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COMPETITIVE EXAM ASPIRANTS ON MATHEMATICS INTEREST AND ANXIETY: AN ANALYSIS OF UNDERGRADUATE STUDENTS

R. Rajkumar[1], Dr. G. Hema[2]

[1]*Doctoral Student, Department of Education, Periyar University, Salem-636011, Tamil Nadu, India.*

[2]*Assistant Professor, Department of Education, Periyar University, Salem-636011, Tamil Nadu, India.*

ABSTRACT

Mathematics interest is a complex and behavioural aspect of mathematics. It has so many characteristics, and it can be attributed to as many situations as discuss in mathematics education. Mathematics is not enough to impart theoretical learning; must that learning put into practice. Mathematics anxiety is a feeling of tension, apprehension, or fear that interferes with math performance. Mathematics anxiety, also known as mathematics phobia, is anxiety about one's ability to do mathematical concepts. It is a phenomenon that is often considered when examining students' problems in mathematical concepts in competitive examinations. The present study aimed to analyse the mathematics interest and anxiety among competitive exam aspirants of undergraduate students. The investigator has selected the normative survey method for conducting this study. The investigator used it as a mathematical interest and mathematical anxiety research tool for collecting the data. The reliability value was 0.872 and 0.789. In the Salem district, the investigator selected 40 competitive exam aspirants using a stratified random sampling technique. A set of competitive exam aspirants from each exam study centre was selected randomly. Results revealed that competitive exam aspirants of arts and science subject differ in mathematics interest and mathematics anxiety. Results also showed a relationship between mathematics interest and mathematics anxiety among competitive exam aspirants and mathematics interest nearly 8% per cent of the variation in mathematical anxiety of competitive exam aspirants of undergraduate students.

KEYWORDS: ***Mathematics interests, Mathematics anxiety, Competitive examination, Aspirants.***

INTRODUCTION

Education is a process of human enlightenment and empowerment to achieve a better quality of life that leads to developing a harmonious personality and involves all aspects of intellectual religious, moral, and physical of the person's personality. Schools are always transitional institutions (Rajkumar & Hema, 2016). They prepare pupils for education or occupation or family life and so on. In a real sense, mathematics is a science of space and quantity that helps solve life problems needing numeration and calculation. Mathematics provides opportunities for the intellectual gymnastic of the man's inherent powers.

Mathematics interest is a complex behavioural aspect of mathematics. It has so many characteristics, and it can be attributed to as many situations as we discuss in mathematics education (Rajkumar & Hema, 2017). The critical strategy of mathematics teaching should focus on keeping the student's interest in mathematics. If the students are interested in learning mathematics, their academic achievement and teacher tasks become more accessible. The importance of interest in mathematics cannot be overestimated. Students who are interested in their learning activities are likely to report high competence beliefs (Marsh, Trautwein, Ludtke, Koeller and Baumert, 2005; Tracey, 2002), high achievement levels (Koeller, Baumert and Schnabel, 2001) and choose high school courses that are related to their interests (Watt et al., 2012). Mathematics Interest is a vital interest of psychologists, advertisers and more to understand what makes people change their beliefs or opinions. Mathematical anxiety is anxiety about one's ability to do mathematics (Malini & Rajkumar, 2020). It was a phenomenon that is often considered when examining students' problems in mathematics (Rajkumar & Hema, 2019). Mark

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Ashcraft (2002) defines math anxiety as "a feeling of tension, apprehension, or fear that interferes with math performance". Trezise and Reeve (2016) showed that students' math anxiety could fluctuate throughout a math class duration. Furner and Gonzalez-Dehass (2011) explained that "math anxiety is a real issue that can impact a young person's goals, many career-related decisions they may make in life and their overall future".

