Iranian Evolutionary Educational Psychology Journal
IEEPJ
University of Hormozgan
Online ISSN: 2588 - 4395
Homepage: https://ieepj.hormozgan.ac.ir

Explanation of Destructive Academic Behaviors Based on Temperament Mediated by Emotional Security and Academic Self-Regulation in Iranian Students

Farhad Khormaei[1]✉, Faramarz Kashkoli[2], Seyed Mehdi Poorseyed[3]

1. Associate Prof Educational Psychology Department, Educational Sciences & Psychology Faculty, Shiraz University, Shiraz, Iran, khormaei@shirazu.ac.ir
2. Educational Psychology Department, Educational Sciences & Psychology Faculty, Shiraz University, Shiraz, Iran
3. Assistant Prof Department of Psychology and Counselling, Farhangian University, Tehran, Iran

Article Info

Article type:
Research Article

Article history:
Received 10 Feb. 2024
Received in revised form 10 Aug. 2024
Accepted 23 Dec. 2024
Published online 01 Sep. 2025

Keywords:
Emotional security,
Disposition,
Academic self-regulation,
Academic destructive behaviors

ABSTRACT

Objective: This study aimed to explain the destructive academic behaviors based on dispositional traits mediated by emotional security and academic self-regulation.

Methods: Participants were 503 (272 girls and 231 boys) high school students selected by multi-stage cluster random sampling. Research tools included Disposition, Emotional security, Academic self-regulation, and Destructive academic behaviors questionnaires. Data were analyzed using structural equation modeling.

Results: Findings indicated that disposition, emotional security, and academic self-regulation had a direct effect on educational destructive behaviors. Disposition had an indirect effect on academic destructive behaviors by mediating role of emotional security and academic self-regulation. In addition, emotional security had a direct effect on academic self-regulation. Therefore, it was concluded that disposition predicts and explains destructive academic behaviors both directly and through the mediation of emotional security and academic self-regulation.

Conclusions: According to the findings of the present study, it is suggested that the mediating role of emotional security and academic self-regulation in destructive academic behaviors should be included in educational, mental health, and research programs.

Cite this article: Khormaei, F., Kashkoli, F. & Poorseyed, S. M. (2025). Explanation of destructive academic behaviors based on temperament mediated by emotional security and academic self-regulation in Iranian students. *Iranian Evolutionary Educational Psychology Journal*, 7 (3), 1-21.

DOI: https//doi.org/ 10.22034/2025.ieepj.7.3.1

Publisher: University of Hormozgan.

DOI: https// doi.org/ 10.22034/2025.ieepj.7.3.1

Introduction

Destructive academic behaviors are difficult behaviors that hurt others more than the individual himself or herself while each plays an important role in the educational status of students. Destructive academic behaviors include academic procrastination, academic dishonesty, academic status violations, and academic disobedience, which are defined briefly below. Procrastination is one of the common behaviors that almost all people experience sometimes in their lives by putting off their responsibilities or tasks needed to be completed in a certain time (Ozer & Yetkin, 2018). Academic procrastination means the predominant and permanent tendency of learners to postpone academic activities (such as postponing the study of lessons until the night before the exam) (Erdemir, 2019). Academic dishonesty is comprised of a very wide range of immoral and illegal behaviors such as lying, defrauding, cheating on exams, stealing scientific (Plagiarism) and literary theft, using fake information, falsifying scientific information, destroying the scientific work of others, etc. (Rusdi et al., 2019). Law-breaking behavior is a manifest form of anti-social behavior that includes extrinsic acts such as hostility, theft, and fraud (Achenbach & Rescorla, 2001). Achenbach & Rescorla (2001) consider disobedience as hostile observable and obvious acts that adolescent shows in response to environmental conditions. According to Greene (2011) defiant oppositional behaviors refers to a recurrent pattern of negativistic, defiant, disobedient, and hostile behavior toward authority figures and disobedience to disciplinary behaviors, that occurs in or out of educational environments.

Increasing evidence supports the belief that personality traits are influenced by biological-hereditary factors. Cloninger (1986) developed a specific personality model based on the relationship between specific personality traits and basic neuro-biological processes. In general, Cloninger (1986) argued that the structure of personality has two components: disposition and character, which in that disposition is an inherited dimension and character is an acquired dimension. Hendi & Biderman (2019) reported in their study that extraversion and conscientiousness factors, which have strong dispositional components, are significant predictors of students' academic dishonesty.

In another study, Gustavson et al. (2014) showed that procrastination is a relatively constant personality trait and is closely related to dispositional traits. Recently, several studies have reported a significant relationship between personality traits and the predictability of academic

procrastination through personality traits (Steel & Klingsieck, 2016). Another study found that students with externalizing behavioral problems scored lower on the dispositional trait of perseverance than other students (Akbas et al., 2015). Also, in the study of Akbas et al. (2015), it was reported that high novelty- seeking is associated with behavioral problems of lawbreaking and confrontational disobedience. In a similar study by Lu et al. (2012), the results showed that the disposition dimensions can significantly predict behavioral problems. Also, research findings (Aureli et al., 2015; Ismatullina & Voronin, 2017) showed that dispositional traits can be a significant predictor of academic self-regulation. Hence, in this study, relying on the theory of Cloninger (1986), disposition with the components of novelty-seeking, harm avoidance, reward dependence, and perseverance were measured by Cloninger (1986) Temperament Scale.

