

# Defensive Pessimism Among University Students: Psychological Strategy for Managing Academic Anxiety

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## Article Info

### Article history:

Received : November 12, 2025

Revised : December 03, 2025

Accepted : December 24, 2025

### Keywords:

Pessimism; Defensive;  
The Defensive Pessimism

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## ABSTRACT

This study examines defensive pessimism as a psychological strategy used by university students to regulate anxiety and prepare for academic challenges. Defensive pessimism refers to a cognitive strategy in which individuals set low expectations and mentally simulate potential negative outcomes to cope with anxiety and enhance performance. The study employed a quantitative descriptive design with a sample of 600 university students selected through stratified random sampling. A defensive pessimism scale consisting of 20 items was developed based on the theoretical framework of Norem and Cantor. The instrument demonstrated satisfactory psychometric properties with Cronbach's alpha reliability of 0.89 and exploratory factor analysis confirming a single-factor structure. Data were analyzed using a one-sample t-test and two-way ANOVA. The results indicated that university students demonstrated significant levels of defensive pessimism. Furthermore, significant differences were found based on gender and academic specialization, where female students and students in humanities disciplines showed higher levels of defensive pessimism compared to their counterparts. These findings suggest that defensive pessimism functions as an adaptive cognitive strategy for managing academic pressure among students. The study contributes to the understanding of psychological coping strategies in higher education and provides implications for student counseling and academic support programs.

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## INTRODUCTION

University students frequently encounter various academic and psychological challenges throughout their educational journey. Academic workload, performance expectations, competitive learning environments, and uncertainty regarding future career prospects often generate considerable levels of stress and anxiety among students. Excessive anxiety may negatively affect students' academic performance, psychological well-being, and ability to cope with academic demands. Previous research has shown that high levels of anxiety can interfere with concentration, decision-making, and learning adjustment, ultimately affecting students' academic achievement and psychological resilience (Adams, 2023; Wilt, Oehlberg, & Revelle, 2011). Consequently, students often develop different psychological coping strategies to regulate anxiety and maintain their academic performance in demanding educational environments.

One psychological strategy that has received considerable attention in educational psychology is defensive pessimism. The concept of defensive pessimism was introduced by Julie K. Norem and Nancy Cantor, who defined it as a cognitive strategy in which individuals deliberately set low expectations and anticipate potential negative outcomes before facing a performance-related situation (Norem & Cantor, 1986). This strategy enables individuals who experience high levels of anxiety to prepare themselves more carefully for future events by mentally simulating possible difficulties. Rather than representing simple

negative thinking, defensive pessimism functions as a form of self-regulation that allows individuals to transform anxiety into motivation for careful preparation and improved performance (Norem, 2008).

In academic contexts, defensive pessimism may influence how students approach learning tasks and respond to academic challenges. Students who adopt this strategy tend to anticipate potential obstacles and engage in more detailed preparation before facing important academic tasks such as examinations, presentations, or assignments. Several studies have suggested that defensive pessimism can function as an adaptive coping mechanism that encourages planning, effort, and careful task management. However, excessive pessimistic thinking may also lead to maladaptive outcomes such as heightened worry, avoidance behavior, and academic procrastination (Elliot & Church, 2003; Norem, 2008). Therefore, understanding defensive pessimism among university students is important for explaining how students regulate anxiety and manage academic pressure in challenging learning environments.

Previous research has examined defensive pessimism in relation to several psychological constructs, including motivation, self-regulation, self-esteem, and self-handicapping behavior. For example, research by Andrew J. Elliot and Marcy A. Church demonstrated that defensive pessimism is closely related to achievement motivation and self-handicapping strategies in performance situations (Elliot & Church, 2003). Similarly, studies have shown that individuals who use defensive pessimism often mentally rehearse possible negative outcomes as a way to prepare for challenging situations and reduce uncertainty (Eronen, Nurmi, & Salmela-Aro, 1998). These findings indicate that defensive pessimism can play an important role in shaping individuals' behavioral and emotional responses to performance-related tasks. Despite growing interest in defensive pessimism in psychological research, empirical studies examining this phenomenon in higher education contexts remain relatively limited, particularly in non-Western educational settings. Most previous studies have primarily focused on the relationship between defensive pessimism and psychological traits or motivational processes (Suárez, 2014) (Yamawaki & Feick, 2004), while relatively fewer studies have examined how defensive pessimism varies across demographic characteristics such as gender and academic specialization within university environments. Understanding these differences is important because students from different demographic backgrounds may experience academic stress and emotional regulation in different ways (Monteiro et al, 2014) (de la Fuente, 2020)

