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Prediction of Academic Procrastination Based on Attachment Styles, Family Relationships, Personality Traits, and Academic Enthusiasm

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ABSTRACT

Objective: The aim of this study was to predict academic procrastination based on attachment styles, family relationships, personality traits, and academic enthusiasm among students in Divaniye, Iraq.

Methods and Materials: This research was descriptive and correlational in nature. The statistical population consisted of male and female students from Divaniye. A convenience sample of 300 male and female students was selected. Research instruments included the Solomon and Rothblum (1984) Academic Procrastination Questionnaire, the Armsden and Greenberg (1987) Inventory of Parent and Peer Attachment, the Olson and Barnes (2004) Family Relationship Questionnaire, the Costa and McCrae (1992) Five-Factor Personality Questionnaire, and the Fredericks et al. (2004) Academic Enthusiasm Questionnaire. Results were analyzed using both descriptive statistics (mean and standard deviation) and inferential statistics (Pearson correlation and stepwise regression).

Findings: The findings indicated that neuroticism and insecure attachment styles to peers and parents had a significant positive relationship with academic procrastination. In contrast, secure attachment styles to parents and peers, openness to experience, conscientiousness, and academic enthusiasm had a significant negative relationship with academic procrastination. Extraversion and agreeableness did not have a relationship with academic procrastination. The stepwise regression results showed that openness to experience, conscientiousness, academic enthusiasm, and secure attachment styles to peers and parents could predict academic procrastination.

Conclusion: In sum, the results indicated that all the mentioned variables had a significant relationship with procrastination except for extraversion and agreeableness. Additionally, among these correlated variables, personality traits had the power to predict procrastination.

Keywords: *Academic procrastination, school anxiety, attachment styles, family relationships, personality traits, academic enthusiasm.*

1. Introduction

Students are considered among the future builders of every country, eventually occupying important social positions. Thus, the success of a society is largely influenced by their academic achievement. One of the significant barriers to appropriate academic performance among students is procrastination (Habibi et al., 2021). Procrastination, in its simplest form, is delaying tasks without any logical justification. Procrastination means that students postpone essential academic tasks and prefer to engage in less urgent activities. In other words, they prioritize tasks that are more enjoyable or less burdensome, regardless of their actual importance and necessity (Karatas, 2015). This preference for immediate pleasure over long-term consequences reflects the pleasure principle in psychodynamic theory. Procrastination becomes a significant behavioral problem when it meets three criteria: reducing efficiency, occurring in essential tasks, and generally causing delays in activities (Kuftyak, 2022).

Although procrastination is not always problematic, it indicates indecision, delay, and postponement of a specific task (Batool, 2020). Procrastination is a disabling factor and is highly related to low academic performance, anxiety, and low self-esteem. Researchers in the field of procrastination believe that multiple factors can contribute to its occurrence and persistence, such as self-handicapping, fear of negative evaluation, anxiety, and personality traits, all of which are inversely related to self-efficacy (Sparfeldt & Schwabe, 2024). It seems that the primary attachment style formed within the family can influence students in school. Separation anxiety, which may result from insecure attachment, can manifest strongly in school for the first time (Berber Çelik & Odaci, 2022).

According to Bowlby, attachment occurs when there is a warm, intimate, and enduring relationship between the individual and the mother, which is satisfying and enjoyable for both (Sung et al., 2020). Emotional availability and responsiveness are the building blocks of secure relationships. Individuals with this attachment style find it easy to form close relationships, feel comfortable relying on others, and letting others rely on them. Secure attachment in early years is highly correlated with strong self-confidence, independence, autonomy, trust, intimacy, flexibility, self-regulation, stable relationships, morality, social adaptation skills, positive beliefs, compassion, empathy, and academic success. Students with secure attachment styles are likely to experience less anxiety in school because they generally feel more secure. Students with secure attachment can separate from their parents upon entering school, feel at ease in school, and establish appropriate relationships with teachers and other students (Sayedi et al., 2017).