One of the predictors of destructive academic behaviors can be emotional security (Blatz, 2014). Security is also a state of mind in which a person is willing to accept the consequences of their behavior and includes all aspects of a person's behavior in all periods of life (Blatz, 2014). As a consequence of Bowlby's (1980) writings, the concept of emotional security, has been associated with attachment theory for many years, and the study of emotional security, regardless of its relevance to attachment theory, was forgotten for more than 20 years in psychological research. The concept reappeared in 1994 when Davies & Cummings (1994) published the Theory of Emotional Security.

According to Davies & Cummings (1994), emotional security involves three different processes such as emotional reaction, behavioral regulation, and internal visualization. The process of emotional reaction refers to the fact that when a person feels fear or anxiety in a threatening situation, a state of alertness or latent violence is activated. The process of behavioral regulation refers to controlling the confrontation with threatening situations so that insecure people tend to control it as much as possible by engaging too much with the situation or ignoring it, or by directly facing dangerous situations, and finally, the process of visualization about conscious and unconscious schemas and potential dangers is effective. Research show stable patterns of secure attachment, self-confidence, and self-efficacy in adolescents. However, emotional security is a complex combination of heredity and environmental factors (Davies & Cummings, 1994). Other studies have emphasized the role of dispositional factors in emotional security (Davies et al., 2004).

The theory of Developmental psychopathology (Rutter, 1997), the theory of Emotional security (Davies & Cummings, 1994; Cummings & Davies, 1996), and Davies and Martin's (2013) theory of emotional security, all introduce emotional insecurity as the most effective factor in the explanation of destructive behaviors. Conceptual models of emotional security to understand the adjustment of children and adolescents have been studied in several longitudinal studies indicating that emotional insecurity has a strong effect throughout childhood, adolescence, and adulthood on their internalizing and externalizing behaviors (Davies et al., 2014؛ Sadra et al., 2023).

Researches on the relationship between emotional security and destructive behaviors have shown that there is a significant relationship between emotional insecurity and behavioral disorders and emotional insecurity is a strong predictor for behavioral disorders in children and adolescents in the fields of Psychological, behavioral, social and academic (El-Sheikh et al., 2007؛ Cummings et al., 2014؛ Li et al., 2016؛ Amani & Nemati, 2023). In the present study, according to the theoretical foundations and research results, the variable of emotional security with security, preoccupation, and withdrawal components is examined as the first mediator in explaining destructive academic behaviors.

Self-regulation is also one of the psychological concepts that have made the impact of the individual in the process of teaching and learning important. Self-regulation was first articulated in a systematic and categorized manner by Bandura (1986) and has since occupied a large part of the learning background. In the present study, our understanding of academic self-regulation focuses on the ability to initiate and continue goal-oriented activities through thoughts, feelings, and behavior management (Hofmann et al., 2012). Self-regulatory skills help students control their thoughts and behaviors, solve problems, plan and complete assignments, and meeting classroom requirements and expectations (McClelland & Cameron, 2019).

Research results have shown that self-regulation is a trait that can predict a number of negative consequences of destructive behaviors in high school students (Bandura, 1997؛ Ellis and Christian, 2011؛ Gino et al., 2011؛ San et al., 2016؛ Ziegler & Opdenakke's, 2018). Self-regulated learning is considered an intermediary structure that relates contextual resources to academic abilities (Dias & Cadime, 2017؛ Mohammadi Baghmollaei & Yousefi, 2023). Also, various studies have shown that academic self-regulation can also be predicted by emotional security (Speck, 2016; Orehek et al., 2017). Therefore, in the present study given the theories and research results, academic self-

regulation with cognition, metacognition, and motivation is examined as a second mediating variable in explaining destructive academic behaviors.

According to the above, the theories and researches reviewed so far, have each examined the effect of one or two antecedent variables, directly or indirectly, on one or two variables of the set of destructive academic behaviors, nevertheless none of them have studied the synchronicity effect of these antecedent variables in explanation of destructive academic behaviors. Therefore it appears that the explanation of destructive academic behaviors is still accompanied by certain theoretical gaps. Generally, based on the theoretical foundations and results of previous research, the main issue of the present study is whether disposition can predict and explain destructive academic behaviors through the mediation of emotional security and academic self-regulation.

According to the research results, it seems that the components of destructive academic behaviors have key roles in the academic performance of students, which is why they need the special attention of researchers. Among other things, procrastination causes poor learning, social anxiety, exam anxiety, low progress and psychological injuries (Azadi Dehbidi et al., 2022; Azadi Dehbidi & Khormaei, 2022). The selection of first-year high school students as the study sample was due to the fact that the conditions of these students in terms of the onset and formation of the components of academically traumatic behaviors compared to the primary education period, are in accordance with the objectives of the research (Kashkoli et al., 2022).

In the present study, based on theoretical foundations and the results of existing research, an attempt has been made to investigate the role of temperament, emotional, and cognitive factors in explaining destructive academic behaviors. In this regard, temperament was considered as biological agent, emotional security as an emotional factor, and academic self-regulation as a cognitive factor in explaining the destructive academic behaviors in formulating the research model. To explain the destructive academic behaviors in the present study, the temperament variable was assumed as an antecedent variable and emotional security and academic self-regulation were assumed as mediating variables (Figure 1).

