



THE STUDY ON POSTGRADUATE STUDENT'S COGNITIVE TEST ANXIETY (CTA) AT SIDHO-KANHO-BIRSHA UNIVERSITY IN PURULIA, WEST BENGAL

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RESEARCH ARTICLE



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DOI:
<https://doi.org/10.70096/tssr.250302010>

Abstract

Cognitive test anxiety, or CTA, is the phrase used to categorise the mental and emotional suffering people experience, particularly in academic settings, when they perform poorly on tests or examinations. It is typified by a variety of physiological, cognitive and affective recreations that can have a detrimental influence on an individual's general wellbeing and test scores. The frequency and effects of CTA among postgraduate students across a range of fields are investigated in this study. For the research, 362 post graduate students were chosen. Standardised questionnaires measuring academic performance and anxiety levels were used to gather quantitative data using the descriptive survey approach. The primary conclusions of this study showed that postgraduate students in arts against those in science, male versus female, and rural versus metropolitan areas did not significantly differ in CTA. Future studies are advised to examine the long-term impacts of CTA and the effectiveness of different coping strategies in lowering postgraduate student's anxiety levels.

Keywords: *Cognitive Test Anxiety, Descriptive Survey, Postgraduate Students, Rural, Urban, Arts, Science.*

Introduction

Anxiety has been studied for many years and is one of the most common phenomena in psychology. One of the most typical responses to stress is anxiety, a basic human feeling that indicates a lack of confidence or a perception of threat from the surroundings (Sarason, 1984). In particular, anxiety brought on by contemporary life issues stems from competitive environments, and this has a negative impact on student's academic lives. Around the world, anxiety is a widespread occurrence and a major contributing factor to teenager's subpar academic performance. Even said, a healthy amount of worry encourages people to put in a lot of effort and take on responsibilities (Khan, 2008; Donnelly, 2009). An essential concept to investigate the causes of this phenomena is test anxiety. Researchers have been examining the nature, causes, components, drivers, consequences, and the therapies of test anxiety since the 1950s (Zeidner, 1998). The concept of "Cognitive Test Anxiety" gained significant in the field of psychology during the mid-20th century, with researchers like Sarason and Mandler publishing early studies on the connection between cognitive and performance test anxiety in the 1950. According to these definitions, test anxiety is a subjective reaction to taking examinations and tests. This includes worry over the possibility of failing a test and the repercussions that may follow. Psychological hyperarousal, negative thought patterns, a desire to avoid evaluative situations, poor test performance, and trouble concentrating on the work at hand are some of the repercussions.

Review of Related Literatures

Cassady and Johnson (2002) have studied the relationship between academic performance and cognitive test anxiety. The findings were consistent with cognitive appraisal information processing theories of text anxiety and supported the idea that cognitive test has a substantial, consistent, and negative impact on academic performance metrics. Lufi and Darliuk (2005) studied on the relationship between learning difficulties (LD) and test anxiety in teenagers. It was predicted that compared to the non-LD groups, the LD group's verbal IQ would be lower. Additionally, the study discovered that LD did not significantly distinguish the personalities of teenagers who suffered from exam anxiety. Furlan et al., (2009) led on modifying the cognitive test anxiety scale for university students. The research indicated that used scale in the research is usefulness in upcoming cross-cultural studies on test anxiety in American and Argentinean students was shown by the results. Putwain et al. (2010) investigated on the association between exam performance and test anxiety is mediated by cognitive biases. The findings validated a paradigm in which the association between two aspects of test anxiety- worry and physical sign and symptoms, and academic success was totally mediated by cognitive distortions associated with academic domain. Saha (2012) carried out to compare West Bengal teacher candidate's environmental knowledge. The findings showed that pre-service and humanities teacher candidates are less

