

# Predictors of Academic Procrastination in University Students: Academic Motivation, Hope, and Personality<sup>1</sup>

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This study addressed the variables of academic motivation, hope, and personality characteristics as predictors of academic procrastination among university students. The participants of the study consisted of 659 university students studying at a university in the Central Anatolia Region of Turkey and selected from the students who volunteered to participate in the study. The Academic Procrastination Scale, the Academic Motivation Scale, Hope Scale, the Adjective-Based Personality Scale and the Personal Information Form were used to collect data. Employing the relational research model, the study used the SPSS-22 program. In the analysis of the data, t test and anova analyses were used for descriptive statistics. Correlation analysis was performed to understand the relationship between the variables, and hierarchical regression analysis was performed to determine the variables' prediction level of academic procrastination. The results concluded that university students' academic procrastination behavior differed significantly according to students' gender, grade level, and faculty type, and that male students procrastinated more than female students. Another finding of the study was that academic motivation, responsibility, extroversion, and openness to experience significantly predicted academic procrastination. According to the study data, hope and personality's neuroticism and agreeableness dimensions did not have a significant effect on academic procrastination. The findings obtained are discussed in the light of the relevant literature

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**Keywords:** Academic procrastination, academic motivation, hope, personality, university students

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## INTRODUCTION

Although procrastination behavior is as old as human history, it has only recently been investigated as a subject of scientific research (Milgram et al., 1998). Knaus (2001) argues that procrastination emerged about 2.5 million years ago when the first humans were grouped into clans and delayed a clan-related task. Knaus (2001) argues that with the development of civilization, demands and tasks increased and thus procrastination became widespread, and states that the ancient Babylonian leader Hammurabi punished procrastination. Traces of procrastination behavior were later found in Ancient Egypt (Ferrari, 2000) and Romans (Knaus, 2001).

Procrastination is a behavior that can be observed at almost every age and in all areas of life. Procrastination behavior has been defined by researchers with an emphasis on different characteristics. Procrastination was defined by Solomon and Rothblum (1984) as delaying the completion of tasks without a valid reason until one feels uncomfortable. Schouwenburg (1992) stated that the unnecessary dimension in this definition is appropriate but argued that not all procrastination behaviors are accompanied by discomfort and suggested that the discomfort dimension limits procrastination behavior.

According to Ferrari (1992), procrastination behavior occurs when an individual leaves the tasks to the last minute and delays making the decisions he/she needs to make, even though he/she has enough time; this is a behavioral problem. According to Lay (1986), procrastination is defined as not doing the work that needs to be done without logical justification or postponing the behavior to a later date.

When the related literature is examined, it is seen that procrastination is handled in three sub-dimensions and these dimensions are named as cognitive, affective and behavioral. According to Lay (1986), the incompatibility between goals, wishes, thoughts, and behaviors constitutes the cognitive dimension of procrastination. Çakıcı (2003) defined the affective dimension of procrastination as '*feeling distressed about the chronic inability to start, maintain, or complete the work that one has to do within a certain period of time.*' The behavioral dimension of procrastination includes the individual's turning to other actions that are not urgent and important for that moment, such as watching television, meeting with friends, or tidying up the desk to avoid doing the work that needs to be done (Albayrak, 2014).

Academic procrastination, which is one of the subtypes of procrastination behavior, is defined by Akinsola et al. (2007) as postponing various responsibilities such as submission of homework or term papers and enrollment in courses to be held by teachers and administrators until the deadlines are given. Akbay and Gizir (2010) define academic procrastination as the delay of tasks, including tasks of academic origin, for several reasons.

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Rothblum et al. (1986) define academic procrastination as a purposeful and unnecessary delay in starting or completing basic academic tasks such as preparing for exams on the last day, leaving the assignment to be submitted at the end of the semester until the last moment, academic administrative and participation tasks, and state that procrastination behavior is not only a deficiency in time management skills, but a complex and holistic phenomenon with cognitive, emotional and behavioral dimensions.