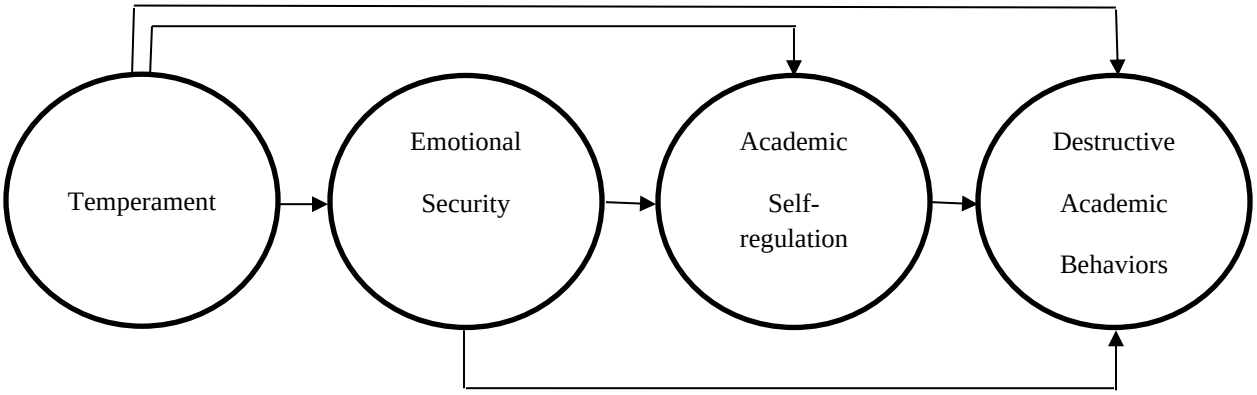

Figure 1. Research conceptual model

Material and Methods

This study is of correlational type. Temperament was studied as an endogenous variable, academic destructive behaviors as an exogenous variable, and emotional security and academic self-regulation as mediating variables. The population were comprised of eighth-graders high school students who have studied in Bushehr, Iran. Of these, a sample of 503 people was selected according to Kline (2015), who considers the criterion of a sample size to be at least between 10 and 20 people per parameter. The reason for the selection of students in this course as a sample was that the conditions of these students were better congruous with the objectives of the research. In this study, sampling was done by the multi-stage cluster random sampling method. For this purpose, a list of schools was prepared and then with taking into account the gender ratio, educational level, and student population in each region, eight schools were selected from one urban district 1 and six schools from urban district 2. One class was randomly selected in each school, and all students in those classes participated in the research as participants. research tools were as follows:

1- Temperament Questionnaire: This 125- items questionnaire developed by Cloninger (1986) assess disposition and character. In the present study, only 60 items related to disposition (maintaining the order of the items in the main questionnaire) were used. All items are answered in a yes/no format. Item responses are scored 0 for "no" and 1 for "yes" answers. Of course, some reverse-scored items are scored 1 for "no" and 0 for "yes" answers. In this questionnaire, disposition is comprised of 4 components (Novelty-seeking, Harm avoidance, Reward dependence

and Perseverance). The novelty-seeking component includes items 1, 10, 14, 24, 36, 44, 47, 51, 53, 59, 60, 63, 71, 76, 77, 99, 103, 105, 106 and 125, the harm avoidance component Includes items 2, 9, 16, 19, 30, 38, 45, 46, 61, 62, 64, 70, 78, 81, 82, 86, 98, 104, 115 and 124, the reward dependence component includes items 11 15, 20, 26, 31, 39, 54, 65, 72, 79, 85, 96, 97, 111 and 119 and the perseverance component includes items 8, 22, 37, 55 and 116. The underlined questions are scored in reverse.

In the main study conducted in the United States, the reported Cronbach's alpha for the components of the disposition scale ranged from 0.65 to 0.89. In the present study, based on confirmatory factor analysis, the disposition questionnaire was evaluated. The disposition measurement model has four explicit components (novelty-seeking, harm avoidance, reward dependence, and perseverance) and one latent variable (disposition). chi-square and normed Chi-Square, the comparative fit index, the goodness of fit index, root mean square error of approximation, parsimony comparative of fit index (PCFI), adjusted goodness of fit index (AGFI), Tucker-Lewis Fit Index (TLI) and the PCLOSE fit index all have confirmed the fit of the assumed model. In the assumed model, the value of chi-square is equal to 3384.28, the value of normed chi-square is equal to 2.35, the value of CFI is equal to 0.91, the value of GFI is equal to 0.94, the value of RMSEA is equal to 0.07 and the value of PCLOSE Is equal to 0.17. Since the values of the calculated indices are in the acceptable range, the fit of the hypothetical model is confirmed (Meyers et al., 2017). After the fit indices evaluation, factor loadings were calculated for the latent variable (disposition). Novelty seeking has a factor loading of 0.66, harm avoidance has a factor loading of 0.60, reward dependence has a factor loading of 0.65 and perseverance has a factor loading of 0.42. Thus, the novelty-seeking, harm avoidance, reward dependence, and perseverance have acceptable factor loadings for the latent variable (disposition). Cronbach's alpha coefficient was used to calculate the reliability of the disposition questionnaire, the alpha coefficients for novelty seeking, harm avoidance, reward dependence, and perseverance components, were 0.84, 0.73, 0.78, and 70, respectively.

2- Emotional Security Scale: The Emotional Security Scale is developed by Forman & Davies (2005) to assess emotional security. Based on the theory of emotional security and with the help of factor analysis, Forman & Davies (2005), developed a scale of emotional security in the family system with three dimensions of security, preoccupation, and withdrawal. On this scale, the

security dimension has 7 items, the preoccupation dimension has 8 items, and the withdrawal dimension has 7 items. All the items are responded to on a five-point Likert scale ranging from 1, "strongly disagree" to 5 "strongly agree". Items 1, 4, 5, 12, 16, 19, and 20 measure security subscale, items 2, 6, 7, 9, 13, 14, 15, and 21 measure preoccupation subscale, and items 3, 8, 10, 11, 17, 18 and 22 measure the withdrawal subscale.