Gender differences, for example, have been widely discussed in psychological and educational research. Female students often report higher levels of academic anxiety and emotional sensitivity compared to male students (Singla, 2026), which may influence the coping strategies they adopt when dealing with academic challenges. Similarly, academic specialization may also influence students' psychological responses to learning environments. Students in humanities disciplines may experience different cognitive and emotional demands compared to students in scientific disciplines (Zhang, 2025) (Mangione, 2018) which may shape how they anticipate and respond to academic pressures. Understanding defensive pessimism within these demographic contexts is particularly important in regions where university students face complex social, economic, and educational challenges. In such contexts, students may experience heightened uncertainty regarding academic success and future employment opportunities, which may intensify their reliance on psychological coping strategies when dealing with academic stress.

Therefore, examining defensive pessimism among university students can provide valuable insights into how students regulate anxiety and cope with academic demands. Such understanding may contribute to the development of more effective academic counseling programs, psychological support services, and educational strategies aimed at improving students' well-being and academic resilience. Based on these considerations, the present study aims to examine the level of defensive pessimism among university students and to investigate whether significant differences exist according to gender and academic specialization. By addressing these aspects, this study contributes to expanding empirical knowledge about psychological coping strategies in higher education and provides insights for developing educational interventions that support students in managing academic stress and performance expectations.

## **METHOD**

This study employed a quantitative descriptive survey design to examine defensive pessimism among university students. The descriptive approach was considered appropriate because it enables researchers to describe and analyze psychological phenomena as they occur within a specific population without manipulating the variables (Sileyew, 2019). Through this approach, the researcher aimed to measure the level of defensive pessimism among students and investigate whether differences exist according to gender and academic specialization.

The population of the study consisted of all undergraduate students enrolled in morning study programs at Al-Qadisiyah University during the academic year 2024-2025. According to official university statistics, the total population comprised 19,139 students distributed across different academic disciplines and gender categories. The population included students from both scientific and humanitarian specializations, representing the broader academic environment of the university. A sample of 600 students was selected from

the total population, representing approximately 3% of the population. The participants were selected using proportionate stratified random sampling to ensure that the sample accurately reflected the distribution of students according to gender and academic specialization. Stratified sampling is considered an effective technique when the population consists of heterogeneous subgroups, as it ensures adequate representation of each subgroup within the sample (Pandey & Pandey, 2021).

To measure defensive pessimism among university students, the researcher developed a Defensive Pessimism Scale based on the theoretical framework proposed by Julie K. Norem and Nancy Cantor (1986). The scale initially consisted of 22 items designed to measure students' tendencies to anticipate negative outcomes and set low expectations in performance-related situations. Participants responded to each item using a Likert-type response format. After conducting psychometric analyses, the final version of the scale consisted of 20 items that demonstrated satisfactory validity and reliability. Face validity was established by presenting the initial scale items to a panel of 20 experts in psychology, all of whom held doctoral degrees and had more than five years of academic experience. The experts were asked to evaluate the clarity, relevance, and appropriateness of each item in measuring defensive pessimism among university students. Based on their feedback, modifications were made to several items, and two items were removed from the scale. The Chi-square test was used to determine the statistical significance of experts' agreement regarding item validity.

Construct validity was examined using Exploratory Factor Analysis (EFA) to determine the underlying factor structure of the scale. Exploratory factor analysis is a statistical method used to identify latent constructs by examining correlations among observed variables (Fabrigar & Wegener, 2012). Before performing the factor analysis, sampling adequacy was assessed using the Kaiser Meyer Olkin (KMO) measure and Bartlett's Test of Sphericity. The KMO value obtained for the scale was 0.93, indicating excellent sampling adequacy for factor analysis. Bartlett's test of sphericity was statistically significant ( $\chi^2 = 4480.264$ ), confirming that the correlation matrix was appropriate for factor extraction.

The researcher used Principal Component Analysis to analyze the inter-correlation matrix. A factor with an eigenvalue > 1 is considered significant (Yong & Pearce, 2013). It was found that the 22 factors were sorted and reduced to (3) factors controlling defensive pessimism with different loading percentages. They were arranged in descending order, but with a large difference between the first factor, which had an eigenvalue of (7.395) explaining (33.612) of the total variance, followed by the second factor with an eigenvalue of (1.734) explaining (41.494) of the total variance, then the third factor with an eigenvalue of (1.166) explaining (46.796) of the total variance. Table (1) and Figure (1) show the factor reduction using principal component analysis.

