	-.319	.371
Social Comparison	18.98 ±2.44	-.131	-.496
Effort-Reward Imbalance	38.49 ±3.65	-.044	-.067
Emotional Trust	9.22 ±1.89	.173	.647
Cognitional Trust	8.33 ±1.57	.218	.407
Cheating Behavior	64.29 ±9.02	.381	.499

In the table above, index x2, degree of freedom, comparative fit index (CFI), and root mean square error approximation (RMSEA) are used to fit the model. The operating load range was from -0.16 to -.50. Also, the results of statistical scales of fit indices (GOF) showed a Chi-square χ^2 (df = 26) = 109.507, which was significant at the level acceptable value of 0.90 and suitable for showing a fit. Moreover, the approximate error (RMSEA) = 0.076 was in the acceptable range. The results of the fit indices can be seen in Table 2.

One of the assumptions of structural equation modeling is the normality of the multivariate distribution. For this purpose, the AMOS software uses the multivariable Kurtosis coefficient of Mardia. The value of the Mardia coefficient for the present study is 2.90, indicating that the assumption of multivariate normality is accepted. Since path analysis is based on a linear correlation between variables, the linear correlation matrix among research variables is reported in this section.

Table-2: Structural equation model fitting indices

Chi-square	DF	P	cmin/df	GFI	IFI	CFI	RMSEA
109.507	26	<0.001	4.212	0.955	0.898	0.906	0.076

DF: Degree of freedom,GFI: Goodness of Fit Index, IFI: Incremental Fit Index, CFI: Comparative Fit Index ,
RMSEA: Root Mean Square Error Approximation

The results of Table 3 show that there is a significant positive correlation between learning scales (r=.560, P <0.01) and performance (r = 329, P <0.01) with cheating behavior. Moreover, there is a significant negative correlation between cheating behavior and avoidance subscale of achievement goals (r =-429, p <0.01). In other words, avoidance achievement goals with negative correlation and learning and performance achievement goals with positive correlation are significantly correlated with cheating behavior, which are, respectively, considered as strong and moderate correlations. Furthermore, a moderate positive correlation can be observed between social comparison and cheating behavior (r=399, P = 0.01). In other words, along with the increase in social comparison, cheating behavior also increases. In this study, no significant relationship was observed between imbalance effort-reward and cheating behavior (r = .34). Finally, as can be seen in the table, there is a significant positive correlation between emotional trust (r=.391, P <0.01) and cognitive trust (r=.145, P <0.01) with cheating behavior, which are, respectively, medium and weak correlations. In other words, although emotional and cognitive trust is related to cheating behavior, this variable is more strongly related to the emotional trust.

Table-3: Matrix of correlation between achievement goals (proficiency, performance, avoidance), social comparison, an imbalance effort-reward, trust (cognitive and emotional) and cheating behavior

1	2	3	4	5	6	7	8	8
learning	1							
Performance	.006	1						
Avoidance	-.754**	.287**	1					
Social Comparison	.448**	.277**	-.356**	1				
Effort-Reward Imbalance	.323**	.156**	-.330**	.350**	1			
Emotional Trust	.029	.668**	.115*	.285**	.243**	1		
Cognitional Trust	.138**	-.158**	-.372**	-.059	.262**	.063	1	
Cheating Behavior	.560**	.329**	-.429**	.391**	.145**	.399**	0.34	1

