**Investigating Academic Procrastination within the Framework of Temporal Motivation Theory: The Impact of Hopelessness and Academic Resilience**

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**Abstract**

Academic procrastination represents a significant challenge frequently encountered among high school students, negatively impacting their academic outcomes. It is posited that levels of hopelessness and academic resilience may serve as predictors of academic procrastination. Consequently, the objective of this study is to examine the extent to which hopelessness and academic resilience predict academic procrastination among high school students. The study involved 625 participants, comprising 337 females (53.9%) and 288 males (46.1%), who were selected through a convenience sampling method from various high schools in a small city in Türkiye's Aegean Region during the 2023-2024 academic year. Participants' ages ranged from 13 to 18 years, with a mean age of 15.52 years (SD = 1.13). In order to assess academic procrastination, the researchers utilized the Academic Procrastination Scale. The Beck Hopelessness Scale was employed to evaluate levels of hopelessness, while the Academic Resilience Scale was used to measure academic resilience. Additionally, a Demographic Information Form was administered to gather relevant demographic data. Data analysis was conducted using IBM SPSS 27.0 software, implementing Pearson correlation analysis and multiple linear regression analysis methods. The study specifically tested whether hopelessness and academic resilience significantly predicted academic procrastination among the participants. The findings revealed that the independent variables accounted for 17.3% of the total variance in academic procrastination. While academic resilience was not identified as a predictor of academic procrastination, hopelessness emerged as a significant predictor. These findings suggest developing psychological support programs to reduce hopelessness and academic procrastination in high school students. Furthermore, training programs designed to enhance academic resilience and strengthen social support networks may assist students in better managing procrastination behaviors. The results of this study were discussed within the framework of existing literature, and pertinent recommendations were provided for both researchers and practitioners in the field.

**Keywords:** Academic procrastination, Hopelessness, Academic resilience, High school students, Adolescents, Temporal Motivation Theory

**Citation**

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**Introduction**

High school marks a key period in adolescence, during which students shape their identities while pursuing academic goals for their future. This stage is characterized by significant physical and psychological transformations, during which adolescents engage in exploration of their identities, values, and life objectives. Such exploration is essential for individuals to define their roles within the social context and to cultivate a robust sense of identity (Erikson, 1968). Moreover, adolescence involves navigating critical developmental tasks, including the attainment of independence from familial influences, the strengthening of peer relationships, and the expansion of social networks. As adolescents navigate these tasks, they enhance their psychological independence and interact with academic and social environments to construct their self-concept (Steiner & Feldman, 2008, p. 20).

The academic development achieved during this period is not solely focused on the acquisition of knowledge; it also encompasses the development of vital skills such as self-discipline, responsibility, and time management (Zimmerman, 2002). These competencies not only facilitate academic achievement but also serve as foundational assets for future personal and professional efficacy. However, this period is concurrently marked by heightened emotional variability and intensified external demands, both of which may impede adolescents’ capacity to sustain academic engagement and fulfill expected responsibilities. When such psychosocial stressors undermine progress in key developmental domains (particularly identity formation, autonomy, and goal-directed behavior) students may become increasingly susceptible to maladaptive coping mechanisms. Among these, academic procrastination frequently arises as a behavioral manifestation of disrupted motivation and self-regulatory functioning in response to internal conflict or contextual adversity (Steel, 2007).

