



RESEARCH PAPER

Examining the Role of Anxiety in Academic Performance: A Comparative Study of Sciences and Social Sciences Students

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ABSTRACT

This study aimed to investigate the impact of anxiety on the academic performance of sciences and social sciences students and to compare anxiety levels between these two groups at the Women University of AJ&K Bagh. The study employed a causal-comparative research design to explore cause-and-effect relationships between variables. The research population consisted of all undergraduate students enrolled in the Women University of AJ&K Bagh. A sample of 594 students was randomly selected for the study. A standardized instrument was utilized to assess the anxiety levels of the participants. The linear regression was applied to examine the impact of anxiety on the academic performance of both science and social sciences students. Furthermore, an independent sample t-test was used to investigate the difference between the anxiety level of students in science and social sciences. The findings of the study revealed a significant negative impact of anxiety on students' academic performance. However, there is no significant difference between the anxiety level of sciences and social sciences students. These findings contribute to existing knowledge by providing valuable insights into the relationship between anxiety and academic performance among undergraduate students. The results emphasized the importance of addressing anxiety-related issues in educational institutions and their implications for students' academic achievements.

KEYWORDS Anxiety, Academic Performance, Sciences, Social Sciences, Undergraduate Students

Introduction

In today's competitive educational environment, the academic success of students plays a crucial role in shaping their future prospects. Academic performance can be influenced by various factors, and among them, anxiety stands out as a significant contributor (Bradley et al., 2007; Vitasari et al., 2010; Anaya-Muñoz et al., 2020). Anxiety is a prevalent mental state that can significantly impact students' academic achievements and overall well-being. Kaplan and Sadock (2017) argue that anxiety involves feelings of unease and worry, which can impede cognitive processes, concentration, and information-processing abilities.

Anxiety is a Psycho physiological issue characterized by symptoms like excessive worry, fear, restlessness, emotional responses, and negative thinking. These symptoms can affect daily activities and overall well-being. However, anxiety disorders are treatable, and seeking professional help can significantly improve one's quality of life (Callahan, 2001). According to Spielberger (1995), anxiety is described as an emotional state marked by feelings of tension and apprehension, comprising two distinct types: state and trait anxiety. State anxiety is a transient emotional condition that mirrors an individual's perception of a

stressful situation, whereas trait anxiety is a persistent personality trait marked by stable individual differences (Endler & Kocovski, 2001).

Student anxiety frequently arises from impractical teaching methods or an excessively challenging curriculum, prompting the adoption of a surface approach as a coping mechanism. Additionally, stress and anxiety stemming from personal or family issues also play a role in contributing to anxiety among students (Mayya et al., 2004; Levecque et al., 2017). It has been established that students' academic performance can be negatively impacted by anxiety. The negative impact that anxiety can have on students' educational outcomes has been highlighted by a number of studies that have examined the connection between academic performance and anxiety. Students' ability to concentrate, effectively process information, and perform at their best academically can be hindered by high levels of anxiety (Gonzalez et al., 2019; Richardson et al., 2012; Alqurashi & Alghamdi, 2020).

The sciences and social sciences are distinct academic fields with different requirements, teaching methods, and evaluation criteria. Because the nature of the coursework and the methods used to evaluate it can have a significant impact on students' anxiety levels and subsequent performance, it is essential to determine whether anxiety affects these academic fields differently. Examining the impact of anxiety within these two fields will provide valuable insights into potential discipline-specific challenges faced by students. This exploration can shed light on tailored strategies to effectively address these challenges.

The study centers on students at the Women University of AJ&K Bagh. As per Chapell et al. (2005), there may be variations in academic performance and the experience and expression of anxiety between men and women. The study can investigate potential gender-related factors that may influence the relationship between anxiety and academic performance among women students by focusing on a single-gender institution.

Many studies document negative effect of anxiety on academic performance of different level of educationan (see, for instances, Ambion, 2023; Cooper, Downing & Brownell, 2018; Zheng & Cheng, 2018; Vitasari et al., 2010). Although research on the link between anxiety and academic performance is well-established, there is a gap in the literature regarding the differing effects of anxiety on students belonging to various academic disciplines. Specifically, there has been limited attention given to how anxiety influences the academic performance of students in the sciences and social sciences at higher education institutions. These fields have unique academic demands, learning environments, and subject-specific requirements, which may lead to distinct anxiety patterns and outcomes.