Ellis and Knaus (1977) reported that nearly 95% of university students exhibit academic procrastination behavior. Onwuegbuzie (2004), in his analysis to determine the frequency of academic procrastination behavior in university students, found that approximately 42% of the students postponed doing their term papers, 39.3% postponed studying for exams, and 60% postponed the weekly required reading. In the same study, he also investigated the extent to which participants wanted to reduce their procrastination tendencies and found that approximately 65% of individuals with procrastination behavior wanted to reduce their procrastination behavior or get rid of this behavior completely. When the studies are examined, it is seen that procrastination behavior is quite common and causes problems in people's lives.

When the literature on the variables that cause procrastination behavior is examined, one of the main reasons for procrastination is the personality traits of the individual (Albayrak, 2014; Çam, 2013; Doğan et al., 2014; Üçan, 2019). A low sense of responsibility (Aydoğan, 2008), an individual's inability to manage time (McCown et al., 1987), difficulty concentrating, irrational beliefs (Howell & Buro, 2009), cognitive distortions (Kağan, 2010), and problem avoidance behaviors (Bridges & Roig, 1997) are directly related to procrastination behavior. In addition, fear of failure in achievement-oriented societies (Burka & Yuen, 1983) and the desire to rebel against authority (Sommer, 1990) can be considered reasons for procrastination. Students who make a habit of procrastination in their educational life may experience negative consequences such as not achieving enough success to pass semester courses, prolonging the duration of education, and even being dismissed from university. In addition to anxiety and chronic stress, many negative emotions, such as low self-efficacy, feelings of guilt, and perception of failure, may emerge in students who engage in academic procrastination behavior during this process, which may lead to psychological problems (Akbay & Gizir, 2010; Haycock et al., 1998).

When the level of knowledge about academic procrastination and the variables that cause it increase, there is a need for such a study with the belief that the ability to cope with this behavior, which leads to many negative consequences, will increase. Related literature has examined academic motivation (Akbay & Gizir, 2010; Balkıs et al., 2006; Bosato, 2001; Bulut, 2014; Demir, 2017; Demir GÜDÜL, 2015; Kağan, 2009; Kandemir et al., 2016; Senecal et al., 1995), hope (Alexander & Onwuegbuzie, 2007; Akdamar & Kızılkaya, 2020; Odacı & Kaya, 2019; Özer & Altun, 2011), and personality traits (Albayrak, 2014; Çam, 2013; Doğan et al., 2014; Lee et al., 2006; Üçan, 2019; Watson, 2001).

### **The present study**

The studies in the literature show that the problem of academic procrastination is one of the important concepts affecting the educational process of the individual and the findings obtained from the studies listed above reveal the relationship between individuals' motivation for academic studies, hope and personality traits and academic procrastination behaviour. In this context, the main problem of this study was to examine the relationship between academic motivation, hope, personality trait variables, and academic procrastination behavior among university students. Within the scope of this study, we aimed to reveal the level of prediction of academic motivation, hope, and personality trait variables on academic procrastination behavior. This study will contribute to the literature because it is one of the first studies in which academic motivation, hope, and personality trait variables are considered together as variables expected to explain academic procrastination.

### **METHOD**

In this section, the design of the study, the participants, the data collection tools and the techniques used in the analysis of the data are given.

#### **Research Design**

This study used a correlational research model (Büyüköztürk et al., 2024). The correlational research method is defined by Büyüköztürk et al. (2024) as "research models that examine relationships and connections."

Researchers prefer the correlational research model because it can better explain phenomena by revealing possible relationships and making predictions (Büyüköztürk, 2024).