**Conceptual Framework**

*Academic Procrastination*

Academic procrastination is characterized by the tendency to delay educational tasks, including the completion of assignments, examination preparation, and engagement in academic projects, often until deadlines are imminent (Steel & Klingsieck, 2016). Students exhibiting procrastination behaviors frequently postpone their obligations despite experiencing discomfort, stress, and a desire to overcome this tendency (Beswick et al., 1988; Milgram & Naaman, 1996). This phenomenon is commonly associated with a disconnect between intention and action, wherein students fail to convert their intentions to study into meaningful efforts (Schouwenburg, 1995). Consequently, they may resort to hastily completing tasks in proximity to deadlines, which often compromises the quality of their work and puts their academic performance at risk (Steel et al., 2011). Procrastination is notably prevalent among high school students, with studies indicating that over 50% demonstrate such behaviors (Ferrari et al., 1995; Uzun-Özer et al., 2009). This inclination may lead to diminished academic performance, a detachment from educational objectives, and adverse health effects, such as sleep deprivation and heightened stress levels (Balkis & Duru, 2009). Furthermore, procrastination can result in incomplete or subpar submissions, adversely affecting grades and overall academic achievement (Patrzek et al., 2015). The repercussions extend beyond scholastic achievement, influencing students' relationships with parents and peers and fostering negative emotions, including feelings of worthlessness, anxiety, and shame (Ashraf et al., 2019; Fee & Tangney, 2000). Therefore, it is imperative to recognize academic procrastination as a behavioral issue that carries significant developmental risks. Numerous theoretical frameworks elucidate the causes of academic procrastination. Psychoanalytic perspectives suggest that procrastination serves as a defense mechanism to alleviate anxiety related to academic responsibilities or is associated with ineffective parenting attitudes experienced during childhood, while behavioral theory shows that procrastination is linked to students' preference for engaging in enjoyable activities rather than academic tasks (Ferrari et al., 1995). Conversely, cognitive-behavioral theory proposes that procrastination arises from cognitive distortions, such as rigid beliefs like "If I fail, I will not be valued by others," which may engender anxiety and inhibit motivation (Çelik & Odacı, 2015). Empirical research has identified several factors contributing to procrastination, including fear of failure (Solomon & Rothblum, 1984), perfectionism (Flett & Hewitt, 2002), low self-regulation skills (Wolters, 2003), and perceptions of academic tasks as unimportant (Steel & König, 2006). In addition, personality traits, difficulties with emotional regulation, lack of motivation, ineffective time management, and low self-esteem have been correlated with procrastination behaviors (Cavusoglu & Karatas, 2015; Kağan et al., 2010; Shih, 2017). Environmental influences, such as unsatisfactory teacher behaviors and technological distractions, further exacerbate procrastination tendencies (Ackerman & Gross, 2005; Türel & Dokumacı, 2022). Temporal Motivation Theory (TMT) provides a comprehensive framework for understanding procrastination by linking motivation to temporal considerations. It posits that procrastination occurs when the perceived value of a task diminishes due to delayed outcomes, thereby lessening the urgency to act (Siaputra, 2010). Overall, academic procrastination arises from a complex interplay of personal and environmental factors, necessitating multidimensional strategies to mitigate its impact on students’ academic, social, and emotional development.

**Theoretical Framework**

*Temporal Motivation Theory (TMT)*

The Temporal Motivation Theory (TMT) integrates various theoretical frameworks to elucidate the phenomenon of procrastination by investigating how motivation to complete tasks is influenced by specific factors (Siaputra, 2010). According to TMT, motivation is contingent upon four key elements: expectancy (self-efficacy), value (task reward), delay, and sensitivity to delay (impulsivity) (Steel & König, 2006). These elements interact dynamically to determine the timing and manner in which individuals fulfill their obligations. Elevated self-efficacy and perceived task value serve to enhance motivation, whereas impulsivity and prolonged deadlines frequently lead to procrastination (Steel, 2007). The motivation can be mathematically represented by the equation: motivation = (expectancy × value) / (1 + impulsiveness × delay) (Steel & Klingsieck, 2016). Expectancy encompasses the confidence in achieving success in tasks; higher expectancy correlates with increased motivation. Value relates to the significance of the task reward; tasks that are enjoyable, meaningful, or confer a sense of accomplishment are regarded as more valuable. In contrast, delay, defined as the interval between effort and reward, can undermine motivation, particularly with respect to long-term objectives (Siaputra, 2010). Impulsivity, characterized by diminished self-control and distractibility, heightens sensitivity to delay, rendering immediate rewards more attractive and promoting procrastination behaviors (Steel, 2011). For instance, a high school student tasked with a term project may delay completion despite recognizing the long-term benefits associated with a high grade. Instead, the student may prioritize immediate gratifications, such as socializing or engaging with social media. As the deadline approaches, the perceived value of finalizing the project intensifies, prompting a last-minute effort to complete the task. This example illustrates how the interplay between perceived rewards, impulsivity, and temporal distance influences procrastination behaviors, consistent with the principles of TMT.

**The Relationship Between Academic Procrastination, Hopelessness, and Academic Resilience from the Perspective of Temporal Motivation Theory (TMT)**

Temporal Motivation Theory (TMT) posits that individuals exhibiting high self-efficacy are generally less inclined to procrastinate, particularly when they perceive that their efforts will lead to tangible rewards (Steel & König, 2006). Positive expectations regarding future achievements, commonly referred to as hope, serve to enhance motivation, whereas negative expectations, designated as hopelessness, tend to diminish it (Melges & Bowlby, 1969; Schrank et al., 2008). Individuals experiencing hopelessness frequently develop cognitive distortions, such as the belief that their goals are unattainable or the expectation of adverse outcomes (Abramson et al., 1989; Beck et al., 1974). These negative cognitive patterns undermine psychological resilience, significantly increasing the risk of depression and decreasing motivation (Henkel et al., 2002). In academic contexts, feelings of hopelessness can result in reduced commitment and motivation, thereby contributing to procrastination (Shiomi, 1995; Yılmaz, 2016). Research demonstrates that hopelessness is a significant predictor of academic procrastination among both high school and university students (Odacı & Kaya, 2019; Yıldız & Yıldız, 2016).