Good content validity has been reported by Cummings et al. (2004). In Cummings et al. (2004), the reliability of Cronbach's alpha coefficients for security, preoccupation, and withdrawal were 0.71, 0.77, and 0.84. respectively. In the present study, the emotional security questionnaire was evaluated based on confirmatory factor analysis. This measurement model has three explicit variables of security, preoccupation and withdrawal, and one latent variable of emotional security. The calculated value of chi-square is equal to 57.32, the value of normed chi-square is equal to 2.99, the value of CFI is equal to 0.92, the value of GFI is equal to 0.96, the value of RMSEA is equal to 0.06 and the value of PCLOSE is equal to 0.24. Therefore, since the values of the calculated indices are in the acceptable range, the fit of the assumed model is confirmed (Meyers et al., 2017). After evaluating the fit indices, factor loadings for the latent variable of emotional security were also calculated. Factor loadings show that the security index has a factor loading of 0.87, the preoccupation index has a factor loading of 0.82 and the withdrawal index has a factor loading of 0.78. Cronbach's alpha coefficient was utilized for the reliability of the emotional security Questionnaire. The alpha coefficients for security, preoccupation and withdrawal components, were 0.81, 0.75 and 0.74, respectively.

3- Academic self-regulatory questionnaire: This 19 -items questionnaire has been designed and validated by Bofard et al. (1995). The 17 items version that has been validated in Iran has been used in the present study (Ghasemi & Fooladchang, 2011). According to this version, the metacognition dimension consists of items 14, 1, 2, 15, 8, 7, 3, and 6, cognition dimension consists of items 4, 11, 10, and 9, while motivation dimension consists of items 18, 17, 16, 13 And 15. All the items are responded to on a Likert scale from strongly agree (5) to strongly disagree (1).

Bofard et al. (1995) reported the following reliability coefficients for the three dimensions of this questionnaire: metacognition (0.72), cognition dimension, (0.78), and motivation dimensions (0.68). In the present study, the academic self-regulatory questionnaire was evaluated based on confirmatory factor analysis. This measurement model has three explicit variables (metacognition,

cognition, and motivation) and one latent variable (academic self-regulation). The calculated value of chi-square is equal to 309.26, the value of normed chi-square is equal to 2.81, the value of CFI is equal to 0.90, the value of GFI is equal to 0.93, the value of RMSEA is equal to 0.06 and the value of PCLOSE is equal to 0.09. Therefore, since the values of the calculated indices are in the acceptable range, the fit of the assumed model is confirmed (Meyers et al., 2017). After evaluating the fit indices, factor loadings were calculated for the latent variable of self-regulatory. Factor loadings show that the metacognition index has a factor loading of 0.72, the cognition index has a factor loading of 0.67, and the motivation index has a factor loading of 0.64. Cronbach's alpha coefficient was used to calculate the reliability of the questionnaire, the alphas coefficients for the metacognition, cognition, and motivation components were 0.76, 0.73, and 0.70, respectively.

4- Academic Destructive Behaviors Scale: This scale was used to measure academic destructive behaviors (procrastination, dishonesty, law braking and disobedience) inspired by the Tuckman (1991) Academic Procrastination Questionnaire, Achenbach (1991) Self-Assessment Scale and also using the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, American Psychiatric Association, 2013) have been compiled and validated by the researcher in the form of a single questionnaire called the Scale of Destructive Academic Behaviors. This scale has 52 items with response on a 5-point Likert scale form, from very frequently (5) to never (1). Items 1-10 are assigned to the subscale of academic dishonesty, items 11-21 to the academic status violations, items 22-32 to the academic oppositional defiance, and items 33-52 to the academic procrastination. Except for items 8 9, 10, 16, 34, 36, 38, 43, 47 and 48, which are scored inversely, the rest of the items are directly scored.

The scale of academic destructive behaviors was evaluated based on confirmatory factor analysis in the present study. This measurement model has four obvious variables (academic dishonesty, academic status violations, academic oppositional defiance, and academic procrastination) and a latent variable of destructive academic behaviors. The calculated value of chi-square is equal to 3465.54, the normed chi-square is equal to 2.73, the value of CFI is equal to 0.95, the value of GFI is equal to 0.93, the value of RMSEA is equal to 0.06, and the value of PCLOSE is equal to 0.20. Therefore, since the calculated indices values are in the acceptable range, the fit of the assumed model is confirmed (Meyers et al., 2017). After evaluating the fit indices, factor loadings for the latent variable of destructive academic behaviors were also calculated. Factor loadings show that

academic dishonesty has a factor loading of 0.74, violation of the educational law has a factor loading of 0.81, academic disobedience has a factor loading of 0.71 and academic procrastination has a factor loading of 0.65. Cronbach's alpha coefficient was used to calculate the scale of academic destructive behaviors scale. The alpha coefficients for academic dishonesty, academic status violation, disobedience of academic encounters, and academic procrastination components were 0.77, 0.76, 0.78, and 0.83, respectively.

Data were analyzed with SPSS-21 and Amos-21 software. SPSS-21 software was used for data entry, mean calculation, standard deviation, correlation coefficient, and Cronbach's alpha and Amos-21 was used for structural equation modeling (hypothesis testing) and confirmatory factor analysis of the questionnaires. Finally, the bootstrap test was used to evaluate the significance of the effect of mediating variables.

Results

The descriptive statistics (means, standard deviations, minimum and maximum scores) for the study variables and correlation matrix between research variables are shown in Tables 1 and 2, respectively. According to the results of Table 2, there exist a significant negative relationship (P= 0.001) between disposition and academic destructive behaviors, between emotional security and academic destructive behaviors, and between academic self-regulation and academic destructive behaviors (P= 0.001).