Therefore, it is crucial to investigate the comparative effects of anxiety on the academic performance of students studying science and social sciences to gain a comprehensive understanding of this phenomenon. The findings will offer practical implications for developing targeted interventions and support systems to enhance the well-being and academic advancement of university students.

Literature Review

Anxiety is a common psychological phenomenon experienced by university students, and its impact on academic performance has been a topic of significant interest in educational research. Numerous studies have demonstrated a negative association between anxiety and academic performance among university students. Anxiety can manifest in various forms, including test anxiety, social anxiety, and general anxiety, and these different types may have distinct effects on academic achievement (Chapell et al., 2005; Zeidner, 1998). Test anxiety, in particular, has been found to impair students' performance on exams and assessments, leading to lower grades and decreased academic success (Hembree, 1988;

Seipp, 1991; Barroso et al., 2021; Von der Embse et al., 2018). Anxiety model is shown below in figure 1

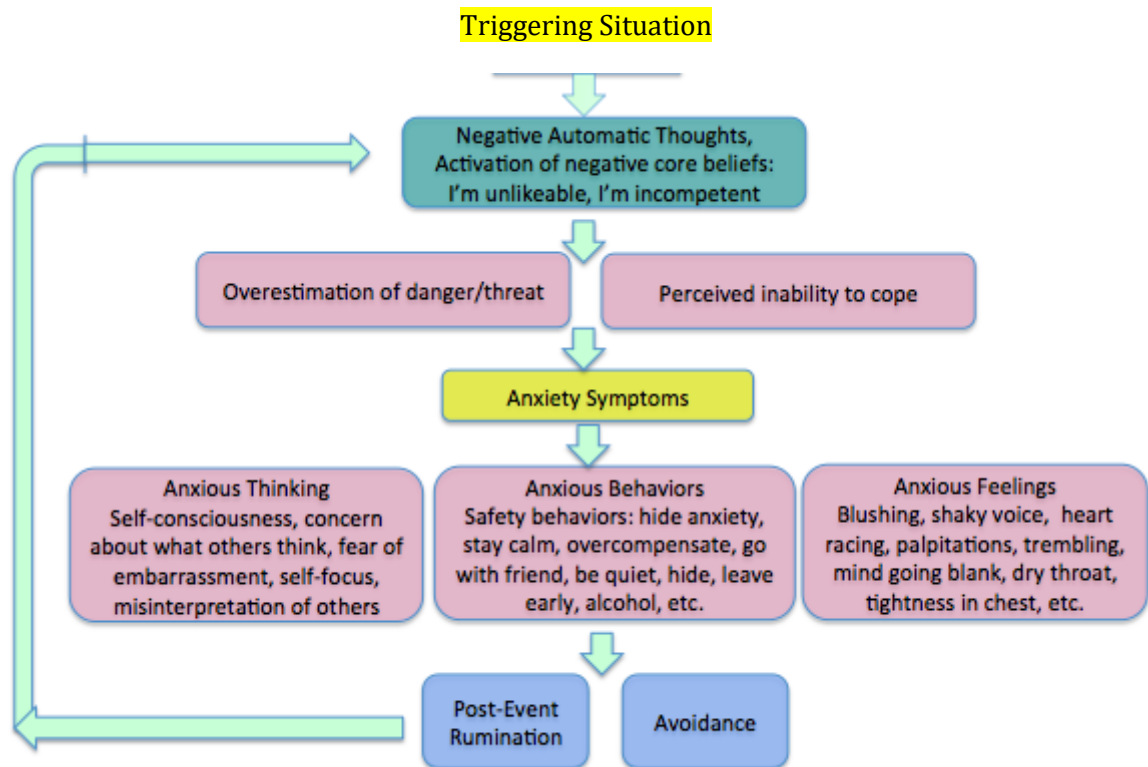


Figure 1 Anxiety development model

In recent years, there has been thorough investigation into the impact of anxiety on academic performance, revealing various significant findings. Alqurashi and Alghamdi (2020) conducted a systematic review exploring the connection between anxiety and academic achievement in university students. Their results revealed a noteworthy negative correlation, implying that elevated anxiety levels were linked to decreased academic performance. (Alqurashi & Alghamdi, 2020). Moreover, a meta-analysis conducted by Anaya-Muñoz, Sierra, and Lemos (2020) explored the impact of anxiety and depressive symptoms on academic performance in undergraduate students. The results of their study revealed a significant negative association between anxiety symptoms and academic achievement, emphasizing the detrimental effect of anxiety on students' academic performance (Anaya-Muñoz et al., 2020). Interestingly, even in the context of doctoral studies, anxiety has been found to influence academic performance. High levels of job demands, such as excessive workload and time pressure, were associated with increased anxiety and decreased academic performance (Levecque et al., 2017).

While these studies focus on academic settings, the impact of anxiety on performance extends beyond academics. Putwain, Daly, Chamberlain, and Sadreddini (2015) conducted a study in the context of sports performance and found that higher levels of anxiety were associated with poorer performance in swimming tasks. This suggests that anxiety can hinder individuals' ability to perform at their best, whether in academic or non-academic domains (Putwain et al., 2015).

The impact of anxiety on academic performance may vary depending on the students' chosen disciplines. Sciences and social sciences represent two broad domains with distinct characteristics, teaching methods, and evaluation approaches. Studies have suggested that students in the sciences may experience higher levels of anxiety due to the rigorous demands of laboratory work, complex problem-solving tasks, and the necessity for