Conversely, academic resilience—defined as the capacity to effectively adapt to academic challenges—is strongly associated with a decrease in procrastination behaviors (Martin & Marsh, 2009; Wang et al., 1993). Resilient students display attributes such as confidence, goal-oriented behaviors, and proficient stress management strategies (Hwang & Shin, 2018; Waxman et al., 2012). The 5-C Model identifies five crucial components of resilience: confidence, coordination, control, calmness, and commitment (Martin & Marsh, 2006). Students who demonstrate resilience are prone to view failures as opportunities for learning, thereby maintaining positive expectations regarding success and motivation (Denissen et al., 2007). They are less likely to permit past setbacks to negatively influence their future efforts, instead interpreting challenges as essential steps toward the attainment of their goals. According to TMT, the value individuals attribute to tasks plays a significant role in shaping their motivation. Tasks perceived as unimportant or disconnected from future rewards often lead to feelings of boredom and a reduction in motivation, which in turn increases the propensity to procrastinate (Steel, 2007). However, students exhibiting high academic resilience frequently view academic tasks as integral to achieving long-term rewards, such as career advancement, thereby elevating the task's perceived value and associated motivation (Locke & Latham, 2002). For instance, resilient students may interpret challenging assignments as opportunities to cultivate skills essential for both academic and professional success. Empirical evidence supports the correlation between academic resilience and reduced procrastination. Studies involving high school students have established a negative relationship between resilience and procrastination behaviors (Astutik & Firdana, 2023; Ragusa et al., 2023). For example, research conducted with 991 students in Almeira indicated that higher levels of academic resilience corresponded to lower instances of procrastination (Ragusa et al., 2023). Additionally, motivational management training administered to students in Tehran has demonstrated efficacy in enhancing resilience and subsequently reducing procrastination rates (Hossinlou & Jadidi, 2020). These findings underscore the necessity of fostering resilience and cultivating positive expectations to mitigate procrastination while enhancing academic engagement.

In summary, TMT emphasizes the critical impact of expectancy and value dimensions on procrastination behaviors. Hopelessness diminishes motivation by undermining positive expectations, whereas academic resilience enhances motivation by elevating both expectations and perceived task value. For example, a high school student who feels hopeless about their academic future may believe that no amount of effort will lead to success. As a result, their expectancy is low, and they are more likely to delay or avoid studying for an important exam. In contrast, a student with high academic resilience is more likely to perceive challenges as opportunities for growth. They believe in their ability to succeed (high expectancy) and view the exam as valuable for their long-term goals (high value). As a result, they are less likely to procrastinate and more likely to engage in consistent academic effort, even when faced with stress or setbacks. Promoting resilience and fostering hope can serve as effective strategies to assist students in overcoming procrastination and achieving success in their academic pursuits.

**Importance of the Research**

This study seeks to extend the existing literature by examining the relationship between academic procrastination, hopelessness, and academic resilience within the framework of Temporal Motivation Theory (TMT). The academic development of high school students is pivotal, as it significantly impacts personal growth and future success in higher education (Eskin et al., 2008; Undheim & Sund, 2005). Postponing academic tasks such as exam preparation, homework, and similar responsibilities until the last minute—or failing to complete them at all—may result in insufficient learning and low academic performance (Çetin, 2016; Kim & Seo, 2015; Oran, 2018). During this period, students with low academic achievement may lose confidence in their academic future (Bayhan & Dalgıç, 2012), experience emotional difficulties due to stress and anxiety (Anlayışlı & Bulut-Serin, 2019; Karaman, 2020), and face conflicts with their parents (Kapıkıran, 2016). Academic failure may also lead to a pessimistic view of the future (Aydın et al., 2013). Therefore, academic procrastination can be considered an indirect cause of various problems related to academic underachievement. Maintaining sufficient academic performance in high school is important for ensuring healthy development and preparing students for future success. Moreover, procrastination in this period may become a learned behavior, negatively affecting future educational experiences (Ferrari et al., 1995; Owens & Newbegin, 1997). In this context, academic procrastination can be considered a behavioral problem that affects high school students' development in a multidimensional manner, necessitating both preventive and intervention-based efforts. Effectively addressing such behaviors requires identifying and eliminating the underlying factors that trigger procrastination. Therefore, studies that examine the causes and predictors of academic procrastination are essential for developing preventive services and promoting self-regulation skills among high school students.