Student attachment is formed within the context of family relationships. Family relationships have always been considered the most fascinating and important human system. No other environment matches the power and breadth of influence that the family holds. Families create unique bonds among individuals, where language, skills, and social and moral values of their culture are learned. Family members turn to each other for help and pleasant interaction at all ages. Intimate and satisfying family relationships contribute to physical and mental health, while isolation or alienation within the family is often associated with problems (Sung et al., 2020; Tussey et al., 2018).

Most of an individual's life is spent within the family environment or in close connection with it. Feelings of happiness or unhappiness can often be traced back to family processes. The cornerstone of human relationships in the family begins with the relationship between spouses. Establishing and maintaining a healthy relationship with a spouse and other family members is crucial for family well-being. Adhering to principles such as mutual respect, honesty, emotional stability, loyalty, affection, confidentiality, and support creates a peaceful environment conducive to nurturing the family spirit. Additionally, personality significantly impacts family relationships (Boonk et al., 2018).

The Five-Factor Model of Personality, which has evolved over four decades, includes five factors: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. These traits are largely genetic and remain relatively stable over time. Previous research indicates that personality influences both normal and abnormal behaviors (Costa & McCrae, 2008, 2014). The five factors provide a framework for explaining individual differences in personality. Neuroticism is characterized by the tendency to experience negative emotions; extraversion includes traits such as sociability, assertiveness, activity, and affection for others. Openness to experience describes individuals who are interested in novel experiences for their own sake, seek variety, tolerate ambiguity, and lead richer, more complex, and unconventional lives. In contrast, those low in openness may appear unimaginative, insensitive to art and beauty, emotionally restricted, and behaviorally rigid (Costa & McCrae, 2014). Agreeableness emphasizes interpersonal tendencies such as altruism, empathy, and

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eagerness to help others. Conscientiousness includes a sense of duty, a need for achievement, and organization (Costa & McCrae, 2008, 2014). It has long been established that personality can affect academic constructs (Bergold & Steinmayr, 2018), one of which is academic enthusiasm.

Creating motivation and academic enthusiasm in students to ensure their success is a major challenge in enhancing educational quality. One of the most important indicators of improved educational quality is student academic enthusiasm. Academic enthusiasm represents a psychological investment and direct effort towards learning, understanding, and mastering required knowledge and skills. This construct was first introduced to understand and explain academic decline and failure and serves as a basis for reform efforts in education (Martínez et al., 2019). Academic enthusiasm is considered a psychological capital for students, encouraging them to engage effectively in school activities, participate in classroom activities, adapt to school culture, and develop positive relationships with teachers and other students (Datu & King, 2018).

Research on procrastination has been conducted; Abdolshahi and Serafraz (2019) showed the correlation between self-compassion and procrastination, shame, depression, anxiety, and stress (Abdolshahi & Sarafraz, 2019). Basharat and Farahmand (2018) examined the relationship between dimensions of perfectionism and procrastination among students, finding that self-oriented perfectionism had a non-significant negative relationship with procrastination (Besharat & Farahmand, 2018). Additionally, Zhou et al. (2022) conducted a meta-analytic study showing no significant relationship between active and passive emotional metacognition and academic procrastination (Zhou et al., 2022).

Ultimately, students are the future builders of every country and must eventually find their place in the job market. Their future careers and family lives depend on successfully navigating their academic paths. Whether students pursue careers that require further education or jobs that do not, they must learn to manage their academic responsibilities effectively. Academic procrastination is a significant barrier that students must learn to manage to ensure a better future. Additionally, Iraq, a country that has been plagued by years of war and is currently undergoing reconstruction, needs its students to maximize their abilities as future builders. Academic procrastination poses a significant educational challenge that needs to be addressed through research. The results of this study can guide preventative and corrective measures for this academic issue. This study aimed to predict academic procrastination based on attachment styles, family relationships, personality traits, and academic enthusiasm among students in Divaniye. The research sought to answer whether these factors can predict procrastination.