### **Participants**

The participants of this study consisted of students who were continuing their education at a university in the Central Anatolia Region of Turkey in faculties that provided at least four years of education and volunteered to participate in the study. A stratified purposive sampling method was preferred. This method 'is preferred to show and describe the characteristics of certain subgroups of interest and to allow comparisons between them' (Büyüköztürk et al., 2024). The data of the study were collected from male and female students studying in the 1st, 2nd, 3rd and 4th grades in the Faculty of Education, Faculty of Economics and Administrative Sciences (FEAS), Faculty of Medicine, Faculty of Engineering, and Faculty of Arts and Sciences (FEF) of the relevant university that provides at least 4-year education. A total of 659 students, 414 (62.8%) of whom were female and 245 (37.2%) of whom were male, participated in the study. Of the students, 106 (16.1%) were 1st grade, 141 (21.4 %) were 2nd grade, 152 (23.1 %) were 3rd grade, and 260 (39.5 %) were 4th grade students.

### **Data Collection Tool**

The Academic Procrastination Scale, Academic Motivation Scale, Trait Hope Scale, Adjective-Based Personality Test, and Personal Information Form were used to collect data.

#### ***Academic Procrastination Scale***

Çakıcı (2003) developed an Academic Procrastination Scale to determine students' academic procrastination behaviors. It includes a total of 19 items, 12 of which are negative and seven of which are positive, including academic tasks such as preparing for exams, studying, and preparing projects, which students are responsible for throughout their education life. The Cronbach's alpha reliability coefficient of the scale was .92. The Cronbach's alpha coefficient for the first factor of the scale consisting of two factors was .89, and the Cronbach's alpha coefficient for the second factor was .84 (Çakıcı, 2003). In this study, Cronbach's alpha coefficient of the scale was .88.

#### ***Academic Motivation Scale***

Bozanoğlu (2004) developed the Academic Motivation Scale to identify individual differences in students' academic motivation levels. The scale consists of 20 items and has a five-point Likert-type response option. In studies conducted to calculate the reliability of the scale, the test-retest method was used, and the correlation between the two applications was found to be .87. It was observed that the calculated Cronbach's alpha internal consistency coefficients ranged between .77-.85 in the same group at different times and between .77-.86 in different groups. Cronbach's alpha coefficient was calculated for the whole scale was .84 (Bozanoğlu, 2004). In this study, the Academic Motivation Scale was used by taking the total score, and Cronbach's alpha coefficient of the scale was calculated to be .90.

#### ***Hope Scale***

The original form of the scale was developed by Snyder et al. (1991) with the aim of measuring individuals' levels of trait hope. There were 12 items in the scale, which were adapted into Turkish by Tarhan and Bacanlı (2015). Each dimension of the scale has two sub-dimensions consisting of four items, which are named 'alternative ways thinking' and 'activist thinking.' One of the statements in the four items measuring the dimensions was about the past, two about the present, and one about the future. The remaining four scale items were filler items that were irrelevant to the level of hope to be measured. The Continuous Hope Scale is an eight-point Likert-type scale that evaluates over eight items measuring two dimensions, and filler items are not scored. The internal consistency coefficient of the Trait Hope Scale was calculated as .86 for the total scale score, .78 for the sub-dimension of alternative ways of thinking, and .81 for the sub-dimension of activist thoughts (Tarhan & Bacanlı, 2015). In this study, the Cronbach's alpha coefficient for the Trait Hope Scale was .84.

#### ***Adjective Based Personality Test***

It was developed by Bacanlı et al. (2009) to determine individuals' five-factor personality traits. It consists of the dimensions of neuroticism, conscientiousness, agreeableness, extraversion, and openness to experience in

the five-factor model. The Adjective-based Personality Test is a seven-point Likert-type scale consisting of 40 pairs of contrasting adjectives. In the factor analysis of the scale's construct validity, it was observed that the test items were grouped under five factors. These factors explained 52.63% of the total variance in the Adjective-Based Personality Test. The results of the reliability analysis showed that the internal consistency coefficients for all sub-dimensions of the test ranged from .73 and .89. The test-retest correlation coefficient between the factors was between .68 - .86 (Bacanli et al., 2009). In this study, Cronbach's alpha coefficients for the Adjective-Based Personality Test were .85, .67, .80, .72, and .84, respectively.