Temporal Motivation Theory underscores the significance of psychological factors, such as expectations, perceived value, delays, and overall motivation, thereby providing a robust framework to elucidate how hopelessness and academic resilience affect procrastination behaviors. Hopelessness may diminish motivation by reducing expectations of reward, whereas academic resilience can mitigate this decline by promoting dedication to long-term objectives. While previous studies have investigated hopelessness (Yılmaz, 2016) and academic resilience (Astutik & Firdana, 2023) as predictors of procrastination, no comprehensive research has concurrently analyzed the influence of both factors on academic procrastination. This study aims to bridge this gap, offering valuable insights for school counselors in developing effective preventive and remedial strategies for high school students who experience challenges with procrastination.

The objective of this study is to analyze the impact of hopelessness and academic resilience on academic procrastination among high school students. To further this main goal, the following sub-objectives have been articulated:

1. To determine whether hopelessness serves as a significant predictor of academic procrastination levels in high school students.

2. To ascertain whether academic resilience significantly predicts the levels of academic procrastination in high school students.

**Method**

**Research Design**

This study employed a relational survey design to investigate the relationships among high school students' academic procrastination, hopelessness, and academic resilience levels. A relational survey design is utilized to examine the interactions between multiple variables (Heppner et al., 2013, p. 272). In this analysis, hopelessness and academic resilience were designated as independent variables, whereas academic procrastination functioned as the dependent variable. The relationships among these variables were assessed through multiple regression analysis.

**Participants**

The research study group consisted of students from various high schools in a small city located in the Aegean Region of Türkiye during the 2023-2024 academic year. Participants were selected through a convenient sampling method, which entails the researcher choosing individuals who are readily accessible or who possess specific characteristics pertinent to the study (Neuman, 2013). A total of 625 students participated in the study, with an average age of 15.52 years (SD = 1.13). The sample consisted of 337 female students (53.9%) and 288 male students (46.1%). Students were distributed across all high school grade levels (9th to 12th grades) with relatively balanced representation. Regarding academic performance, the majority of students reported grade point averages between 50–85 for the previous academic year. Most participants resided in urban areas. In terms of parental education, approximately half of the fathers and one-third of the mothers had completed high school or higher education. Family income data indicated that a considerable portion of the sample came from households with income levels at or below twice the minimum wage. Based on the reported data on parental education and income levels, the study sample can be characterized as socioeconomically disadvantaged overall.

**Data Collection Tools**

*The Academic Procrastination Scale (APS)*

The Academic Procrastination Scale (APS) was developed by Çakıcı (2003) to evaluate the degree of academic procrastination among high school and university students. This scale comprises 19 items, including 12 negative items and 7 positive items. Responses are measured using a 5-point Likert scale, where “Does not reflect me at all” corresponds to a score of 1, “Reflects me very little” corresponds to a score of 2, “Reflects me somewhat” corresponds to a score of 3, “Reflects me mostly” corresponds to a score of 4, and “Reflects me completely” corresponds to a score of 5. Notably, Items 1, 4, 7, 9, 11, 13, and 17 require reverse scoring. The scale's minimum score is 19, while the maximum score is 95; higher scores indicate a greater tendency toward procrastination in academic tasks (Çakıcı, 2003). Exploratory factor analysis (EFA) of the APS identified two subscales: "Procrastination," which accounts for 41.88% of the total variance, and "Regular Study Habits," which accounts for 7.18% of the variance. It is important to note that the scale can also be utilized as a unidimensional construct (Çakıcı, 2003). The Cronbach’s alpha coefficients for the scale were calculated to be 0.89 for the "Procrastination" subscale, 0.84 for the "Regular Study Habits" subscale, and 0.92 for the overall reliability coefficient. The Spearman-Brown split-half reliability coefficient was determined to be 0.85. The analysis of test-retest reliability revealed a correlation coefficient of 0.89. Specifically, the test-retest reliability coefficients for the "Procrastination" and "Regular Study Habits" factors were calculated to be 0.80 and 0.82, respectively. In this study, the APS was administered to a sample of 65 high school students over a 17-day interval, yielding a test-retest correlation coefficient of 0.89. The overall Cronbach’s alpha coefficient for the APS in this context was recorded as 0.85.