Table 1. Factor reduction using principal component of defensive pessimism scale

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.395	33.612	33.612	7.395	33.612	33.612	6.019	27.359	27.359
2	1.734	7.882	41.494	1.734	7.882	41.494	2.662	12.100	39.459
3	1.166	5.302	46.796	1.166	5.302	46.796	1.614	7.337	46.796
4	.984	4.474	51.270						
5	.963	4.377	55.646						
6	.915	4.161	59.807						
7	.885	4.021	63.828						
8	.794	3.610	67.439						
9	.748	3.400	70.839						
10	.664	3.020	73.859						
11	.628	2.856	76.715						
12	.608	2.763	79.478						
13	.579	2.632	82.110						
14	.542	2.465	84.575						
15	.521	2.370	86.945						
16	.489	2.224	89.169						
17	.457	2.079	91.248						
18	.439	1.994	93.242						
19	.422	1.920	95.161						
20	.404	1.837	96.999						
21	.375	1.704	98.703						
22	.285	1.297	100.000						

Extraction Method: Principal Component Analysis.

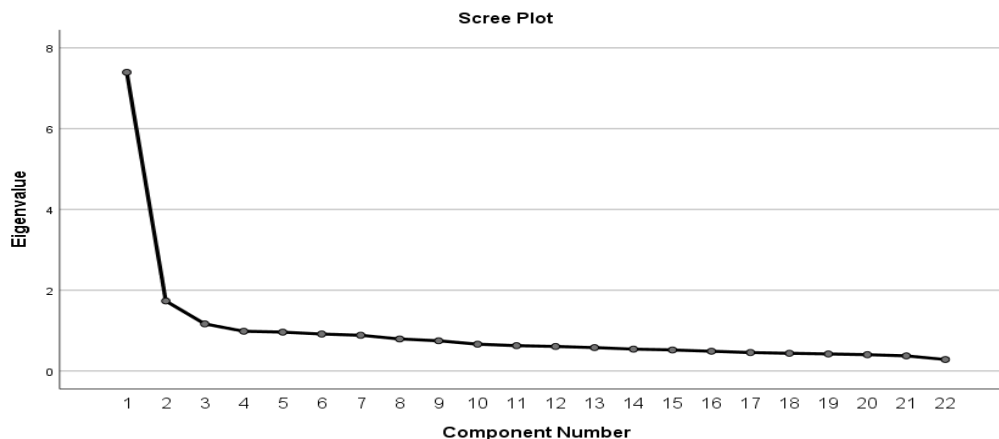


Figure 1. Factor reduction using principal component of defensive pessimism scale

The analysis was conducted using Principal Component Analysis (PCA) followed by Varimax rotation to achieve a clearer factor structure. Factors with eigenvalues greater than 1.0 were retained according to Kaiser’s criterion (Yong & Pearce, 2013). The initial extraction suggested the presence of three factors explaining 46.79% of the total variance. However, further examination of the rotated factor matrix revealed that only the first factor contained a sufficient number of item loadings. The second and third factors contained fewer than three items each and were therefore excluded from further interpretation. Consequently, the scale was treated as a single-factor construct consisting of 20 items.

Item discrimination was examined using the Extreme Groups Method, which assesses the ability of each item to differentiate between individuals with high and low levels of the measured trait (Shaw & Wright, 1967). Participants’ total scores were arranged in descending order, and the top 27% and bottom 27% of scores were selected to form the upper and lower groups, respectively. Since the analysis sample consisted of 600 participants, each group contained 162 students. Independent samples t-tests were conducted to compare the responses of the two groups for each item. The results indicated that all retained items demonstrated statistically significant differences between the upper and lower groups, confirming that the items possessed satisfactory discriminatory power.

The reliability of the defensive pessimism scale was assessed using two methods. Firstly, Internal consistency reliability was examined using Cronbach’s alpha coefficient. The analysis produced an alpha value of 0.89, indicating a high level of internal consistency among the scale items (Agbo, 2010). Secondly, Split-half reliability was also calculated to further evaluate the consistency of the instrument. The correlation coefficient between the two halves of the scale was 0.731, while the Spearman-Brown corrected reliability coefficient was 0.845, indicating acceptable reliability for psychological measurement.

**RESULTS**

**The First Objective: Identifying Defensive Pessimism among University Students**

To verify this objective, the defensive pessimism scale was administered to a sample of 600 male and female university students. The students' responses were analyzed using a one-sample t-test to compare the hypothetical mean of the scale (60), which represents the midpoint of the scale, with the sample mean. The results indicated that the sample mean (M = 74.288, SD = 16.667) was higher than the hypothetical mean. The statistical analysis showed a significant difference,  $t(599) = 20.998, p < .001$ , indicating that university students demonstrate a statistically significant level of defensive pessimism.