### ***Personal Information Form***

A Personal Information Form was prepared by the researcher and consisted of questions to determine the demographic information of the participants. With the Personal Information Form, information on gender, age, faculty of study, and grade level was obtained based on the participants' volunteerism.

### **Data Collection and Analysis**

In the data analysis, a t-test and One-Way Analysis of Variance were used to determine whether there was a significant difference in academic procrastination behavior according to demographic variables. Sheffe's test, one of the post-hoc tests, was used to determine which categories differed as a result of one-way variance analysis. Correlation analysis was used to understand the relationship between the variables, and hierarchical regression analysis was used to determine the level of prediction of the independent variables on the dependent variable: academic procrastination. The SPSS-22 program was used for data analysis, with a significance level of .05.

## **FINDINGS**

### **Findings Regarding the Examination of Academic Procrastination Behavior According to Demographic Variables**

#### ***Findings Regarding the Investigation of Academic Procrastination Behaviors of University Students According to Gender***

The results of the t-test for independent samples applied to determine whether the mean academic procrastination scores of university students differed significantly according to gender are given in Table 1.

**Table 1. t Test Results of Academic Procrastination Scores of University Students According to Gender Variable**

|                          | <i>Gender</i> | <i>N</i> | $\bar{X}$ | <i>ss</i> | <i>t</i> | <i>p</i> |
|--------------------------|---------------|----------|-----------|-----------|----------|----------|
| Academic Procrastination | Female        | 414      | 50.59     | 13.49     | 5.95     | .045     |
|                          | Male          | 245      | 56.92     | 12.66     |          |          |

When Table 1 is examined, it is seen that the academic procrastination scores of university students show a significant difference according to gender, and the academic procrastination scores of male students were higher ( $t(657)=5.95, p<.05$ ). Based on the data obtained, it can be said that academic procrastination exhibited by males is higher than that exhibited by females.

#### ***Findings Related to the Investigation of Academic Procrastination Behaviors of University Students According to Class Level***

One-Way Analysis of Variance (ANOVA) was applied to determine whether there was a significant difference in the mean academic procrastination scores of university students according to the grade-level variable. The descriptive statistics of academic procrastination mean scores according to grade level are given in Table 2, and the results of the one-way analysis of variance are given in Table 3.

**Table 2. Descriptive Statistics of Academic Procrastination Scores of University Students According to Grade Level**

|                          | <i>Grade Level</i> | <i>N</i> | $\bar{X}$ | <i>Ss</i> |
|--------------------------|--------------------|----------|-----------|-----------|
| Academic Procrastination | 1st grade          | 106      | 51.96     | 11.78     |
|                          | 2nd grade          | 141      | 59.12     | 13.75     |
|                          | 3rd grade          | 152      | 50.23     | 13.03     |
|                          | 4th grade          | 260      | 51.58     | 13.42     |

**Table 3. Variance Analysis Results of Academic Procrastination Scores of University Students According to Grade Level**

| <i>Source of Variance</i> | <i>Sum of Squares</i> | <i>SH</i> | <i>Mean Squares</i> | <i>F</i> | <i>p</i> |
|---------------------------|-----------------------|-----------|---------------------|----------|----------|
| Intergroup                | 7091.88               | 3         | 2363.96             | 13.658   | .00*     |
| Intragroup                | 113366.38             | 655       | 173.07              |          |          |
| Total                     | 120458.26             | 658       |                     |          |          |

\* $p < .01$

When Table 3 is examined, it can be seen that academic procrastination shows a significant difference according to grade level ( $F=13.65, p < .01$ ). Scheffe Test was conducted to determine between which groups academic procrastination behavior differed significantly and the test results are shown in Table 4.