*The Beck Hopelessness Scale (BHS)*

The Beck Hopelessness Scale (BHS), developed by Aaron T. Beck and colleagues in 1974, is an instrument designed to evaluate the levels of hopelessness experienced by individuals. This scale was first validated in Turkish by Seber et al. in 1993, followed by validation efforts led by Durak and Palabıyıkoğlu in 1994. The BHS comprises 20 items, where respondents receive a score of 1 for each "Yes" answer and a score of 0 for each "No" answer. It is important to note that items 1, 3, 5, 6, 8, 10, 13, 15, and 19 are reverse scored. Consequently, the total score can range from 0 to 20, with higher scores indicating increased levels of hopelessness. Factor analysis has revealed that the scale possesses a three-factor structure. The first factor, "Feelings and Expectations about the Future," which includes items 1, 3, 7, 11, and 18, accounts for 27.9% of the total variance. The second factor, "Loss of Motivation," comprising items 2, 4, 9, 12, 14, 16, 17, and 20, explains 8.1% of the variance. The third factor, "Hope," which consists of items 5, 6, 8, 10, 13, 15, and 19, accounts for 6.6% of the total variance, as reported by Durak and Palabıyıkoğlu in 1994. Further validation of the scale's reliability was demonstrated by Seber et al. (1993), who reported a Cronbach's Alpha internal consistency coefficient of 0.86. In the current study, the Cronbach's Alpha coefficient for the Hopelessness Scale was determined to be 0.88, indicating strong internal consistency.

*The Academic Resilience Scale (ARS)*

The Academic Resilience Scale (ARS) was developed by Martin and Marsh in 2006 to evaluate the capacity of high school students to manage academic stress, distress, and pressure. The Turkish adaptation of this scale was conducted by Kapıkıran in 2012. The scale employs a 7-point Likert-type format, which allows respondents to indicate their level of agreement ranging from "Not at all applicable to me" to "Completely applicable to me." Importantly, there are no reverse-scored items present in this scale; thus, higher scores correlate with greater academic resilience. The internal consistency coefficient of the scale is reported to be 0.89 (Kapıkıran, 2012). The translation process from English to Turkish was executed by the researcher alongside a faculty member specializing in psychological counseling and guidance, both of whom possess proficiency in the respective languages.

To establish the structural validity of the Turkish version of the scale, both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were performed. The results from the EFA indicated that the scale is unidimensional, comprising six items, with factor loadings ranging between 0.70 and 0.83. The CFA results corroborated an acceptable model fit, with all fit indices adhering to recognized standards (Kapıkıran, 2012). The reliability of the scale was measured using a Cronbach's alpha coefficient of 0.89, with test-retest reliability assessed over a three-week interval yielding a correlation coefficient of r = 0.82. The item-total correlations within the scale varied from 0.59 to 0.78 (Kapıkıran, 2012). In the current study, the calculated Cronbach's alpha value for the scale was determined to be 0.70.

*The demographic information form*

It was created by the researchers to determine participants' information on "gender, age, grade level, academic GPA, place where most of their life has been spent, whether their parents are alive, parents' marital status, parents' educational background, and monthly average income level.

**Procedure**

The measurement tools and the demographic information form used in the study were administered to high school students who voluntarily participated in the research. It took approximately 20 minutes for the participants to respond to the questions.

**Data Analyses**

The data obtained from the research were transferred to a computer environment where the IBM SPSS Statistics 27 software package was employed for data analysis. Prior to initiating the analysis, necessary adjustments were made, including reverse coding and the calculation of total scale scores, to adequately prepare the data. A thorough examination for missing data was conducted, revealing that no missing data were present. Multiple linear regression analysis was selected as the analytical method. This statistical technique evaluates both the individual and collective effects of one or more predictor variables on a dependent variable (Wampold & Freund, 1987). For multiple regression analysis to be applicable, the dependent variable must be continuous, while the independent variables should consist of equal interval and continuous scales (Büyüköztürk, 2019, p. 98). In this study, the scores for both the dependent and independent variables were collected using equal ratio and continuous scales, ensuring their suitability for multiple regression analysis. It is essential for the dependent variable to have a normal distribution, to exhibit a linear relationship with the predictor variables, and to avoid multicollinearity among the predictor variables. Additionally, the presence of outliers in the variables should be examined (Büyüköztürk, 2019, pp. 99-100). Furthermore, it is recommended that the errors of prediction be normally distributed, that homoscedasticity be maintained, and that the errors be independent of one another (Field, 2009, pp. 220-221). An evaluation of these conditions was conducted through preliminary analyses, confirming the appropriateness of the data for further analysis.

**Ethics approval notification**

Ethical approval for this research was obtained from the Adiyaman University Social and Humanities Ethics Committee (08.12.2023-484). In addition, the necessary permissions were obtained from the Provincial Directorate of National Education of the schools involved in the research. Data were collected from students who voluntarily participated in the study. Parental consent was obtained for students under the age of 18.

**Results**

**Pre-Analysis**

To determine whether the variables meet one of the conditions for applying multiple linear regression analysis, skewness and kurtosis values were calculated to assess whether the variables follow a normal distribution.