precision and accuracy (Beilock et al., 2007; Putwain et al., 2013). On the other hand, social sciences students may face anxiety related to extensive reading, critical analysis, and essay writing (Birenbaum, 2003). Understanding these discipline-specific differences is essential for developing targeted interventions to mitigate anxiety and enhance academic performance. The researchers suggested that the nature of math and science subjects, which often require problem-solving and critical thinking skills, may amplify the negative impact of anxiety on academic performance (Yeager et al., 2018).

Similarly, a study by Garcia and Sikström (2014) investigated the role of anxiety in language learning and its effect on academic performance in foreign language courses. The researchers found that higher levels of anxiety were associated with lower academic achievement in language learning. They suggested that anxiety might hinder language acquisition processes, such as memory retrieval and cognitive processing, leading to reduced performance in language-related tasks (Garcia & Sikström, 2014).

Discipline-specific differences have also been observed in relation to anxiety and academic performance in the social sciences. A study by Kahu, Stephens, Leach, Zepke and Marginson (2015) explored the impact of anxiety on academic success in the social sciences disciplines. They found that while anxiety had a negative effect on overall academic achievement, the relationship varied across specific social sciences disciplines. For example, anxiety had a stronger negative impact on performance in economics and political science compared to sociology and anthropology. These findings suggest that the nature of the discipline and its specific demands may influence the extent to which anxiety affects academic performance (Kahu et al., 2015).

These recent studies collectively contribute to the understanding of the negative effect of anxiety on academic performance among university students. They emphasize the need to address anxiety and provide appropriate support to promote students' well-being and academic success. By acknowledging the impact of anxiety on academic performance, educational institutions can develop interventions and strategies to mitigate anxiety levels and create a conducive environment for students to thrive academically (Von der Embse et al., 2018; Zheng & Cheng, 2018). Considering discipline-specific differences in the relationship between anxiety and academic performance is crucial for understanding the nuances of this complex issue. It highlights the need for tailored interventions and support mechanisms that address the specific challenges faced by students in different disciplines. While numerous studies have examined the relationship between anxiety and academic performance, comparative studies specifically focusing on sciences and social sciences students at the university level are relatively scarce. By recognizing the unique factors influencing anxiety and performance within specific disciplines, educational institutions can develop discipline-specific strategies to help students effectively manage anxiety and optimize their academic outcomes. Therefore, conducting a comparative study at the university level, such as the proposed study at the Women University of AJ&K, will fill a significant research gap and provide valuable insights into the discipline-specific effects of anxiety on academic performance.

Research Hypothesis

H₀₁: There is no effect of anxiety on academic performance of sciences and social sciences students of Women University of AJ&K Bagh.

H₀₂: There is no difference between the anxiety level of sciences and social sciences students of Women University of AJ&K Bagh.