**Table 4. Scheffe Test Results According to Grade Level**

| <i>Dependent Variable</i> | <i>Grade Level</i> | <i>Grade Level</i> | <i>Difference Between Means</i> | <i>p</i> |
|---------------------------|--------------------|--------------------|---------------------------------|----------|
| Academic Procrastination  | 2                  | 1                  | 7.165                           | .01*     |
|                           |                    | 3                  | 8.895                           | .00*     |
|                           |                    | 4                  | 7.543                           | .00*     |

\* $p < .01$

When Table 4 is examined, it can be seen that the academic procrastination scores of second-grade students are significantly higher than those of students in other grades.

***Findings Related to the Investigation of Academic Procrastination Behaviors of University Students According to the Type of Faculty of Study***

One-Way Analysis of Variance (One-Way ANOVA) was applied to determine whether there is a significant difference in the mean scores of academic procrastination behavior in university students according to the faculty of study. Descriptive statistics of academic procrastination scores according to the faculty of study are shown in Table 5, and the results of the One-Way Analysis of Variance are shown in Table 6.

**Table 5. Descriptive Statistics of Academic Procrastination Scores of University Students According to the Faculty Type**

|                          | <i>Faculty</i>                    | <i>N</i> | <i>X</i> | <i>Ss</i> |
|--------------------------|-----------------------------------|----------|----------|-----------|
| Academic Procrastination | Education                         | 153      | 51.93    | 13.68     |
|                          | Medicine                          | 97       | 61.99    | 13.67     |
|                          | Engineering                       | 108      | 55.26    | 11.11     |
|                          | Faculty of Economics              | 121      | 52.15    | 12.86     |
|                          | Faculty of Science and Literature | 180      | 48.08    | 12.67     |

**Table 6. Variance Analysis Results of University Students' Academic Procrastination Scores According to the Faculty Type**

| <i>Source of Variance</i> | <i>Sum of Squares</i> | <i>SH</i> | <i>Mean Squares</i> | <i>F</i> | <i>p</i> |
|---------------------------|-----------------------|-----------|---------------------|----------|----------|
| Intergroup                | 12998.07              | 4         | 3249.52             | 19.77    | .00*     |
| Intragroup                | 107460.19             | 654       | 164.31              |          |          |
| Total                     | 120458.26             | 658       |                     |          |          |

\* $p < 0.01$ 

Table 6 shows that academic procrastination behavior differed significantly according to the faculty variable ( $F=19.77$ ,  $p < .05$ ). Scheffe Test was conducted to determine which groups showed a significant difference between academic procrastination behavior and the test results are shown in Table 7.

**Table 7. Scheffe Test Results According to Faculty Type**

| <i>Dependent Variable</i> | <i>Faculty</i> | <i>Faculty</i>                    | <i>Difference Between Means</i> | <i>p</i> |
|---------------------------|----------------|-----------------------------------|---------------------------------|----------|
| Academic Procrastination  | Medicine       | Engineering                       | 6.730                           | .007*    |
|                           |                | Faculty of Economics              | 9.840                           | .000*    |
|                           |                | Faculty of Science and Literature | 13.905                          | .000*    |
|                           |                | Education                         | 10.055                          | .000*    |
|                           | Engineering    | Medicine                          | -6.730                          | .007*    |
|                           |                | Faculty of Economics              | 3.110                           | .500     |
|                           |                | Faculty of Science and Literature | 7.174                           | .000*    |
|                           |                | Education                         | 3.325                           | .373     |

\* $p < 0.01$ 

Table 7 shows that there is a significant difference between the academic procrastination behavior of the students studying in the Faculty of Medicine and all other faculties, and between the Faculty of Engineering and the Faculty of Science and Letters. According to the results obtained, the highest procrastination behavior score was observed in students of the Faculty of Medicine.