REVIEW OF RELATED LITERATURE

The Literature review of studies conducted on interest in mathematics studied the influence of learning style, intelligence and classroom climate on process outcomes in mathematics (Aruna, 2015). The study results obtained that boys and girls differ significantly at 0.01 level in the mean scores of cognitive style, intelligence, classroom climate and dependent variable process outcomes in science; urban and rural school students. Another author Vandana Sharma, (2014). struggled to determine no significant difference was observed between boys and girls on the variable of mathematical interest. Also, it was observed that rural and urban area students did not show any significant difference in mathematical interest. Mohamed Illiyas & Aron Antony Charles (2017) studied interest in mathematics and high school student's academic achievement in the Chennai district. The study results revealed a significant difference in interest in mathematics and academic achievement of high school level students with respect to their type of management. Preston (2008) defined it as feelings of tension and anxiety that interfere with manipulating numbers and solving mathematical problems in a wide variety of ordinary life and academic situations. Since then, others have continued their efforts driven by research evidence that mathematics anxiety not only inhibits one's ability to perform mathematically (Preston, 2008), but it is highly probable to have originated from classroom experiences too (Newstead, 2003). Lay Keow Ng (2012) revealed mathematics anxiety in secondary school students. The study results showed an average anxiety level of 44% and a negative correlation with achievement.

METHODOLOGY

a. Research Design

The present study attempts to determine the mathematics interest and anxiety among competitive exam aspirants of undergraduate students. The investigator has selected the normative survey method for conducting the study.

b. sample

A stratified random sampling technique was used. The sample for the present study consisted of 40 competitive exam aspirants. The samples of both sexes coming from both rural and urban areas were included in the study.

c. Tools used in the study

The data are essential for carrying out a research investigation. The data are collected with the help of a particular apparatus called tools. The success of research must be received by selecting a proper tool for the research. So, the investigator used as mathematical interest and anxiety and the tool's reliability was 0.872 and 0.789.

d. Data Collection

In the Salem district, the investigator selected 40 competitive exam aspirants using a stratified random sampling technique. A set of competitive exam aspirants from each exam study centre was selected randomly. Thus, the researcher used a stratified random sampling technique to collect data from the vast area of Salem district.

DATA ANALYSIS

The present study data collected from 40 competitive exam aspirants have been analysed using the following statistical techniques: t- test, correlation, and regression analysis.

RESULTS AND FINDINGS

t-test

To test the arts and science, students differ with mathematical interest and mathematical anxiety.

Table – 1: Comparison of Arts and Science competitive exam aspirants on mathematical interest and mathematical anxiety

Variables	Subject	N	Mean	S D	t- value	P-value
Mathematical Interest	Arts	10	82.70	13.606	2.632	0.022
	Science	30	94.80	8.880		
Mathematics Anxiety	Arts	10	77.60	19.375	2.736	0.019
	Science	30	95.50	12.572		

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Interpretation
The above table shows that the calculated P values are less than 0.05 and are significant at a 5% level in all cases. Hence the formulated hypothesis is not accepted in these cases.

Conclusion
competitive exam aspirants of arts and science subject differ in mathematical interest and mathematical anxiety.

Correlation Analysis
To identify any relationship between mathematical interest and mathematical anxiety among competitive exam aspirants.

Table – 2: Relationship between mathematical interest and mathematical anxiety among competitive exam aspirants

Variable		Mathematical Interest	Mathematics Anxiety
Mathematical Interest	Pearson Correlation	1	0.644
	Sig. (2-tailed)		0.000
	N	40	40

In mathematical interest and mathematical anxiety, relations are observed. Hence in these cases, the hypothesis is not accepted.

Conclusion
There is a relationship that exists between mathematical interest and mathematical anxiety among competitive exam aspirants.

Regression Analysis
To find out mathematical interest, how much predict the mathematical anxiety among competitive exam test takes.