Table 1. Means, standard deviations, and minimum and maximum scores of research variables

Variables	Components	M	SD	Minimum Score	Maximum Score
Temperament	Novelty-seeking	10.43	4.05	1.00	20.00
	Harm avoidance	9.41	3.28	2.00	19.00
	Reward dependence	7.01	2.69	1.00	5.00
	Perseverance	2.54	1.51	1.00	14.00
Emotional security	Security	25.29	4.64	9.00	35.00
	Preoccupation	29.30	5.44	15.00	40.00
	Withdrawal	25.09	4.30	14.00	35.00
Educational self-regulation	Cognition	13.52	3.20	5.00	20.00
	Metacognition	22.18	5.14	10.00	36.00

	Motivation	16.52	3.14	8.00	24.00
Destructive academic behaviors	Academic dishonesty	34.93	6.80	17.00	50.00
	Academic status violation	41.52	6.79	25.00	55.00
	Academic oppositional defiance	37.15	7.88	18.00	54.00
	Academic procrastination	55.22	12.43	24.00	92.00

Table 2. Correlation matrix of research variables

variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Novelty-seeking	1													
2. Harm avoidance	0.44**	1												
3. Reward dependence	0.30**	0.21**	1											
4. Perseverance	0.36**	0.41**	0.26**	1										
5. Security	0.28**	0.23**	0.11*	0.19**	1									
6. Preoccupation	0.25**	0.17**	0.11*	0.11*	0.70**	1								
7. Withdrawal	0.26**	0.21**	0.18**	0.19**	0.69**	0.63**	1							
8. Cognition	0.15**	0.21**	0.25**	0.17**	0.28**	0.18**	0.27**	1						
9. Metacognition	0.16**	0.14**	-0.03**	0/11**	0.32**	0.25**	0.31**	0.47**	1					
10. Motivation	0.24**	0.17**	-0.43**	0.14**	0.26**	0.14**	0.19**	0.44**	0.32**	1				
11. Dishonesty	-0.27**	-0.15**	-0.43**	-0.31**	-0.41**	-0.38**	-0.39**	-0.24**	-0.28**	-0.19**	1			
12. Status violation	-0.31**	-0.29**	-0.43**	-0.14**	-0.37**	-0/34**	-0.39**	-0.25**	-0.31**	-0.21**	0.48**	1		
13. Oppositional defiance	-0.29**	-0.27**	-0.43**	-0.17**	-0.41**	-0/39**	-0.35**	-0.32**	-0.29**	-0.26**	0.44**	0.45**	1	
14. Procrastination	-0.37**	-0.29**	-0.43**	-0.13**	-0.44**	-0.38**	-0/43**	-0.31**	-0.35**	-0.33**	0.39**	0.46**	0.40**	1

*P<0.01 **P<0.05

In this section, multivariate outliers were first examined using the Mahalanobis index of Emus software. After analyzing the outliers, the minimum and maximum values, skewness index and its critical ratio, kurtosis index and its critical ratio as well as Mardia coefficient and its critical ratio were calculated (Table 3). The results of Table 3 indicate the normal distribution of univariate and multivariate research data.

Table 3. Normality test of research variables

Variables	Kurtosis	Critical ratio	Skewness	Critical ratio
novelty-seeking	0.01	0.14	-0.51	-2.37
Harm avoidance	0.05	0.49	-0.47	-2.14
Reward dependence	0.11	0.99	-0.42	-1.91
Perseverance	0.03	0.31	-0.49	-2.23
Metacognition	0.19	-1.73	-0.51	-2.37
Cognition	-0.18	-1.73	-0.54	-2.46
Motivation	0.17	1.59	-0.33	-1.51
Security	-0.05	-0.44	-0.41	-1.86
Preoccupation	-0.12	0.85	0.61	2.11
Withdrawal	-0.23	1.60	-0.40	1.40
Academic procrastination	0.28	2.53	-0.16	0.73
Academic dishonesty	-0.17	1.58	-0.54	-2.44
Academic oppositional defiance	-0.11	-0.97	-0.49	-2.16
Academic status violation	-0.25	-2.15	-0.70	2.54
Mardia coefficient (multivariate)	-	-	1.58	0.84

Figure 2 shows the path coefficients and the final model of the research.

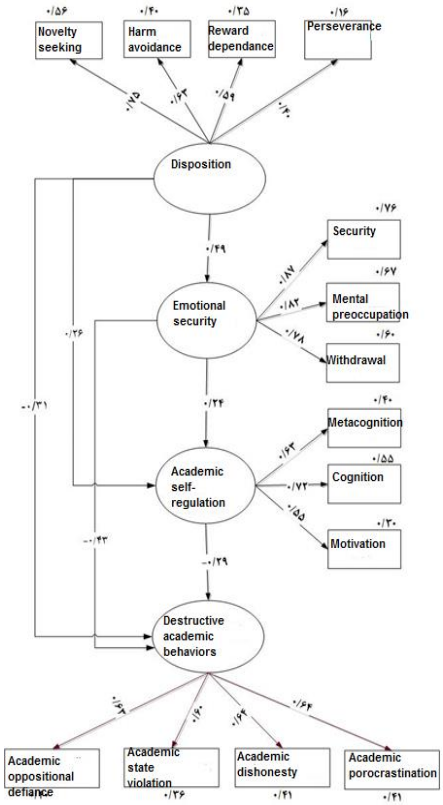

Figure 2. The final research model

The fit indices of the research model are presented in Table 4. The fit indices showed that the model has a good fit.