conscious that in-service and scientific teacher candidates, and that there is no discernible difference in the degree of environmental awareness between male and female teacher candidates. Saha, Maji and Saha (2012) led on a comparative analysis of gender in Birbhum District with respect to socio-economic status, and environmental consciousness. The result showed that there are no appreciable differences between male and female pupils in terms of socio-economic level, creativity, and environmental consciousness. Yang (2012) conducted to examine students at college views and self-efficacy on the use of m-learning device in a task-based language class. The findings indicated that the majority of students had favourable opinions about m-learning and felt that it had increased their enthusiasm to study English. Akinsola and Nwajei (2013) led on academic performance, depression, and text anxiety. Test anxiety, trait anxiety, and depression were shown to be positively and strongly correlated in the study's findings, and there was no discernible difference in the test anxiety levels between males and female. Mondal and Saha (2013) conducted a comparative analysis of secondary school science success disparities in the Darjeeling District. The findings showed that there are significantly differences between male and female students in terms of their performance in science courses at the secondary level also there are significant differences between rural and urban male students in terms of their performance in science at secondary levels. Rana and Mahmood (2013) measured on test anxiety levels among graduate and postgraduate students in Pakistan. The findings showed a strong inverse relationship between Pakistan university student's academic performance and their degree of test anxiety. Sen, Mondal and Saha (2013) research was carried out to compare and provide some facts and factors about the low accomplishment in physics at the higher secondary with respect to the scientific group at secondary level in the Birbhum District of West Bengal. The findings showed a considerable difference in science achievement between secondary and higher secondary pupils.

Kar, Saha and Mondal (2014) carried out to gauge West Bengal student's attitudes toward online education. According to the results, students had a positive attitude toward online learning, and their attitude rating did not substantially change depending on their personal characteristics, including gender, location, and stream. Kar, Saha and Mondal (2014) led on secondary school pupil's emotional intelligence in connection to their gender and home environment. The results showed that while gender has little bearing on emotional intelligence, home location significantly influences the expansion of emotional development. Ansari (2015) carried on the impact of emotional development on undergraduate student's stress level. This study demonstrated that undergraduate student's emotional maturity had a substantial influence on stress, with stress rising with decreasing emotional maturity and falling with increasing emotional maturity. Kundu, Saha and Mondal (2015) according to their study, there were no appreciable differences in the adjustment skills between male and female undergrads studying the humanities and sciences, but there were notable differences among socially intelligent individually. Amalu (2017) conducted an investigation on academic performance is predicted by cognitive test anxiety among Makurdi's secondary students. The analysis of the gathered data indicated that cognitive test anxiety is a predictor of academic achievement. Regression statistical analysis was used to examine the acquired data. Bethel-Eke and Ikpa (2017) have conducted research on the assessment of cognitive test anxiety and academic achievement in River State secondary schools. According to the study's findings, students frequently experience cognitive test anxiety when exam season draws near, irrespective of their age, gender, and residential status at school. Mondal and Saha (2017) examined how secondary school teacher's work happiness in impacted by their personalities and emotional intelligence. The results showed that teachers with high emotional intelligence have higher levels of satisfaction than both medium and low emotional intelligence teachers. Paul, Karmakar, Mondal and Saha (2017) examined the relationship between residency and gender and creativity among secondary pupils, Purulia. Results showed that boys are more creative than girls, and there is no discernible difference in creativity between pupils in rural and urban areas, but no discernible interaction between gender and place of residence. Roy, Saha and Maji (2017) studied how B.Ed. students in West Bengal's Purulia District felt about inclusive education. The result revealed that personal characteristics including gender, steam, and residence did not substantially affect the attitude of B.Ed. students.