**P<0.01,* P<0.05*

In order to evaluate the research measurement model (Figure 2), a confirmatory factor analysis was run.
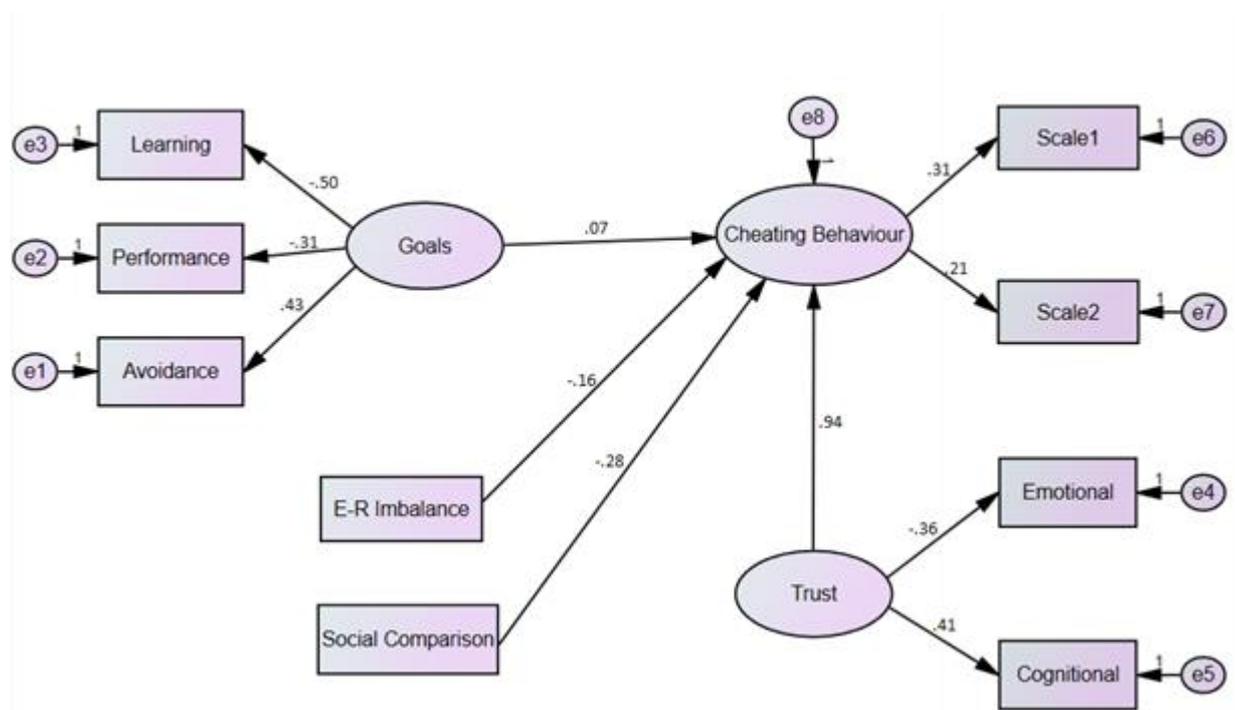
Figure-2: The proposed model of structural equations for the relationship between variable

In the Table 4, achievement goals were not significantly affecting the cheating behavior (standardized path = 0.072, t = 0.376, and P=0.707). Furthermore, no significant effect of imbalanced effort-reward on the cheating behavior was found (standardized path= -0.156, t = -1.301, and P=0.193). In addition, there was a significant relationship between social comparison and cheating behavior (standardized path = -0.285, t = -2. 264, and P= 0.024). Besides, there was a significant relationship between cognitive - emotional trust and cheating behavior (standardized path = 0.943, t = 2.402, and P= 0.016). In other words, social comparison and cognitive-emotional trust variables have the power to predict the scores of cheating behavior. Furthermore, the other two variables of this study and model did not show a significant relationship with it.

Table-4: The direct effect between exogenous and endogenous variables in the hypothesized model

Relationships	Standardized weight	Std Error 2	C/R	P
Progress Goals -> Cheat Behavior	0.072	0.187	0.376	0.707
effort and reward imbalenced -> Cheating behavior	-0.159	0.021	-1.301	0.193
Social Comparison -> Cheating Behavior	-0.285	0.063	-2.264	0.024
Cognitive and emotional trust -> Cheating behavior	0.943	0.611	2.402	0.016

DISCUSSION

The purpose of the present study was to develop a structural model on the effects of achievement goals, social comparison, cognitive-emotional trust and mismatch of effort and reward on students' cheating behavior. Regarding the main hypothesis of the study, it was revealed that achievement goals and inconsistency, as well as effort and reward were not significantly correlated with student cheating behavior, wheras the social, cognitive and emotional comparison was significantly correlated with student cheating behavior; and, thus, had the power to predict cheating behavior scores.

The results showed a significant relationship between achievement goals (mastery, performance and avoidance components) and students' cheating behavior. Thus, mastery and performance scales have a positive and significant correlation with cheating behavior and avoidance scale has a significant negative correlation with cheating behavior in students. Anderman and Vaughn (6) Ratinger (32) and Park et al., (33) found similar findings to the results of this study. Anderman and Vaughn (6) have focused more on cheating behavior and have shown in their findings that although perceived external goal structure and perceived proficiency affect beliefs about cheating, they are not related to cheating behavior. These findings are important because the goal and skill structure somehow reflect the goals of progress, which was also shown in this study to have no significant effect on cheating behavior; the findings of Retinger (32) are also consistent with the findings of the present study. Because the results of that study showed that self-concept, attitudes of neutralizing challenges, focusing on community-friendly responses to cheating and embarrassing students have an effect on cheating behavior. These variables depict the same components of cognitive-emotional trust and social comparisons. Explaining this finding, it can be said that the level of cheating among students who perceive the educational structure of the school functionalistically is higher than those who did not (34). Brophy (35) states that most classroom learning is product-oriented. Children who focus on the quantity of work and the high volume of these products shy away from the task of learning, and when the emphasis is on correct answers, the absence of mistakes,

errors, and normative success, this productivism soon turns into functionalism. Anderman and Migli (36) in a study revealed that pragmatic goal is positively related to cheating behavior. Shelton and Hill (37) report that when students have functional goals, they are more likely to struggle because they feel progress anxiety.