2. Methods and Materials

2.1. Study Design and Participants

Based on the research objective, this study is descriptive and correlational. The statistical population consisted of high school male and female students in Divaniye. Given the large sample size and numerous questions, a convenience sample of 200 male and female students was selected. According to Tabachnick et al. (2013), in correlational studies, ten to twenty participants should be selected per variable and sub-variable; therefore, twenty participants per variable and sub-variable were included in the study. The sampling method was convenient, selected from various high schools in Divaniye. Inclusion criteria included being a student, a resident of Divaniye, willing to cooperate in the study, and a maximum age of 18. Exclusion criteria included addiction or alcoholism, with relevant questions designed in the questionnaire, and being a non-high school student.

2.2. Measures

2.2.1. Academic Procrastination

The Solomon and Rothblum (1988) scale was used to measure academic procrastination. This tool includes 27 questions across three components: preparation for exams (8 questions), preparation of assignments (11 questions), and preparation for presentations. Scoring is on a four-point Likert scale from rarely to always, with scores ranging from 1 to 4. Internal consistency was reported with a Cronbach's alpha of 0.79. Convergent validity was confirmed through its relationship with Beck's Depression Inventory, Rosenberg's Self-Esteem Scale, and Ellis's Irrational Beliefs (Abdolshahi & Sarafraz, 2019; Solomon & Rothblum, 1988).

2.2.2. Parent Attachment Styles

Armsden and Greenberg (1987) developed this questionnaire, which includes 67 items. It is a self-assessment tool with a five-point Likert scale from strongly disagree=1 to strongly agree=5, assessing secure and insecure attachment styles to friends and parents. The

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questionnaire has no reverse scoring. Internal consistency for all subscales exceeded 0.78. Construct validity was assessed using factor analysis (Armsden & Greenberg, 1987; Sayedi et al., 2017). In this study, Cronbach's alpha for secure attachment to parents and peers was 0.82 and 0.72 for mothers and fathers, respectively, and 0.88 and 0.78 for insecure attachment. Internal consistency for secure attachment to fathers (α=0.87) and mothers (α=0.77) was recalculated. Secure attachment to parents was the sum of secure attachment to both father and mother, similarly applied to insecure attachment.

2.2.3. *Family Relationship*

The Barnes and Olson (1987) questionnaire was used to measure family relationships, consisting of 10 items rated on a five-point Likert scale (from strongly disagree to strongly agree), ranging from 1 to 5. The questionnaire has no reverse scoring. Internal consistency reliability was reported as 0.95 with a test-retest reliability of 0.86. Internal consistency was re-evaluated in an Iranian study by Mojoodi et al. (2018) with a Cronbach's alpha of 0.92 (Rejali & Yousefi, 2021). In this study, internal consistency was recalculated with a Cronbach's alpha of 0.89.

2.2.4. *Personality Traits*

The NEO-FFI (McCrae et al., 2005) was used to assess personality dimensions, including neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. The short form contains 60 items, with 12 items per scale having the highest factor loadings in factor analysis. Participants rate their agreement on a five-point Likert scale from 1 (strongly agree) to 5 (strongly disagree). High scores indicate higher levels of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Internal consistency has been reported as satisfactory in Iran (Vesal et al., 2022). In this study, internal consistency for all subscales exceeded 0.60.

2.2.5. *Academic Enthusiasm*

This scale was developed by Fredricks et al. (2004) and consists of 15 items measuring three subscales: behavioral enthusiasm, emotional enthusiasm, and cognitive enthusiasm. Each item is rated on a scale from 1 to 5, from never to always. The Cronbach's alpha for the internal consistency of the scale was 0.66. Fredricks et al. reported a reliability coefficient of 0.86 (Abbasi et al., 2015). The overall score for academic enthusiasm was considered in this study, with internal consistency recalculated and exceeding 0.76.

2.3. *Data analysis*

Data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (correlation and multiple regression). Calculations were performed using SPSS23 software.

3. Findings and Results

To examine the hypothesis that attachment styles, family relationships, personality traits, and academic enthusiasm can predict procrastination, Pearson correlation and stepwise regression analysis were used. Table 1 presents the mean and standard deviation of the variables.