Table 4. Structural equation model fit indices (general research hypothesis)

Index	X^2/df	GFI	AGFI	TLI	RFI	CFI	PCFI	RMSEA	PCLOSE
Value	1.64	0.94	0.91	0.95	0.87	0.96	0.76	0.05	0.62
Acceptable values	>3	>0.90	>0.90	>0.90	>0.90	>0.90	>0.50	<0.08	>0.05

Based on the results of the research model test, the obtained direct effects, the indirect effects, and the total effects for the research variables are presented in Table 5.

Table 5. Direct, indirect and, total effects of research variables

Structural paths			Direct effect	Indirect effect	Total effect
Temperament	→	Emotional security	0.49**	-	0.49**
Temperament	→	Academic self-regulation	0.26**	0.12*	0.38**
Emotional security	→	Academic self-regulation	0.24**	-	0.24**
Academic self-regulation	→	Destructive academic behaviors	-0.29**		-0.29**
Emotional security	→	Destructive academic behaviors	-0.43**	-0.07*	-0.50**
Temperament	→	Destructive academic behaviors	-0.31*	-0.32*	-0.63**

*P<0.01 **P<0.05

Based on the results of the model test, temperament has a significant indirect effect on destructive academic behaviors mediated by emotional security and academic self-regulation (P=0.003, β=-0.32). Thus, 10% of the variance of destructive academic behaviors can be indirectly explained by the disposition variable mediated by emotional security and academic self-regulation.

Discussion

This study aimed to explain the destructive academic behaviors based on temperament through the mediation of emotional security and self-regulation in the form of a structural equation model. The findings of the present study revealed that temperament is a significant negative predictor of destructive academic behaviors. In explaining and confirming the desired result, the theories and results of similar studies such as Lou et al. (2012), Gustavson et al. (2014), Akbas et al. (2015), Steele & Klingsick (2016), and Hendi & Bidermann. (2019) can be cited. In explaining this research finding, it is argued that dispositional characteristics are typically consistent with

environmental factors, i.e if the dispositional traits, abilities and motivations of children and adolescents are congruent with the expectations of the environment, the concept of "goodness fit" is formed which its consequence is adaptive behaviors (Gustavson et al., 2014; Akbas et al., 2015).

The findings of the present study also revealed that temperament is a significant positive predictor of emotional security. In support of this finding, the theories and related studies such as Strugg-Apple et al. (2012) and Robbie et al. (2012) can be cited. In explaining the effect of temperament on emotional security, it can be stated that dispositional traits are influential in the emotional and social development of the child and its course in adulthood. For example, individuals who are dispositional-predisposed to high irritability, bad temper in childhood, will show aggression when failure occurs and will engage in non-constructive behaviors in the face of problems in adulthood, if the family and caregivers do not meet their emotional needs (Strugg-Apple et al., 2012).

The findings revealed that dispositional traits are positive and significant predictors of academic self-regulation. In explaining this finding, the theories and related studies such as Aureli et al. (2015) and Ismacholina & Veronin (2017) can be cited. In explaining the relationship between disposition and self-regulation, it can be stated that self-regulation is influenced by hereditary factors to the extent that it has been claimed that dispositional traits can provide a basis for coping with emotional stimuli associated with self-regulatory behaviors (Aurley et al., 2015). Researchers have shown that when children are faced with negative effects, they naturally demonstrate regulatory reactions that reduce their anxiety (Ismacholinia & Veronin, 2017).

The findings also revealed that emotional security is a significant positive predictor of academic self-regulation. In support of this finding, the theories and results of related research such as Speck (2016) and Orehek et al. (2017) can be cited. In explaining this research finding, it can be stated that in this research, emotional security is presented with three components: security, preoccupation, and withdrawal. If we pay attention to the meaning and explanation of these components, it can be seen that people with emotional security due to greater security, less negative preoccupation and a tendency to connect and rejoin the family (rather than withdrawal) can utilize all of their cognitive and metacognitive capacities to self-regulate in a variety of situations, including better academic status (Speck, 2016; Orehek et al., 2017).

Based on the results, it can be stated that emotional security is a significant negative predictor of destructive academic behaviors. In support of this conclusion, the theories and results of related

research such as Davies & Cummings (1994), Davies et al. (2014), Cummings et al. (2014), and Lee et al. (2016) can be cited. In explaining the effect of emotional security on destructive academic behaviors, by borrowing from the theory of emotional security (Davies & Cummings, 1994; Davies & Martin, 2014), it is noted that since emotionally insecure people experience less sense of security in the family environment, inherently they are always looking to satisfy this need and continue to seek this need in environments other than their family, which can remarkably raise the possibility of destructive behaviors. When children consider environments and spaces other than the family as their safe haven and take refuge there, this will have no result other than behavioral pathologies (Cummings et al., 2014; Davis & Martin, 2014).

Finally, findings revealed that disposition can predict destructive academic behaviors by the mediation of emotional security and academic self-regulation. This finding is in line with the results of studies by Di et al. (2011) and Steele & Klingsick (2016). In explaining this, it can be stated that negative traits cause emotional insecurity because they call forth negative responses from the environment, then emotional insecurity exert a negative effect on the natural development of cognitive and metacognitive skills and strategies through its negative consequences, which this very factor i.e. experiencing feelings of insecurity and poor self-regulation can provide conditions for more destructive behaviors in various situations, including educational status (Davies & Martin, 2013).

Findings indicated that temperament, emotional security, and academic self-regulation had a direct effect on educational destructive behaviors. Disposition had an indirect effect on academic destructive behaviors by mediating role of emotional security and academic self-regulation. In addition, emotional security had a direct effect on academic self-regulation. Therefore, it was concluded that temperament predicts and explains destructive academic behaviors both directly and through the mediation of emotional security and academic self-regulation.