Thomas et al. (2018) investigated to determine the cut score using cluster analysis and latent class in order to identify the severity of scale of the cognitive test anxiety. The results of the descriptive survey approach showed that there are real-world ramifications for teachers, students support personnel, and students of setting CTAS-2 severity levels. Rasouli et al. (2018) carried out on the effectiveness of cognitive learning techniques on student's academic achievement and test anxiety. The findings demonstrated the beneficial effects of cognitive learning strategy training, which reduced test anxiety and improved the academic achievement of the girls in the guidance school. Krispenz et al. (2019) investigated how to use cognitive evaluations to lessen exam anxiety and academic procrastination: Exploratory research examining the function of academic self-efficacy. The study found that it reduced test anxiety and consequent academic procrastination. An increase in self-efficacy contributed to the effect on the anxiety. Iorga et al. (2019) carried out an investigation on stress anxiety, and depression in medical students. The researcher discovered that stress, anxiety, and depression are major issues for medical students during their academic training. Arsha and Biswas (2020) investigated to determine the socio-demographic, lifestyle, and psychological elements that have a significant impact on student's mental health in Bangladesh as the result of the exam. The results showed a strong correlation between mental health traits and sleeping patterns, diets, time spent with parents, and living with family. Khan et al. (2020) executed research on how study skills and positive psychological strength mediate exam anxiety among students in Nigeria. Exam anxiety and study skills (SSK) are strongly and directly correlated, according to the path analysis of findings. Maxwell and Ikechukwu (2020) studied to assess senior secondary school pupils in Rivers State's cognitive test anxiety and examination malpractices. According to the study, among Rivers State secondary school pupils, excessive shaking, a sense of helplessness, poor self-esteem, emotional stress, and exam misconduct are significantly correlated.

Ali, Ejaz, and Bagum (2021) examined the gender and school wise effects of student's cognitive test anxiety on secondary school examinations. This correlational study found that lower level of cognitive test anxiety test positively effects student's performance on the SSC examination and vice versa. Gayen and Sen (2021) investigated how common stress, anxiety, and depression were among postgraduate students during the COVID-19 pandemic. The study's conclusions indicated that among female students in the education department, anxiety, stress, and depression are significantly correlated throughout all semesters. Pate et al. (2021) evaluated how academic and standardised test performance is affected by anxiety of cognitive test. The results showed that 18% of pharmacy students have high degree of mental exam fear, which can have a major effect on how well they do on a range of conventional student success metrics. Saha (2021) investigated on college student's attitudes regarding yoga practice in relation to their gender, place of residence, and steam of the study. The findings showed that while attitudes about yoga practice varied by location and stream, they did not change significantly by gender. Roy and Saha (2022) focused on postgraduate student's achievement motivation of Purulia district. The result of the study showed that there was no discernible variation in postgraduate student's achievement motivation according to their gender, place, and stream. Sen et al. (2021) investigated to determine how postgraduate students' levels of stress, anxiety, and depression varied throughout the COVID-19 epidemic. The findings indicated that levels of stress of postgraduate students, anxiety, and depression did not important change according to their semester, department, and gender.

Kultur and Ozcan (2022) sought to investigate, after adjusting for gender, the connection between low, mid, and high achiever groups' performance on the high-stakes university admission exam and the cognitive and affective components of fear. The results demonstrated that, after adjusting for gender in three groups, the variance in test performance on the university admission exam was not significantly explained by the cognitive and emotional components of test anxiety. Adhikari et al. (2023) led on the use of statistics in education is a measure for measure. Researchers thoroughly examined the uses of Mahalanobis Distance, cluster analysis, and correlation coefficients in this work. Adhikari, Mahato and Sen (2023) investigated among science and social science students, with anxiety and depression serving as independent variables. Using the self-efficacy scale and DASS-21, postgraduate student's stress, general self-efficacy, and specific were measured. The study's conclusions showed a relationship between all of the previously mentioned characteristics. Bakete and Akurugu (2023) examined the disparities in grade level and gender among college of education student's cognitive test anxiety and exam results. The study found that while female students had high levels of exam anxiety ($p=0.004$), there was there is no statically significant difference in the anxiety levels of level 100 and 200 pupils on cognitive tests ($p \geq .05$). Khan et al. (2023) showed that views toward online learning did not significantly differ between male and female undergraduate students, as well as between students in rural and urban areas. However, there were notable difference in the opinions of undergraduate students in the science and arts streams in this area. Mahato, Sen and Adhikari (2023) carried out a study that addressed the correlation between the dichotomous variables of male and female, as well as the independent factors of general self-efficacy, stress, anxiety, and depression. The results of the study showed that, at least for post-graduate students, all of the previously described factors are related. Mahato, Gayen and Mahato (2023) investigated the connection between undergraduate students' self-efficacy and m-learning in Purulia, West Bengal. The findings showed m-learning and undergraduate student's self-efficacy do not correlate in West Bengal's Purulia area. Result also showed that m-learning and are not significantly influenced by either sex or residential location. Mahato, Gayen and Mahato (2023a) examined the connection between undergraduate students' internet addiction and academic fortitude in the Purulia, West Bengal. The findings showed no discernible link between academic fortitude and internet addiction. There is no discernible difference in academic resilience between both boys and girls, but there is a notable difference in online addiction.