Table 1

Descriptive Statistics of Research Variables

Research Variables	Mean	Standard Deviation	Correlation	Significance
Procrastination	42.29	19.77	1	.000
Secure Attachment	28.61	14.58	-.194	.003
Insecure Attachment	18.82	11.50	.231	.000
Academic Enthusiasm	31.820	11.503	-.167	.004
Family Relationships	30.590	11.606	-.224	.001
Neuroticism	44.815	15.417	.160	.012
Extraversion	35.890	12.859	-.050	.241
Openness to Experience	36.335	11.547	-.168	.009
Agreeableness	36.52	11.010	-.080	.112
Conscientiousness	35.525	13.70	-.255	.000

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The mean and standard deviation of academic procrastination were 42.29 ± 19.77. The mean and standard deviation for attachment styles (secure attachment 28.61 ± 14.58 and insecure attachment 18.82 ± 11.50), family relationships (30.590 ± 11.606), academic enthusiasm (31.820 ± 11.503), and personality traits (neuroticism 44.815 ± 15.417, extraversion 35.890 ± 12.859, openness to experience 36.335 ± 11.547, agreeableness 36.52 ± 11.010, and conscientiousness 35.525 ± 13.70) are shown. As presented in Table 1, all predictor variables except for extraversion and agreeableness had a significant relationship with procrastination. Secure attachment, academic enthusiasm, openness to experience, and conscientiousness had a significant negative relationship with procrastination, while insecure attachment and neuroticism had a significant positive relationship with procrastination.

Tables below present the stepwise regression analysis results for predictor variables significantly related to procrastination.

Table 2

Stepwise Regression Analysis for Predicting Procrastination Based on Academic Enthusiasm, Family Relationships, Neuroticism, Openness to Experience, and Conscientiousness

Step	Variables Entered into Equation	Regression Coefficient	R^2	Adjusted R^2	F	df1	df2	Significance
1	Conscientiousness	.255	.065	.065	13.73	1	198	.000
2	Conscientiousness + Neuroticism	.307	.094	.029	6.408	1	197	.012
3	Conscientiousness + Neuroticism + Openness to Experience	.349	.122	.027	6.134	1	196	.014

As shown in Table 2, among the variables examined, conscientiousness with a regression coefficient of .255 entered the regression equation in the first step and could predict 6.5% of the variance in procrastination ($p < .000$). In the second step, neuroticism with a regression coefficient of .307 entered the equation alongside conscientiousness, predicting 9.4% of the variance in procrastination, with neuroticism alone explaining 2.9% of the variance ($p < .012$). In the third step, openness to experience with a regression coefficient of .349 entered the model, predicting 12.2% of the variance in procrastination alongside conscientiousness and neuroticism, with openness to experience alone explaining 2.7% of the variance ($p < .014$).

Table 3

One-Way ANOVA for Evaluating the Significance of the Contribution of Conscientiousness, Neuroticism, and Openness to Experience in Predicting Procrastination

Variable	Number	Sum of Squares	df	Mean Square	F	Significance
Conscientiousness	Regression	5047.072	1	5047.072	13.73	.000
	Residual	72748.108	198	367.597		
	Total	77831.180	199			
Neuroticism	Regression	7340.040	2	5047.072	13.73	.000
	Residual	70491.113	197	367.59		
	Total	77831.18	199			
Openness to Experience	Regression	9479.334	3	3159.77	9.061	.000
	Residual	68351.84	196	348.73		
	Total	77831.18	199			

As shown in Table 3, the predicted shares at each stage were statistically significant and reliable ($p < .000$).

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Table 4

Raw and Standardized Coefficients of the Regression Equation for Predicting Procrastination Based on Conscientiousness, Neuroticism, and Openness to Experience

Variable	Raw Coefficient (B)	Standard Error	Beta Coefficient	T	Significance
Constant	95.021	14.89	-	6.378	.001
Conscientiousness	-1.46	.324	-1.01	-4.53	.001
Neuroticism	.678	.252	-.433	-2.68	.008
Openness to Experience	.663	.268	.405	2.47	.014

As shown in Table 4, the raw and standardized coefficients of the regression equation for predicting procrastination based on conscientiousness, neuroticism, and openness to experience are presented, all of which are statistically significant.