## Findings on the Relationship between Academic Procrastination Behavior of University Students and Independent Variables

Correlation Analysis was conducted to determine the relationships between academic procrastination (AP), academic motivation (AMO), hope and the sub-dimensions of personality such as neuroticism (NEU), openness to experience (OP), extroversion (EX), agreeableness (AG) and conscientiousness (CON) and the results of the analysis are shown in Table 8.

**Table 8. Correlation Coefficients Between Variables and Arithmetic Mean and Standard Deviation Values of Variables**

|      | AP      | AMO    | Hope   | NEU    | EX     | OP     | AG     | CON    |
|------|---------|--------|--------|--------|--------|--------|--------|--------|
| AP   | 1       |        |        |        |        |        |        |        |
| AMO  | -.537*  | 1      |        |        |        |        |        |        |
| Hope | -.303*  | .486*  | 1      |        |        |        |        |        |
| NEU  | .169*   | -.200* | -.196* | 1      |        |        |        |        |
| EX   | -.117*  | .235*  | .422*  | .000   | 1      |        |        |        |
| OP   | -.092** | .260*  | .341*  | .053   | .645*  | 1      |        |        |
| AG   | -.199** | .222*  | .285*  | -.101* | .435*  | .522*  | 1      |        |
| CON  | -.447** | .395*  | .414*  | -.040  | .528*  | .499*  | .520*  | 1      |
| X    | 52.947  | 67.886 | 49.059 | 24.792 | 43.672 | 40.931 | 46.288 | 35.933 |
| Ss   | 13.530  | 13.489 | 8.570  | 7.503  | 10.350 | 7.535  | 9.630  | 8.303  |

\* $p < 0.01$ , \*\* $p < 0.05$

As seen in Table 8, there was a negative and moderate ( $r = -.537$ ,  $p < .01$ ) significant relationship between academic procrastination and academic motivation, and a negative and moderate ( $r = -.303$ ,  $p < .01$ ) significant relationship between hope and academic procrastination behavior. Accordingly, it can be interpreted that, as the level of academic motivation and hope increases, academic procrastination decreases.

There was a positive and weak relationship between neuroticism ( $r = .169$ ,  $p < .01$ ), extroversion ( $r = -.117$ ,  $p < .01$ ), openness to experience ( $r = -.092$ ,  $p < .05$ ), agreeableness ( $r = -.0199$ ,  $p < .05$ ), and academic procrastination, and a negative and weak relationship between responsibility ( $r = -.447$ ,  $p < .05$ ) and academic procrastination. Based on this finding, it can be said that as the level of neuroticism increases, academic procrastination behavior increases, whereas academic procrastination decreases as responsibility, openness to experience, agreeableness, and extroversion increase.

## Findings on Variables Predicting Academic Procrastination in University Students

A hierarchical regression analysis was conducted to determine the degree to which academic motivation, hope and personality sub-dimensions of neuroticism, openness to experience, extroversion, agreeableness and conscientiousness predicted academic procrastination in university students and the results are shown in Table 9.

**Table 9. Hierarchical Regression Analysis Results on Prediction of Academic Procrastination Scores of University Students**

| Predictors              | Model 1 |      |         | Model 2 |      |         | Model 3 |      |        |
|-------------------------|---------|------|---------|---------|------|---------|---------|------|--------|
|                         | B       | SH   | $\beta$ | B       | SH   | $\beta$ | B       | SH   | B      |
| AMO                     | -.539   | .033 | -.537*  | -.512   | .038 | -.511*  | -.426   | .037 | -.425* |
| Hope                    | -       | -    | -       | -.87    | .059 | -.055   | -.024   | .060 | -.015  |
| CON                     | -       | -    | -       | -       | -    | -       | -.647   | .067 | -.097* |
| AG                      | -       | -    | -       | -       | -    | -       | -.024   | .054 | -.017  |
| OP                      | -       | -    | -       | -       | -    | -       | .292    | .078 | .163*  |
| EX                      | -       | -    | -       | -       | -    | -       | .133    | .056 | .102** |
| NEU                     | -       | -    | -       | -       | -    | -       | .099    | .058 | .055   |
| R <sup>2</sup>          | .298    |      |         | .291    |      |         | .396    |      |        |
| Adjusted R <sup>2</sup> | .298    |      |         | .289    |      |         | .390    |      |        |