Sen, Pal and Adhikari (2023) examined how two groups of postgraduate students' dependent variables and Mahalanobis Distance measures stress, anxiety, sadness, and self-efficacy differently. It is found that there is little variation in the dynamical character of the five dependent variables across the different independent variable groups. Das and Mahato (2024) employed clustering techniques to analyse favourable mental health of Purulia District students, West Bengal, and was successful in establishing correlations between positive mental health and its items, demonstrating the influence of particular factors on positive mental health clusters and the complex inter-dimensions relationships. Mahato and Das (2024) examined how Purulia undergraduate student's environmental attitudes were compared using the t-test and Mahalanobis Distance (MD). The findings showed that there are no appreciable disparities between peoples who are male and female students or between students studying science and the arts across the variable that were assessed. Mahato and Das (2024) investigated the positive mental health of pupils in West Bengal's Purulia area. The results demonstrated a high degree of mental health that was consistent across residential origins, institutions, and genders, understanding the need for all-encompassing mental health programs in educational settings. Gulcicegi & Alishah (2024) studied on undergraduate student's academic performance and cognitive test anxiety in Istanbul. The findings indicated that their degree of cognitive test anxiety and their grade point averages did not correlate. Nonetheless, there are some disparities between the grade point averages of the two students, their departments, and genders. Ansary and Khatun (2025) sought to examine undergraduate student's smartphone addiction, tension, anxiety, and depression in relation to their gender, locality, and family structure. According to the findings of the study, undergraduate students in rural and urban areas and male-female do not significantly differ in their levels of stress, anxiety, or depression.

Many studies in the field of education employ different statistical methods including t-tests [Adhikari (2023); Adhikari et al. (2023); Pal (2024), Mahanti et al. (2016); Mahato and Sen (2021); Saha (2012); Mahanti et al. (2016); Mondal and Saha (2017); Mondal et al. (2018); Saha (2021); Sen et al. (2013); Mondal and Saha (2013); Khatun et al. (2022); Karmakar et al. (2016); Ansary et al. (2022); Sen and Kar (2014); Kar and Sen (2014)].

Research Gap: By going through all these previous literatures, it seems that there are number of gaps current in those previous undertaking that is, most of the researchers has focused on the work on effect of CTA on academic performance but till date no researcher has focused the comparison work on cognitive test anxiety between male-female, rural-urban, and arts-science postgraduate level pupils, at Purulia district's Sidho-Kanho-Birsha University.

Research Variables

CTA. Dichotomous variable Gender (Male, Female), Residence (Rural, Urban), and Stream (Arts, Science).

Objectives

- To compare CTA between male and female postgraduate students.
- To compare CTA between rural and urban postgraduate students.
- To compare CTA between arts and science postgraduate students.

Hypotheses: The researcher constructs the following hypotheses in the light of the three primary goals mentioned above:

H₀₁: 'There is no significant difference between male and female postgraduate students regarding CTA'.

H₀₂: 'There is no significant difference between rural and urban postgraduate students regarding CTA'.

H₀₃: 'There is no significant difference between arts and science postgraduate students regarding CTA'.

Methodology

Method: The study was carried out using a descriptive survey kind of methodology.

Population: The population for this research is the postgraduate students of Sidho-Kanho-Birsha University in Purulia, West Bengal India.

Sample & sampling technique:

The researcher employed the random sample approach to conduct this study. 362 postgraduate students from the arts and science department at Sidho-Kanho-Birsha University were selected as the sample for this study in order to accomplish this.