Like any other research, this research had some limitations. The scope of the study is centered on a group of high school students, which limits the generalizability of these findings. Finally, this research is of correlational type, therefor causal inferences about the relationships between research variables should be done with caution. According to the results, it is recommended that the child's parents and caregivers become familiar with the dispositional traits of their children in the early years of life. Awareness of teachers and parents about the dispositional conditions of

children is an important step in implementing educational programs. In this regard, it is suggested that a certificate of dispositional traits be provided for all children in kindergarten. Also in this regard, training courses based on special disposition educational package should be included for kindergarten, preschool, and primary school teachers who are the first line of education, to reduce the problems and behavioral pathologies of students. In order to reduce the problems and behavioral pathologies of students and to improve the teaching and learning process, training courses based on a special training package of disposition and emotional security are required.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Shiraz University.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. All authors contributed to the article and approved the submitted version.

Funding

The authors did (not) receive support from any organization for the submitted work.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

References

Achenbach, T. M. (1991*). Integrative guide for the 1991 CBCL/4-18, YSR, and TRF Profiles.* Burlington, VT: University of Vermont, Department of Psychiatry.

Achenbach, T. M., & Rescorla, L. (2001). ASEBA school-age forms & profiles: Aseba Burlington.

Akbas, N. B., Kilic, E. Z., Zahmacioglu, O., Atalay, H., & Goktuna, Z. (2015). Attention deficit and hyperactivity symptoms in a group of university students and relations with temperament and character profiles. *Dusunen Adam, 28*(3), 189-195.

Amani, M., & Nemati, R. (2023). The moderating role of parent-child interaction in relationship of parenting practices with behavioral problems of elementary students. *Educational Research,* 12(46), 1-19.

American Psychiatric Association (2013). Diagnostic And Statistical Manual Of Mental Disorders, Fifth Edition.

Aureli, T., Coppola, G., Picconi, L., Grazia, A., & Ponzetti, S. (2015). Relationships between regulatory temperament dimensions and self-regulatory behaviors at 4 and 6 months of age. *Infant Behavior and Development, 38*, 162-166.

Azadi Dehbidi; F., khormaei; F. (2022). Explanation of moral academic behaviors: The role of character trait and ethical climate school, *Educational Research*, 11(1), 183-202.

Azadi Dehbidi; F., khormaei; F., Sheikholeslami; R., Hosinchari, M. (2022). The mediating role of positive youth development in the relationship between ethical climate school with destructive academic behaviors. *Educational Psychology*, 17(62), 177-203.

Bandura, A. (1986). Social foundation of thought and action: A social-cognitive view. *Englewood Cliffs*.

Blatz, W. E. (2014). *Human security: Some reflections.* London: University of London Press.

Bouffard, T., Boisvert, J., Vezeau, C., & Larouche, C. (1995). The impact of goal orientation on self-regulation and performance among college students. *British Journal of Educational Psychology*, 65(3), 317-329.

Bowlby, J. (1980). By ethology out of psycho-analysis: An experiment in interbreeding. *Animal Behaviour, 28*(3), 649-656.

Cloninger, C. R. (1986). A unified biosocial theory of personality and its role in the development of anxiety states. *Psychiatric developments*, *3*(2), 167-226.

Cummings, E. M., Cheung, R. Y. M., Koss, K. J., & Davies, P. (2014). Parental depressive symptoms and adolescent adjustment: A prospective test of an explanatory model for the role of marital conflict. *Journal of Abnormal Child Psychology*, *42*, 1153–1166.

Cummings, E. M., & Davies, P. (1996). Emotional security as a regulatory process in normal development and the development of psychopathology. *Development and Psychopathology*, 8, 123–139.

Cummings, E. M. & Davies, P. T. (2002). Effects of marital conflict on children: Recent advances and emerging themes in process-oriented research. *Journal of Child Psychology and Psychiatry*, *43*, 31–63.

Cummings, E. M., Goeke-Morey, M. C., & Papp, L. M. (2004). Everyday marital conflict and

child aggression. *Journal of abnormal child psychology, 32*(2), 191-202.

Davies, P. T., & Cummings, E. M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological bulletin, 116*(3), 387-411.

Davies, P. T., Cummings, E. M., & Winter, M. A. (2004). Pathways between profiles of family functioning, child security in the interparental subsystem, and child psychological problems. *Development and Psychopathology, 16*(03), 525-550.

Davies, P. T., & Martin, M. J. (2013). The reformulation of emotional security theory: The role of children's social defense in developmental psychopathology. *Development and Psychopathology, 25*(4pt2), 1435-1454.

Davies, P. T., Sturge-Apple, M. L., Bascoe, S. M., & Cummings, E. M. (2014). The legacy of early insecurity histories in shaping adolescent adaptation to interparental conflict. *Child development, 85*(1), 338-354.

Dias, P. C., & Cadime, I. (2017). Protective factors and resilience in adolescents: The mediating role of self-regulation. *Psicología Educativa*, 23(1), 37-43. https://doi.org/10.1016/j.pse.2016.09.003.

Ellis, A. P. J., & Christian, M. S. (2011). Examining the effects of sleep deprivation on workplace deviance: A self-regulatory perspective. *Academy of Management journal, 54*(5), 913-934.

El-Sheikh, M., Buckhalt, J. A., Keller, P. S., Cummings, E. M., & Acebo, C. (2007). Child emotional insecurity and academic achievement: the role of sleep disruptions. *Journal of Family Psychology, 21*(1), 29-38. doi:10.1037/0893-3200.21.1.29.

Erdemir, N. (2019). Determining the effect of reducing procrastination tendency on the academic achievement in physics course. *International Journal of Educational Administration and Policy Studies*, 11(1), 1-11.