\* $p < .001$ , \*\* $p < .05$

It was found that academic motivation and the subdimensions of the personality trait variables of responsibility, openness to experience, and extroversion were significant predictors in explaining the academic procrastination behaviors of university students. In the 3-step hierarchical regression analysis, academic motivation was entered in the first step, hope in the second step, and personality traits in the third step, based on correlation coefficients.

It was found that the unique contribution of academic motivation entered into the model in the first step was significant and explained 29.8% of the total variance ( $= -.537, p < .001$ ). It was concluded that the hope variable entered in the second step did not significantly predict academic procrastination ( $= .055, p > .001$ ). In the third step, the subdimensions of personality traits were added to the hierarchical regression analysis. Conscientiousness ( $= -.097, p < .001$ ), extraversion ( $= .102, p < .05$ ), and openness to experience ( $= .163, p < .001$ ) were significant predictors of academic procrastination, while neuroticism ( $= .055, p > .05$ ) and agreeableness ( $= -.017, p > .05$ ) personality traits had no significant effect on academic procrastination. As a result of the hierarchical regression analysis, it was concluded that all variables together explained 39% of the variance in academic procrastination.

## DISCUSSION, CONCLUSION AND RECOMMENDATIONS

### *Discussion of the Findings Regarding the Investigation of Academic Procrastination Behavior in University Students According to Demographic Variables*

When the data obtained as a result of the research were analyzed, it was observed that there was a significant difference in the mean academic procrastination scores of university students according to gender, and the mean academic procrastination score of males was higher. Consistent with the results of this study, studies in the literature (Beswick et al., 1988; Haycock et al., 1998; Senécal et al., 1995; Solomon & Rothblum, 1984; Watson, 2001; Uzun-Özer et al., 2009) as well as studies that concluded that gender did not show a significant difference in academic procrastination (Choi & Moran, 2009; Demir, 2017; Kachgal et al., 2001; Milgram et al., 1995; Onwuegbuzie, 2004; Owens & Newbegin, 2000; Pychyl et al., 2002; Solomon & Rothblum, 1984; Uzun-Özer, 2005; Yiğit & Dilmaç, 2011).

When the data obtained from the research are analyzed, it is revealed that grade level is effective in showing a significant difference in academic procrastination tendencies seen in university students. When the literature is examined, it is seen that there are studies that have similar findings with the results of this research (Albayrak, 2014; Berber Çelik, 2014; Çelikkaleli & Akbay, 2013; Ekinci, 2011; Rosário et al., 2009; Şendoğan, 2020). In his study on university students, Akdoğan (2013) concluded that, consistent with the results of this study, the relationship between students' grades and their mean academic procrastination scores was significant. Studies have also found that academic procrastination does not show a significant difference



according to grade level (Dikmen, 2021; Gün et al., 2019; Kaplan, 2017; Oran, 2016; Şendoğan, 2020; Uzun-Özer et al., 2009; Üçan, 2019; Yıldırım, 2015). As a result of the research conducted by Arslan (2013), it was determined that grade level did not create a significant difference in the frequency of academic procrastination behavior.

Another finding obtained from the study is that the academic procrastination behaviors of university students show a significant difference according to the faculty of study. Similar to the results of this study, other studies have concluded that academic procrastination behavior differs significantly according to faculty. Dikmen (2021) conducted a study on undergraduate students and concluded that students studying in Health Sciences procrastinated less than those studying in Science and Social Sciences. Kınık (2015) stated that students in the Faculty of Law exhibited less academic procrastination behavior than students in the Faculty of Science and Faculty of Education, and Şendoğan (2020) reached a similar conclusion.