Scale used: The researcher used the Cognitive Test Anxiety Scale, or CTAS, which was developed by Cassidy and Johnson (2002). It uses a 4-point Likert scale with 17 items.

Statistical techniques: Researcher has used inferential statistics like the t-test, and descriptive statistics like the mean and S.D. are to analyse calculated data in this study.

Data Analysis and Interpretation

Hypotheses wise data analysis and interpretation

Table 1: Results of 't'- test for CTA regarding gender of postgraduate students.

Variables	N	M	S. D.	df	't'	Remarks
Male	77	35.31	6.889	360	.019	Not significant at 0.05 level.
Female	285	37.92	9.047			

From Table 1, The mean scores for male and female students are 35.31 and 37.92, respectively, while the S.D. for male and female students is 6.889 and 9.047. At the 0.05 level, the t-test result of .019 with df of 360 is not significant. There is no discernible difference between male and female postgraduate students, according to the calculated statistics. So, the null hypothesis, **H₀₁**: 'There is no significant difference between male and female postgraduate students regarding CTA' is retained. Hence, regarding CTA, there is no appreciable difference exist in male and female of postgraduate students who are male and female. Regarding CTA, there are no appreciable differences between postgraduate students who are male and female by sex.

Table 2: Results 't'- test for CTA regarding residence of postgraduate students.

Variables	N	M	S. D.	df	't'	Remarks
Rural	285	38.07	8.363	360	.003	Not significant at 0.05 level.
Urban	77	34.77	9.417			

From Table 2, The mean scores for rural and urban students are 38.07 and 34.77, respectively, while the S.D. for rural and urban students is 8.363 and 9.417 At the 0.05 level, the t-test result of .003 with df of 360 is not significant. There is no discernible difference between rural and urban postgraduate students, according to the calculated statistics. So, the null hypothesis, **H₀₂**: 'There is no significant difference between rural and urban postgraduate students regarding CTA' is retained. Hence, regarding

CTA, there is no appreciable difference exist in rural and urban of postgraduate students who are rural and urban. Regarding CTA, there are no appreciable differences between postgraduate students who are urban and rural by residential.

Table 3: Results 't'- test for CTA regarding stream of postgraduate students.

Variables	N	M	S. D.	df	't'	Remarks
Arts	300	37.95	8.601	360	.004	Not significant at 0.05 level.
Science	62	34.52	8.625			

From Table 3, The mean scores for arts and science students are 37.95 and 34.52, respectively, while the S.D. for rural and urban students is 8.601 and 8.625. At the 0.05 level, the t-test result of .004 with df of 360 is not significant. There is no discernible difference between arts and science postgraduate students, according to the calculated statistics. So, the null hypothesis, H_0 : 'There is no significant difference between arts and science postgraduate students regarding CTA' is retained. Hence, regarding CTA, there is no appreciable difference exist in rural and urban of postgraduate students who are arts and science. Regarding CTA, there are no appreciable differences between postgraduate students who are arts and science by steam.

Findings of the study

- Female students have higher CTA then male students, but 'there is no significant difference exist between male and female postgraduate students regarding CTA'.
- Rural students have higher CTA then urban students, but 'there is no significant difference exist between rural and urban postgraduate students regarding CTA'.
- Arts students have higher CTA then science students, but 'there is no significant difference exist between arts and science postgraduate students regarding CTA'.

Conclusion

Cognitive Test Anxiety (CTA) is a psychological phenomenon involving heightened levels of anxiety associated with taking tests or examinations. The primary conclusions of this study showed that female, rural, and arts students have higher CTA then male, urban, and science students, but postgraduate students in arts against those in science, male versus female, and rural versus metropolitan areas did not significantly differ in CTA. So, from the result can say CTA gender, residence, and stream wise independent.

Acknowledgment: No

Author's Contribution: Shankar Mondal: Methodology, Literature Review, Data Collection, Analysis, Drafting, Referencing.

Funding: No

Declaration/Consent for Publication: Not Applicable.

Competing Interest: No

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