Materials and Methods

Present study is quantitative in nature and causal comparative design is used to find out cause-and-effect relationships between variables. It is also known as ex post facto research. Unlike experimental research, causal comparative research does not involve manipulation of variables. Instead, it focuses on examining the impact of naturally occurring differences or pre-existing conditions on the outcome of interest. Therefore, it is crucial to investigate the comparative effects of anxiety on the academic performance of students studying science and social sciences to gain a comprehensive understanding of this phenomenon.

All undergraduate students in WUAI&K Bagh made up the research population. There were 1188 undergraduate students in all departments of sciences and social sciences faculty. Using simple random sampling technique the researcher selected a sample of 594 students. This sample was taken as half of the population.

Instrumentation

A standardized questionnaire prepared by Cassady (2019) was used to determine the level of anxiety. The items were assigned using a five-point rating system to rate the replies (i.e., Likert scale). These statements given the adopted questionnaire were consisted of the following indicators:

- Self doubt
- Procrastination and Stress
- Fear of Inadequacy and intimidation
- Constant Worry and anticipation
- Fear or apprehension about school
- Concerns about peer perceptions
- Physical Symptoms of anxiety
- Difficulty in handling responsibilities

The questionnaire contained 11 likert scale statements.

Reliability is indeed a statistical notion that refers to the consistency with which comparable results may be obtained when measuring events again and again. The researcher selected 20 respondents from the selected population for pilot testing. Table 1 shows the reliability measures of the instrument is .746 which shows that instrument is reliable for cultural context of the study.

Table 1
Reliability Statistics

Cronbach's Alpha	No of students
.746	20

Results and Discussion

The information gathered through the data collection instrument was checked, evaluated, and interpreted in light of the study's objectives. The level of anxiety was evaluated using descriptive statistics. Linear Regression was used to estimate the effect of anxiety on academic performance, while independent sample t-test was used to find out the difference between the two groups (Sciences and Social Sciences). The descriptive statistics are presented in table 2

Table 2
Descriptive Statistics of the Variables of the Study.

	N	Minimum	Maximum	Mean	Std. Deviation
SD	594	2.00	5.00	2.92	1.06
PS	594	1.00	3.00	1.26	.44
FIA	594	1.00	3.00	1.44	.73
SOD	594	2.00	5.00	2.80	1.02
CWA	594	1.00	3.00	1.60	.59
FAS	594	1.00	3.00	1.54	.66
CPP	594	1.00	3.00	1.59	.79
PSY	594	1.00	3.00	1.19	.50
DHSR	594	1.00	2.00	1.44	.49
Valid N (listwise)	594				

Where SD=Self doubt, PS=Procrastination and Stress, FIA= Fear of Inadequacy in Assignments, SOD= Sense of Dread and Intimidation, CWA= Constant Worry and Anticipation, FAS= Fear or Apprehension about School, CPP=Concerns about Peer Perceptions, PSY= Physical Symptoms of Anxiety, DHSR= Difficulty in Handling School Responsibilities.

Table 3
Results of Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.065	.081		37.759	.000
ANXIETY	-.30	.005	.239	5.992	.000

Dependent Variable: CGPA

In table 3, the regression analysis revealed that the predictor variable Anxiety has significant effect on the outcome variable Academic Performance ($\beta = 0.239$, $SE = 0.005$, $p < .05$). This indicates that for every one unit increase in Anxiety, Academic Performance is predicted to decrease by -.30 units, holding all other variables constant. The standard error (SE) of the coefficient was 0.005, suggesting that the estimate is relatively precise. The p-value of less than .05 indicates that the relationship between Anxiety and Academic Performance is statistically significant, providing evidence against the null hypothesis of no relationship. Therefore the Hypothesis H1, "There is no effect of Anxiety on Academic Performance of sciences and social sciences students of Women University of AJ&K Bagh" is rejected. The study concludes that Anxiety has a notable effect on students' academic performance in both faculties.

Table 4
Overall Goodness of fit of Regression Model

R Square	Adjusted R Square	F	df	p
.487	.471	35.905	593	.000

Table: 4 revealed that over all model is good fit ($F = 35.905$, $p < .05$). The coefficient of determination (R Square) was .487, indicating that 48.7% of the variance in Academic Performance can be attributed to Anxiety. The adjusted R Square was .471, suggesting that the model accounts for 47.1% of the variance in the dependent variable. These results establish Anxiety as a significant predictor of Academic Performance, with the regression model fitting the data reasonably well.