Table 4. One sample t-test results for the significance of defensive pessimism

	N	Mean	Std. Deviation	Std. Error Mean	T	Sig. (2-tailed)
<b>Student of University</b>	600	74.2883	16.66748	.68045	20.998	.000

This result can be interpreted as university students placing negative evaluations in their calculations and expecting that future life may expose them to harm, therefore their defensive pessimism always helps them develop plans and strategies to avoid harm and reduce their anxiety. So, they always plan strategies to avoid the harm caused by their different expectations in life, which is consistent with what (Norem & Cantor, 1986) theory proposed about defensive pessimism. This result was consistent with (Elliot & Church, 2003) study, which showed that students have defensive pessimism, while the result differed from the rest of the study because the sample was different.

**The Second Objective: Differences in Defensive Pessimism According to Gender and Academic Specialization**

To examine differences in defensive pessimism according to gender (male–female) and academic specialization (humanities–scientific), a two-way analysis of variance (Two-Way ANOVA) was conducted.

Table 5. Results of two-way

Tests of Between-Subjects Effects					
Dependent Variable: Defensive pessimism					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	20437.193 <sup>a</sup>	3	6812.398	27.816	.000
Intercept	3113319.183	1	3113319.183	12711.959	.000
Gender	12544.661	1	12544.661	51.221	.000
Specialization	7186.846	1	7186.846	29.345	.000
Gender * Specialization	5713.257	1	5713.257	23.328	.000
Error	145967.925	596	244.913		
Total	3477659.000	600			
Corrected Total	166405.118	599			

a. R Squared = .123 (Adjusted R Squared = .118)

The results revealed a significant main effect of gender,  $F(1,596) = 51.221, p < .001$ . When reviewing the arithmetic means, the mean score for female students ( $M = 79.98$ ) was higher than that of male students ( $M = 70.43$ ). This finding suggests that female students tend to exhibit higher levels of defensive pessimism compared to male students. One possible explanation is that female students often report higher levels of academic anxiety and emotional sensitivity, which may encourage them to adopt defensive cognitive strategies when dealing with uncertain situations. According to the theory of defensive pessimism developed by Julie K. Norem and Nancy Cantor, individuals who experience higher levels of anxiety are more likely to anticipate possible negative outcomes as a way to prepare themselves for future challenges.

The analysis also revealed a significant main effect of academic specialization,  $F(1,596) = 29.345, p < .001$ . The mean score for students in humanities disciplines ( $M = 79.98$ ) was higher than that of students in scientific disciplines ( $M = 71.59$ ). This finding indicates that students in humanities fields tend to show higher levels of defensive pessimism. One possible explanation for this finding is that students in humanities disciplines are often engaged in reflective and interpretative forms of thinking, which may encourage them to consider various potential outcomes when facing academic tasks. In contrast, students in scientific disciplines may rely more on structured problem-solving approaches that focus on objective solutions. The results also showed a significant interaction effect between gender and academic specialization,  $F(1,596) = 23.328, p < .001$ . This result indicates that the level of defensive pessimism among students is influenced by the combined effect of gender and academic specialization. To determine the source of these differences, the Least Significant Difference (LSD) post hoc test was conducted. The calculated LSD value was 8.55. It means female humanities students have higher pessimism than male science students. The results are shown in Table (6) and Figure (2).

Table 6. Results of Post Analysis Comparing in comparison with the calculated LSD Values for Mean Differences in Defensive Pessimism Based on Gender-specialization Interaction

Gender	Specialization	Female		Male		LSD
		Humanities	Scientific	Humanities	Scientific	
	Specialization	Mean	86.816	73.145	70.824	70.041
Female	Humanities	86.816	-	13.670	15.991	16.775
	Scientific	73.145	-	-	2.321	3.104
Male	Humanities	70.824	-	-	-	0.783
	Scientific	70.041	-	-	-	-

The results indicate that female students in humanities disciplines demonstrated the highest level of defensive pessimism, whereas male students in scientific disciplines demonstrated the lowest level. These findings suggest that defensive pessimism may be influenced by both individual psychological factors and academic contextual factors. The interaction between gender and specialization indicates that students' coping strategies may vary depending on both personal characteristics and the nature of their academic environment. The interaction pattern is illustrated in Figure (2)