4. Discussion and Conclusion

This study aimed to determine the prediction of academic procrastination based on attachment styles to parents, family relationships, personality traits, and academic enthusiasm among students in Divaniye. The results indicated that all the mentioned variables had a significant relationship with procrastination except for extraversion and agreeableness. Additionally, among these correlated variables, personality traits had the power to predict procrastination.

No previous research has been conducted under this title to compare the findings with other studies. However, some previous studies have shown the relationship between some of the variables studied and procrastination, including Barber Celik and Odaci (2022), which showed the relationship between attachment styles and procrastination (Berber Çelik & Odaci, 2022); and Abbasi et al. (2015), which showed the relationship between enthusiasm and procrastination (Abbasi et al., 2015).

To explain the negative relationship between academic enthusiasm and family relationships with procrastination, it can be said that procrastination means neglecting important tasks and engaging in less important, enjoyable activities, which leads to delayed tasks and a lack of goal orientation in important academic matters. School anxiety refers to worry and anxiety about school and its aspects. Although students do not enjoy doing assignments, anxiety drives them to engage in and complete their tasks. Therefore, it may not have a significant relationship with procrastination, which is characterized by delaying assignments.

In explaining the negative relationship between academic enthusiasm and school anxiety, it can be said that academic enthusiasm means a desire and inclination towards school, teachers, the learning environment, and a love for learning. With academic enthusiasm, students find it easier to tolerate learning ambiguities, endure learning difficulties, set goals, and act according to a plan (Samarkovski, 2014). Therefore, it is expected that a student with academic enthusiasm will experience less school anxiety.

To explain the negative relationship between secure attachment styles and the positive relationship between insecure attachment styles with school anxiety, it can be said that in secure attachment, the student trusts their parents, has good relationships with them, does not have separation or rejection anxiety, and thus can manage their life more responsibly. They are also confident that their parents will support them in school matters. Conversely, someone with insecure attachment avoids tasks, has cognitive ruminations that waste psychological energy, experiences conflicts with parents, has peer relationship problems, and believes their parents do not support them (Tussey et al., 2018). Therefore, it is expected that a person with a secure attachment style will have lower school anxiety, while someone with an insecure attachment style will have higher school anxiety.

To explain the negative relationship between openness to experience and extraversion with procrastination, it can be said that openness to experience is associated with cognitive intelligence, and it implicitly assesses the ability to think, embrace learning, and creativity. Therefore, increasing openness to experience may enhance cognitive intelligence, leading to quicker and better learning, reducing fear of learning, and making it easier to solve and present assignments. Therefore, such a student is expected to have lower school anxiety. Regarding extraversion, one of its key indicators is activity, and another is positive emotions. These traits may help individuals experience positive emotions rather than school anxiety, thereby reducing school anxiety. Additionally, an extroverted person is sociable and friendly (Xie & Cobb, 2020). Therefore, such a student may establish better relationships with teachers and students, resulting in

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more positive emotions at school and reduced school anxiety.

Finally, neuroticism had a significant positive relationship with school anxiety. This finding can be explained by the fact that individuals with neuroticism experience anxiety, suffer from depression, are sensitive to criticism, have mental preoccupations, are dissatisfied with themselves, lack self-belief, harbor anger and resentment towards themselves and others, leading their energy to be consumed by cognitive ruminations, anxious thoughts, and negative emotions instead of learning and academic tasks (Aravand et al., 2023). Therefore, neuroticism may increase academic procrastination.

Overall, the results of this study showed that personality traits are higher-order variables that have the power to predict academic procrastination. Although academic enthusiasm, family relationships, and secure and insecure attachment styles do not have predictive power, they have a significant negative relationship with procrastination. This means that increasing academic enthusiasm, improving family relationships, and secure attachment to parents can reduce procrastination in students.

5. Limitations & Suggestions

This study had limitations like other research, including the non-random selection of samples and the statistical population being limited to high school students in Divaniye, making it difficult to generalize the results to other cities. It is recommended that future researchers use structural equation modeling to examine causal relationships between variables. Additionally, academic counselors should focus on improving conscientiousness, openness to experience, and neuroticism in students to reduce academic procrastination.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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