Table 1. Skewness and kurtosis values for the variables

|  |  |  |  |
| --- | --- | --- | --- |
| Scale | f | Skewness | Kurtosis |
| Academic procrastination | 625 | -.017 | -.236 |
| Hopelessness | 625 | .545 | -.664 |
| Academic resilience | 625 | -.079 | -.255 |

The skewness and kurtosis values of a variable being zero indicate that it follows a perfectly normal distribution (Tabachnick & Fidell, 2013). Generally, skewness and kurtosis coefficients between -1 and +1 indicate that a variable follows a normal distribution (Büyüköztürk, 2019, p. 40). In this study, the skewness values of the variables range from -.079 to +.545, and the kurtosis values range from -.236 to -.664. Based on this, it can be said that the research variables follow a normal distribution. To determine the relationships between the variables in the study and to check for multicollinearity, another prerequisite for performing multiple regression analysis, Pearson correlation analysis was conducted. The results regarding the relationships between academic procrastination, hopelessness, and academic resilience variables are presented in Table 2.

Table 2. Pearson correlation coefficient values for the research variables

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | 1 | 2 | 3 |
| 1. Academic procrastination | 1 |  |  |
| 2. Hopelessness | .41\* | 1 |  |
| 3. Academic resilience | -.23\* | -.41\* | 1 |
| N=625, \*p< .001. | | | |

As seen in Table 2, there is a moderate positive relationship between the academic procrastination variable and hopelessness (r = .41, p< .001); a low negative relationship between the academic procrastination variable and academic resilience (r= -.23, p< .001); and a moderate negative relationship between the hopelessness variable and academic resilience (r= -.41, p< .001). In multiple linear regression analysis, a relationship level higher than 0.80 between predictor variables indicates a multicollinearity problem (Büyüköztürk, 2009: p. 100). As seen in Table 2, the relationship between academic resilience and hopelessness is -.41. This indicates that there is no multicollinearity problem among the predictor variables of the study. Additionally, tolerance, VIF (Variance Inflation Factor), and CI (Condition Index) values were examined to determine if there is a multicollinearity problem between the predictor variables. According to Field (2009, pp. 297-298), when tolerance values are greater than .20, VIF values are less than 10, and CI values are less than 30, it can be concluded that there is no multicollinearity problem. As seen in Table 3, these values are within the desired range, indicating that there is no multicollinearity problem.

Table 3. Values regarding multicollinearity problem among predictor variables

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Multicollinearity | | | | |
| Dependent Variable | Independent Variable | Toler. | VIF | CI |
| Academic procrastination | Academic resilience | .834 | 1.198 | 3.020 |
| Hopelessness | .834 | 1.198 | 9.765 |

To evaluate the independence of the error values associated with the independent variables and to address potential autocorrelation issues, the Durbin-Watson statistic was analyzed. This statistic is a requisite for conducting multiple regression analysis. A Durbin-Watson value ranging from 1.00 to 3.00 indicates the absence of autocorrelation among the error values of the independent variables (Field, 2009, p. 337). In this analysis, the Durbin-Watson value was determined to be 1.744, suggesting that autocorrelation is not a concern. Furthermore, Cook's Distance was employed to detect the presence of outliers within the dataset. The highest Cook’s Distance value recorded was .032, which falls below the threshold of 1. This finding indicates that the data does not contain any significant outliers.

As another preliminary analysis, the Normal P-P plot was examined to determine whether the errors of the predictions follow a normal distribution, and it was found that the errors of the predictions follow a normal distribution. Finally, the homoscedasticity (equality of variance) condition was examined.

**Findings from the Multiple Linear Regression Analysis**

A multiple linear regression analysis was conducted to examine whether hopelessness and academic resilience, the main variables of this study, significantly predict academic procrastination. The findings obtained are presented in Table 4.

Table 4. Findings of multiple linear regression analysis

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dependent  Variable | Independent  Variables | Unstandardized Coefficients | | | | β | t | p |
| B | S.  Dev. | %95 BCA Confidence Interval | |
| Lower Upper | |
| Academic procrastination | (Sabit) | 51.878 | 2.257 | 47.447 | 56.310 |  | 22.990 | .000\* |
| Academic resilience | -.133 | .069 | -.269 | .002 | -.077 | -1.929 | .054 |
| Hopelessness | .985 | .103 | .783 | 1.187 | .382 | 9.576 | .000\* |

*Note.* F(2, 622)=66.188, \*p< .001; Adj. R2 = .173; Durbin-Watson=1.744.