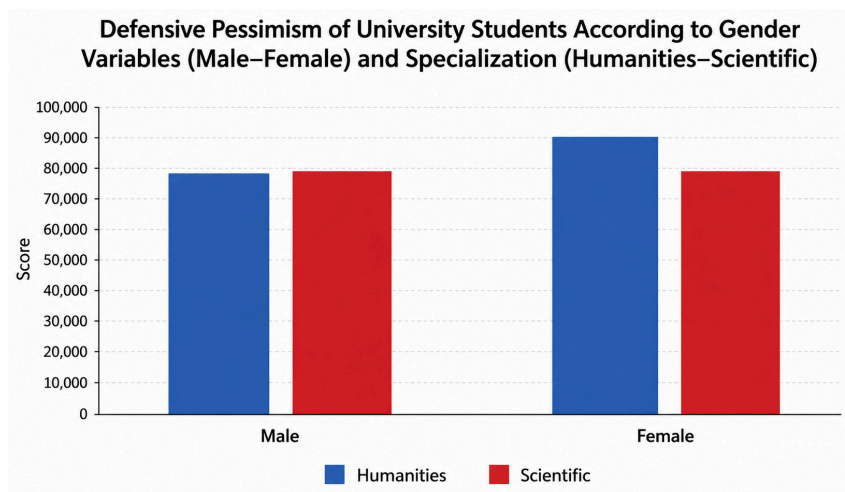


Figure 2. Defensive Pessimism According to Gender-specialization Interaction

## DISCUSSION

The findings of this study confirm that university students exhibit a statistically significant level of defensive pessimism, as evidenced by the sample mean exceeding the hypothetical midpoint of the scale. This suggests that students tend to anticipate negative outcomes and mentally simulate potential risks as part of their cognitive preparation strategy. Such a pattern aligns with the theoretical framework of defensive pessimism proposed by Julie K. Norem and Nancy Cantor, which posits that individuals with heightened anxiety deliberately set low expectations and engage in detailed planning to manage uncertainty. The elevated level of defensive pessimism observed in this study may reflect the increasing academic pressure, performance demands, and future-oriented concerns commonly experienced by university students. In this context, defensive pessimism functions as an adaptive cognitive strategy that enables students to regulate anxiety, enhance preparedness, and maintain performance, supporting prior findings by Andrew J. Elliot and Marcy A. Church, who identified similar tendencies among students in achievement settings.

Furthermore, the results reveal that defensive pessimism is not uniformly distributed but is significantly influenced by gender and academic specialization, as well as their interaction. Female students demonstrated higher levels of defensive pessimism compared to male students, which may be attributed to greater emotional sensitivity and higher reported academic anxiety. This finding is consistent with psychological literature suggesting that anxiety-related coping strategies are more frequently employed by female learners (Jirjees.,2024) (Rastogi et.al, 2025). In addition, students in humanities disciplines showed higher levels of defensive pessimism than those in scientific fields, indicating that disciplinary culture and cognitive orientation may shape how students anticipate and respond to uncertainty. Humanities students, who are often engaged in interpretative and reflective thinking, may be more inclined to consider multiple possible outcomes, thereby increasing anticipatory concern. The significant interaction effect further highlights that female students in humanities disciplines exhibit the highest level of defensive pessimism, while male students in scientific disciplines show the lowest. This pattern suggests that defensive pessimism emerges from a complex interplay between individual psychological characteristics and contextual academic environments. Therefore, these findings underscore the importance of considering both personal and disciplinary factors when designing interventions to support students' psychological well-being and adaptive coping strategies in higher education

## CONCLUSION

This study examined defensive pessimism among university students and differences by gender and academic specialization. The findings show that students generally exhibit significant defensive pessimism, using negative expectations as a strategy to prepare for challenges. Female students displayed higher levels than males, suggesting greater use of this strategy to manage anxiety. Additionally, students in humanities showed higher defensive pessimism than those in scientific fields, indicating that academic environments may influence coping strategies. Overall, defensive pessimism serves as a psychological mechanism that helps students regulate anxiety and better prepare for academic demands.

**RECOMMENDATIONS**

Based on the findings of this study, several recommendations can be proposed. First, university counseling centers and psychology specialists are encouraged to design seminars, workshops, or counseling programs aimed at helping students understand and manage defensive pessimism in constructive ways so that it can function as a strategy for regulating anxiety rather than becoming a source of excessive worry. Second, the defensive pessimism scale developed in this study may be utilized and further validated in future research involving different educational contexts, institutions, or age groups in order to strengthen its psychometric properties. Third, universities are encouraged to develop training programs that enhance students' self-confidence, emotional regulation, and adaptive coping strategies so that students are better able to manage academic pressure and overcome challenges during their academic journey.

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