Table 5
Results of Independent Sample t-test

Faculty	N	Mean	Std. Deviation	t	df	p
Sciences	249	15.67	3.94	-.736	592	.462
Social Sciences	345	15.91	3.93			

Table: 5 shows the results of independent sample t-test. The mean of Social Sciences (M=15.91, SD=3.93) is slightly higher than the mean of Sciences (M=15.67, SD=3.94) which is statistically insignificant. The p-value is 0.462, which is greater than the typical significance level of 0.05, therefore, we fail to reject the null hypothesis, suggesting that there is no significant difference between the means of Sciences and Social Sciences. These findings validate the claim that there is no discernible difference in anxiety levels between students in the sciences and those in the social sciences.

Discussion

The first hypothesis of the study was there is no effect of Anxiety on Academic Performance of Sciences and Social Sciences Students. The study results found that a significant relationship between Anxiety (independent variable) and Academic Performance (dependent variable). The findings of the present study are consistent with previous research on the topic of anxiety and academic performance. The results of model summary analysis, indicating a significant difference between the groups, align with earlier studies that have highlighted the negative impact of anxiety on educational outcomes (Gonzalez, Barden, & Patrick, 2019; Richardson, Abraham, & Bond, 2012 and Anaya-Munoz et al., 2020). These studies have shown that higher levels of anxiety are associated with lower academic achievement, supporting the notion that anxiety can hinder cognitive processes, concentration, and information-processing abilities (Kaplan & Sadock, 2017).

The regression analysis in this study further strengthens the understanding of the relationship between anxiety and academic performance. Consistent with previous research, the results demonstrate that anxiety has a significant effect on academic performance, with higher levels of anxiety predicting lower performance (Gonzalez et al., 2019; Levecque et al., 2017; Putwain et al., 2015). The beta coefficient provides information about the direction and strength of this relationship, indicating that for every one unit increase in anxiety, academic performance is predicted to decrease by -0.030 units. These findings contribute to the existing body of literature by confirming the detrimental impact of anxiety on academic outcomes.

The second hypothesis was that there is no difference between the anxiety level of sciences and social sciences students of Women University of AJK Bagh. Regarding the comparison between groups, the t-test results suggest no significant difference between the means of Sciences and Social Sciences. This finding aligns with the current understanding that academic disciplines may not differ significantly in terms of anxiety levels and their impact on academic performance. It is important to note that this study's findings may be specific to the sample and context examined, and further research is needed to explore potential variations in anxiety levels across different academic disciplines. These findings of the present research was in line with the studies carried out in different level and time main studies are (Yeager, Dahl, and Dweck, 2018; Beilock et al., 2007; Putwain et al., 2013) in which the researchers found similar findings regarding the difference between the academic performance of two groups of students at different level.

Overall, the results of the present study add to the growing body of literature by reaffirming the negative impact of anxiety on academic performance. These findings underscore the importance of addressing anxiety in educational settings to support

students' achievement. By understanding the relationship between anxiety and academic performance, educators and institutions can develop appropriate strategies and interventions to help students cope with anxiety and maximize their learning potential. The results also emphasize the need for further research to explore the nuanced relationships between anxiety, academic performance, and specific academic disciplines.

Conclusion

The objectives of this study were to investigate the impact of anxiety on the academic performance of science and social sciences students and to compare the anxiety levels between these two groups at Women University of AJ&K Bagh. The research design employed in this study was causal comparative, also known as ex post facto research, which is a quantitative research design used to explore cause-and-effect relationships between variables. The findings of the study revealed a negative and significant impact of anxiety on students' academic performance. Moreover, no significant differences were observed between the two groups of students, sciences and social sciences. These findings provide valuable insights into the relationship between anxiety and academic performance among undergraduate students at Women University of AJ&K Bagh. It is recommended that University administration should foster a supportive and inclusive environment that recognizes and addresses students' diverse needs and challenges. Promote initiatives such as mental health awareness campaigns, counseling services, and student support programs to create a campus culture that prioritizes student well-being.

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