Forman, E. M., & Davies, P. T. (2005). Assessing children's appraisals of security in the family system: The development of the Security in the Family System (SIFS) scales. *Journal of child psychology and psychiatry, 46*(8), 900-916.

Ghasemi, A., & Fooladchang, M. (2011). Investigating the role of parents' goal emphasis in students' learning self-regulation. *Journal of Educational Psychology Studies*, 7(11), 69-86.

Gino, F., Schweitzer, M. E., Mead, N. L., & Ariely, D. (2011). Unable to resist temptation: How self-control depletion promotes unethical behavior. *Organizational behavior and human*

decision processes, 115(2), 191-203.

Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology, 10*(3), 243.

Greene, R.W. (2011). Collaborative problem solving. In R.C. Murrihy, A.D. Kidman. & T.H. Ollendick (Eds.) *Clinical Handbook of Assessing and Treating Conduct Problem in Youth*, 193-220. New York, NY.

Gustavson, D. E., Miyake, A., Hewitt, J. K., & Friedman, N. P. (2014). Genetic relations among procrastination, impulsivity, and goal-management ability: Implications for the evolutionary origin of procrastination. *Psychological science*, *25*(6), 1178-1188.

Hendy, N. T., & Biderman, M. D. (2019). Using bifactor model of personality to predict academic performance and dishonesty. *The International Journal of Management Education, 17(2),* 294-303.

Hofmann, W., Schmeichel, B. J., & Baddeley, A. D. (2012). Executive functions and self-regulation. *Trends in cognitive sciences, 16*(3), 174-180.

Ismatullina, V., & Voronin, I. (2017). Individual Differences in the Relationship between Temperament and Planning Ability in Adolescents. *Procedia-Social and Behavioral Sciences, 237*, 1455-1461.

Kashkoli, F., Khormaei; F., & Poorseyed, S. M. (2022). Construction and evaluation of psychometric properties of the scale of scale of academic destructive behaviors in students. *Educational Measurement,* 12(46), 27-49.

Kline, R. B. (2015). Principles and practices of structural equation modeling (4rd Eds.). New York: Guilford.

Li, Y., Cheung, R. Y., & Cummings, E. M. (2016). Marital conflict and emotional insecurity among Chinese adolescents: Cultural value moderation. *Journal of Research on Adolescence, 26*(2), 316-333.

Li San Y, Roslan. S.B. Sabouripour .F (2016). Relationship between Self-Regulated Learning and Academic Procrastination. *American Journal of Applied Sciences*, 13(4), 459.466.

Lu, X., Chen, Z., Cui, X., Uji, M., Miyazaki, W., Oda, M., Katoh, T. (2012). Effects of temperament and character profiles on state and trait depression and anxiety: a prospective

study of a Japanese youth population. *Depression research and treatment, 2012*.

McClelland, M. M., & Cameron, C. E. (2019). Developing together: The role of executive function and motor skills in children's early academic lives. *Early Childhood Research Quarterly, 46*, 142-151.

Meyers, L. S., Gamst, G., & Guarino, A. J. (2017). Applied multivarite research: design and interpretation, Third Edition.

Mohammadi Baghmollaei, H., & Yousefi, F. (2023). The relationship between parents-adolescent interaction and students' academic engagement: The mediating role of self-regulated learning. *Family and Research,* 19(4), 23-46.

Orehek, E., Vazeou-Nieuwenhuis, A., Quick, E., & Weaverling, G. C. (2017). Attachment and Self-Regulation. *Personality and Social Psychology Bulletin, 43*(3), 365-380.

Ozer, Z., & Yetkin, R. (2018). Walking through different paths: Academic self-efficacy beliefs and academic procrastination behaviors of pre-service teachers. *Journal of Language and Linguistic Studies, 14(2),* 89-99.

Raby, K. L., Cicchetti, D., Carlson, E. A., Cutuli, J., Englund, M. M., & Egeland, B. (2012). Genetic and caregiving-based contributions to infant attachment: Unique associations with distress reactivity and attachment security. *Psychological science, 23*(9), 1016-1023.

Rusdi, S. D., Hussein, N., Rahman, N. A. D., Noordin, F., & Aziz, Z. Z. A. (2019). Academic Dishonesty among Tertiary Students in Malaysia. *International Journal of Academic Research in Business and Social Sciences, 9(3),* 512–520.

Rutter, M. (1997). Comorbidity: concepts, claims and choices. *Criminal Behaviour and Mental Health, 7*(4), 265-285.

Sadra, E., Imanian, S., & Nabizadeh, S. (2023). Explaining the parent-child relationship based on covid-19 anxiety with the intermediary role of emotional security. *Family and Research,* 20(1), 65-82.

Speck, J. (2016). *Attachment-Related Differences in Self-Regulation across Childhood.* University of Delaware.

Steel, P., & Klingsieck, K. B. (2016). Academic procrastination: Psychological antecedents revisited. *Australian psychologist, 51*(1), 36-46.

Sturge-Apple, M. L., Cicchetti, D., Davies, P. T., & Suor, J. H. (2012). Differential susceptibility

in spillover between interparental conflict and maternal parenting practices: Evidence for OXTR and 5-HTT genes. *Journal of Family Psychology, 26*(3), 431-442.

Tuckman , B. W. (1991) The development and concurrent validity of the Procrastination Scale. *Educational and Psychological Measurement, 51*, 473–480.

Ziegler, N., & Opdenakker, M. C. (2018). The development of academic procrastination in first-year secondary education students: The link with metacognitive self-regulation, self-efficacy, and effort regulation. *Learning and Individual Differences*, *64*, 71-82.