According to the results of the current study, the correlation between social comparison and cheating behavior is a positive moderate correlation. In other words, along with increasing social comparison, cheating behavior increases. This finding is consistent with those of Gentina et al (9) Bretag et al (10) Fosgaard (11). Explaining this finding, it can be said that earning a lower score and falling behind friends and classmates implicitly creates a feeling of inferiority in human beings. In many cases, a group of friends considers a lower score to be a sign of mental retardation and a person's level of talent, while other factors such as not trying and other problems may have caused this condition. However, in such cases, students may resorts to cheating to avoid humiliation instead of relying on the right path such as more effort and work to make up for the shortfall. The competitive atmosphere between students also fuels this issue. Education experts believe that competition can to some extent lead to academic achievement; however, in recent years we have seen a change in this belief in the education system and efforts are being made to reduce the sensitivity of competition among students. This approach can also be generalized in the higher education system, because the insistence on competition and comparison of students with each other will lead to the formation of immoral approaches (38).

The results showed that there was no significant correlation between cognitive-emotional trust and cheating behavior. In other words, the existence of trust between the teacher and the students does not reduce the cheating behavior of the students. This finding is inconsistent with the results of some previous studies (17, 16, 12). Explaining this finding, it can be said that various educational and personality factors play a role in cheating behavior. Educational factors are factors that affect human beings in their relationships and community atmosphere and play a key role in shaping their experiences. According to the lived experiences of students, the educational factors affecting exam cheating include five categories: weak moral values in the family environment, weak faith, student responsibility, parental expectations, lack of discipline in performing their activities. in explaining the findings of this study, we can refer to numerous studies that indicate the prevalence of cheating in schools and higher education centers, stating that internal factors (educational and personality), affecting cheating, do not have an immediate source and are formed in duration of time; Thus, the role of the family and educational centers is obvious. It can be said that the negligence of the family (which is sometimes due to ignorance) and educational centers regarding their educational roles, can cause anomalies Such as the phenomenon of exam cheating (38).

Furthermore, the results of data analysis showed that there is a significant relationship between the mismatch between effort and reward (emotional trust and cognitive trust) and students' cheating behavior. Thus, emotional and cognitive trust indices have a positive and significant correlation with cheating behavior and this correlation has a stronger relationship with emotional trust. This finding is consistent with the findings of Balantine et al. (19), Penis (21) and Ma et al. (2). Explaining this finding, it can be said that the imbalance between the amount of effort

and the amount of rewards that students receive may lead to negative and harmful stress and consequently dissatisfaction among them (39). The effort-reward imbalance model has been developed by Seagrist (26) and he believes that the imbalance between effort and reward in social services leads to a level of stress and tension. If there is a mismatch between the amount of effort and the amount of reward, a situation called high cost-low profit is created, and this situation leads to student dissatisfaction and lack of effort in the exams, and consequently prefering cheating to effort.

In this research study, there were limitations such as the vastness of the research community and as a result the difficulty of collecting and analyzing data, the withdrawal and refusal of some students to participate in the research, as well as self-report questionnaires that have led to research data bias. Cheating behavior can be recorded using observation methods, and the inability to accurately observe direct cheating behaviors in students is one of the factors that hope to find solutions in future research to best reduce cheating behavior. Since the findings of this study showed that the goals of achievement, social comparison, trust and inconsistency between effort and reward through attitudes toward cheating can affect cheating behavior, therefore, it is suggested that counselors and educators take steps to change Students' attitudes about cheating. Students' negative and inappropriate attitude towards cheating can help them to overcome or minimize the effects of environmental factors.

CONCLUSION

In this study, avoidance achievement goals with a negative correlation and learning and performance achievement goals with positive correlations are related to cheating behavior. In fact, there is a strong correlation between learning development goals and moderate correlation between performance and avoidance achievement goals. Moreover, along with increasing the social comparison, cheating behavior will also increase. In other words, although emotional and cognitive trust is related to cheating behavior, this variable is more strongly related to the emotional trust. Finally, social comparison and cognitive-emotional trust variables have the power to predict the scores of cheating behavior.

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