### ***Discussion of the Findings Related to Academic Motivation, Hope and Personality Traits as Predictors of Academic Procrastination***

When the results of the research are examined, it is seen that the academic motivation variable significantly predicts academic procrastination in a negative direction in university students. In other words, as the level of academic motivation increases among university students, the frequency of academic procrastination behavior decreases.

In the literature, there are many studies on the relationship between academic procrastination and academic motivation (Beck et al., 2000; Beswick et al., 1988; Kandemir et al., 2016; Kaplan, 2017; Karadeniz, 2020). Senecal et al. (1995) examined the relationship between academic procrastination and anxiety, depression, self-esteem and academic motivation and found that the effect of academic motivation on academic procrastination behavior was significant.

When the results of the research are examined, it is seen that the variables of conscientiousness, openness to experience and extraversion, which are the sub-dimensions of the Big Five personality, significantly predict academic procrastination, whereas the sub-dimensions of agreeableness and neuroticism are not a significant variable in predicting academic procrastination. While conscientiousness personality traits significantly predicted academic procrastination in a negative direction, a positive relationship was found between extraversion and openness to experience traits, and academic procrastination. Studies in the literature support or contradict these findings.

Albayrak (2014) examined the effect of personality traits on academic procrastination and concluded that agreeableness and conscientiousness were significant variables in predicting academic procrastination. In the same study, it was found that the neuroticism, extraversion, and openness to experience sub-dimensions were not significant predictors of academic procrastination. McCrown et al. (1987) concluded that the positive relationship between procrastination behavior and extroverted personality is significant. Johnson and Bloom (1995), on the other hand, found that there was no significant relationship between the tendency to procrastinate and the extroversion sub-dimension of personality, whereas the tendency to procrastinate increased as the neuroticism personality trait increased.

When the results of the study were analyzed, hope did not significantly predict academic procrastination. This finding contradicts those of other studies in the literature. Many studies have examined the relationship between academic procrastination and hope, concluding that hope is a significant predictor of academic procrastination (Alexander & Onwuegbuzie, 2007; Jackson et al., 2003; Kandemir, 2014; Uzun-Özer, 2009; Yıldız & Yıldız, 2016; Yılmaz, 2016).

In this study, academic motivation, hope, and personality trait variables are discussed as predictors of academic procrastination, and the findings are discussed in light of the literature. This study has some limitations and contributes to the related literature. It would be useful to consider the following suggestions within the framework of the study's limitations and findings:

The fact that the study was designed in a correlational model can be considered as one of the limitations of the study, and in this context it can be suggested to conduct experimental studies that include programme development studies to reduce academic procrastination behaviour, or mixed-methods studies that include qualitative evaluations.

One of the methodological limitations of the study is related to the sample selection. The sample of the study consisted of volunteer students studying at a university in the Central Anatolia region of Turkey. Considering

the generalisability of the research findings, researchers may be recommended to conduct studies with larger samples that include university students from different regions.

Although this study has some limitations, the finding that university students with high academic motivation and responsible personality traits have lower levels of academic procrastination contributes to the relevant literature and provides important data for practitioners working in this field. In this context, it can be suggested that career development centres or psychological support units of universities should conduct psychoeducational studies, organise seminars or conferences to help students cope with academic procrastination.

## Declarations

### Conflict of Interest

No potential conflicts of interest were disclosed by the author(s) with respect to the research, authorship, or publication of this article.

### Ethics Approval

The formal ethics approval was granted by the Social and Human Sciences Research and Publication Ethics Committee of Nigde Omer Halisdemir University. We conducted the study in accordance with the Helsinki Declaration in 1975.

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### Research and Publication Ethics Statement

The study was approved by the research team's university ethics committee of the Nigde Omer Halisdemir University (Approval Number/ID: 26/10/2022/12).

### Contribution Rates of Authors to the Article

1st author contributed 50%, 2nd author 50%

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