When examining the data from the multiple regression analysis in Table 4, it is observed that the tested model is significant [F(2, 622)=66.188, p< .001] and the independent variables explain 17.3% of the total variance (Adj. R2) of the dependent variable. Accordingly, the variables of hopelessness and academic resilience significantly predict the variation in academic procrastination (p< .001).

When the effects of the independent variables on the dependent variables are examined in detail, it is found that the hopelessness variable significantly predicts academic procrastination (p< .05), while the academic resilience variable does not significantly predict it (p> .05). Hopelessness positively predicts academic procrastination, and a 1-unit increase in hopelessness leads to a .985 -unit increase in academic procrastination (with a 95% confidence interval between .783 and 1.187 units). The regression equation predicting academic procrastination, the dependent variable in this study, is calculated as: “Academic Procrastination = 51.878 – .133\*Academic Resilience + .985\*Hopelessness.”

**Conclusion and Discussion**

This study examined the predictive roles of hopelessness and academic resilience in academic procrastination among high school students. The findings showed that hopelessness is a significant predictor of academic procrastination, while academic resilience alone does not significantly predict procrastination. However, when both variables are considered together in the same model, they meaningful contribute to explaining procrastination behavior. In other words, students who feel more hopeless tend to delay their academic tasks more often. On the other hand, academic resilience, although generally thought to reduce procrastination, did not show a meaningful effect when examined on its own in this study. The analysis revealed that the combined influence of hopelessness and academic resilience explains 17.3% of the variation in academic procrastination. This suggests that while hopelessness plays a stronger role, academic resilience may still have an indirect or supportive function when considered alongside hopelessness.

The first key finding indicates that hopelessness is a significant predictor of academic procrastination. Specifically, as students' levels of hopelessness increase, their tendency to procrastinate academically also rises. This aligns with previous research that has established a relationship between hopelessness and procrastination among both high school and university students (Akdamar & Kızılkaya, 2022; Odacı & Kaya, 2019; Yılmaz, 2016). Studies show that students with high hope tend to have more constructive academic aspirations, whereas those with low hope are more likely to give up on their goals and develop negative self-perceptions (Wang et al., 2022). A lack of hope in high school students is linked to an aversion to academic tasks, which leads to procrastination behaviors (Nabaei et al., 2021). In line with Temporal Motivation Theory (TMT), students who harbor negative expectations about their abilities may see academic tasks as futile, leading them to delay completing them. Additionally, hopeless students may hold negative beliefs about their future, such as expecting failure or believing their efforts will go unrecognized, which exacerbates procrastination (Balkis & Duru, 2019; Panzarella et al., 2006). Thus, hopelessness has a clear, negative effect on motivation and academic engagement, making it a reliable predictor of procrastination.

The second key finding reveals that academic resilience, contrary to expectations, does not significantly predict academic procrastination. This finding differs from previous research that has identified academic resilience as a predictor of reduced procrastination among high school students (Astutik & Firdana, 2023; Cahyani et al., 2023; Hossinlou & Jadidi, 2020). Academic resilience refers to students' ability to maintain high self-efficacy, set effective goals, plan their activities, and persist through challenges while managing anxiety related to academic tasks (Martin & Marsh, 2006). According to the Temporal Motivation Theory (TMT), students with these qualities are expected to show reduced procrastination and enhanced motivation toward academic tasks (Steel, 2007). Given this theoretical expectation, the finding that academic resilience did not significantly predict procrastination may seem surprising. This discrepancy can be attributed to environmental factors that may hinder the manifestation of resilience's full potential.

TMT suggests that procrastination often arises from diminished motivation (Steel, 2011), and motivation is influenced by both internal factors (such as personal interests, values, and expectations) and external factors (such as rewards, incentives, and societal pressures) (Ryan & Deci, 2000). While academic resilience is generally considered an intrinsic motivational factor, external influences—like societal pressures, family expectations, and academic structures—could significantly impact students' motivation, thereby fostering procrastination despite their resilience. In Türkiye, for instance, students face the university entrance examination, which is perceived as a critical determinant of their future careers. However, the high unemployment rates among university graduates (Yamak et al., 2023) may lead students to question the value of their academic pursuits, thereby reducing their motivation and exacerbating procrastination. Additionally, the exam-centric educational system in Türkiye places heavy emphasis on short-term goals (Taşdemir, 2015), further discouraging long-term academic engagement. The high academic pressures, coupled with unrealistic expectations from parents, can also contribute to academic stress and burnout (Tatlı & Atmaca, 2023), which may undermine the positive effects of academic resilience on motivation.

Therefore, while academic resilience is an important intrinsic factor, its influence on academic procrastination may be moderated or overridden by the external pressures within the educational system and societal expectations. This suggests that the relationship between academic resilience and procrastination is influenced not only by personal traits but also by environmental and cultural contexts.

The study also highlights that the combined effect of hopelessness and academic resilience significantly predicts academic procrastination. While this effect may seem modest, it is an important finding, as it contributes to a deeper understanding of the dynamics that contribute to procrastination. TMT highlights the role of self-efficacy in academic motivation (Steel & König, 2006), and it is plausible that a student’s perception of their ability to succeed, coupled with their levels of hopelessness and resilience, shapes their approach to academic tasks. If students lack hope or self-efficacy, they are more likely to procrastinate, whereas resilience can serve as a buffer against this tendency, though it is not always sufficient in the face of overwhelming external stressors.

The implications of academic procrastination are substantial, as it can have lasting effects on high school students. Procrastination may seem like a harmless behavior at first, but if it becomes habitual, it can lead to poor academic performance, heightened stress, and missed educational opportunities. Such patterns of procrastination may also lead to long-term issues in students' social, familial, and psychological well-being. As such, it is crucial to identify and address the underlying factors that contribute to procrastination in high school students. This research underscores the importance of providing preventive guidance and psychological counseling services to help students manage feelings of hopelessness, build resilience, and develop strategies for reducing procrastination.

Strategies aimed at mitigating hopelessness and fostering academic resilience could be effective in reducing academic procrastination. Counselors and educators should focus on helping students recognize and confront feelings of hopelessness, reinforce their self-efficacy, and bolster their resilience to navigate academic challenges. By addressing these psychological factors, students’ motivation to engage with academic tasks can be improved, potentially reducing procrastination behaviors.

In conclusion, this study is one of the first to examine the combined effects of hopelessness and academic resilience on academic procrastination among high school students. The findings provide valuable insights into the psychological factors that contribute to procrastination and highlight the importance of both individual and environmental factors in shaping academic behavior. The results suggest that while academic resilience can play a significant role in reducing procrastination, external factors, such as societal pressures and the exam-centric education system, must also be considered when developing strategies to address academic procrastination. By understanding and addressing the interplay between hopelessness, resilience, and external influences, educators and counselors can better support students in overcoming procrastination and achieving academic success.

**Recommendations**

This study makes a valuable contribution to the existing literature on academic procrastination; however, it is not without limitations. The sampling method employed may introduce bias. Therefore, future research should aim to minimize measurement error by utilizing more robust sampling techniques. Moreover, the study's focus on students from public secondary schools in Kütahya restricts the generalizability of the findings. Broader studies that include participants from various provinces and educational levels could provide more representative results. Future investigations should analyze academic procrastination within the framework of the ZMT model, incorporating variables such as self-efficacy, impulsivity, attention distraction, self-regulation, and goal setting. Notably, the finding that academic resilience does not predict procrastination contradicts some existing research, highlighting the need for further studies to explore its impact, particularly among at-risk populations.

School counselors assisting high school students should take into account levels of hopelessness when addressing procrastination. By implementing preventive measures aimed at reducing hopelessness, counselors can facilitate a decrease in procrastination while enhancing academic performance. Furthermore, it is crucial for counselors to integrate resilience-promoting strategies into their annual plans to bolster student success. In addition, school counselors should be encouraged to work in collaboration with teachers and families to monitor students who consistently exhibit procrastination and provide them with individual psychological support when necessary.

Parents should adopt a supportive and understanding approach when discussing their children’s academic struggles. Rather than imposing excessive pressure, they should maintain open communication and work in cooperation with schools to better understand the underlying causes of procrastination. Creating a home environment that nurtures autonomy, fosters realistic expectations, and encourages perseverance can help children develop stronger coping skills and motivation for academic tasks.

Teachers should monitor the academic and emotional progress of at-risk students, utilizing class risk maps to provide targeted guidance. Additionally, providing students with timely, constructive feedback, helping them set realistic goals, and emphasizing the value of academic tasks can contribute to strengthening their motivation and reducing procrastination.

Provincial and district education directorates should develop action plans to support schools encountering academic and psychological challenges, with an emphasis on fostering resilience and hope among students, educators, and school administrators. These plans should prioritize fostering a school climate that promotes resilience and hope. Additionally, professional development programs for educators can enhance their capacity to identify and intervene effectively with students exhibiting procrastination behaviors. Policy-level support is essential to ensure that efforts to address academic procrastination are sustained, inclusive, and responsive to the contextual challenges faced by both students and educators.

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**Authors Contribution Rate**

Authors contributed equally.

**Ethical Approval**

This research received approval from the Ethics Committee for Social and Human Sciences at Adıyaman University, with decision number 484, dated August 12, 2023.

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