(i) Mathematical interest

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.207	0.043	0.018	8.4939

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	122.306	1	122.306		
Residual	2741.559	38	72.146	1.695	0.201
Total	2863.865	39			

Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	59.888	11.050		5.420	0.000
Mathematical Interest	0.156	0.120	0.207	1.302	0.201

The multiple R of the linear regression equation is (0.207). For testing, the multiple correlation coefficient (0.207) shows that there is a low correlation in mathematical interest among competitive exam aspirants. The coefficient of multiple determination of adjusted R square is (0.018) for the mathematical interest presented in the table. Therefore, it can be concluded that nearly 1.8 per cent of the variation in competitive exam aspirants' mathematical interest. The estimated standard error is 8.493.

ANOVA table showing that the significance value of 0.201 indicates that combining these academic performances significantly predicts the mathematical interest among competitive exam aspirants.

Regression co-efficient that the research variables academic performance had a significant predicting influence on competitive exam aspirants'

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mathematical interest at a 0.05% level of significance. It is inferred that predictors had the highest and significant standardised beta coefficient, which indicates that it was the most crucial factor contributing to mathematical interest. In the raw score form, the equation is

AC = 59.888 + 0. 156 Mathematical Interest

The mathematical interest is dependent on academic performance.

(ii) Mathematical Anxiety

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.335	0.112	0.089	8.18011

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	321.124	1	321.124		
Residual	2542.742	38	66.914	4.799	0.035
Total	2863.865	39			

Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	58.147	7.427		7.829	0.000
Mathematics Anxiety	0.176	0.080	0.335	2.191	0.035

The multiple R of the linear regression equation is (0.335). Testing multiple correlation coefficient (0.335) shows a low correlation in mathematical anxiety among competitive exam aspirants. The coefficient of multiple determination of adjusted R square is (0.089) for the mathematical anxiety presented in the table. Therefore, it can be said that nearly 8.9 per cent of the variation in the mathematical anxiety of competitive exam aspirants. The estimated standard error is 8.18011.

ANOVA table showing that the significance value of 0.035 indicates that the combination of these academic performances significantly predicts the mathematical anxiety among competitive exam aspirants.

Regression co-efficient that the research variables academic performance had a significant predicting influence on the mathematical anxiety among competitive exam aspirants at 0.05% level of significance. It is inferred that academic performance predictors had the highest and significant standardised beta coefficient, which indicates that it was the most crucial factor contributing to mathematical anxiety. In the raw score form, the equation is

AC = 58.147 + 0. 176 Mathematical Anxiety

Mathematical anxiety is dependent on academic performance.

DISCUSSION ON THE FINDINGS

Mohamed Illiyas (2017) studied interest in mathematics and high school students' academic achievement in Chennai district. The study results revealed a significant difference in interest in mathematics and academic achievement of high school level students with respect to their type of management. Compare with the present study, the result was found. Competitive exam aspirants of arts and science subject differ in mathematical attitude and mathematical anxiety and to predict academic performance significantly predicts the mathematical interest and mathematical attitude.

Compare with the above study, the same result was found. There is a relationship between interest in Mathematics and academic achievement of high school level students.

Lay Keow Ng (2012) revealed mathematics anxiety in secondary school students. The study results showed that an average anxiety level of 44% and a negative correlation with achievement. Compare with the above study, a different result was found. It is found that there is a relationship between mathematical interest and mathematical anxiety among competitive exam aspirants.

CONCLUSION

The present study aimed to analyse the competitive exam aspirants mathematical interest and mathematical anxiety among undergraduate students.

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Mathematics is the main subject of the school curriculum. It develops many skills among competitive exam aspirants. The study's findings showed that competitive exam aspirants' mathematics interest and mathematics anxiety should be motivated and genius in the exam centres for the practical classroom's success-mathematics anxiety in competitive exam aspirants. This area needs more attention. Competitive exam aspirants underlined the predominant factors that interfere with students' mathematics learning. The majority is college-related, and teachers creating safe learning environments and helping students develop positive attitudes since those who are less anxious are more likely to succeed in mathematics. They were very much mathematical interest and mathematical anxiety; there is a significant difference observed between arts and science of competitive exam aspirants on the variable of mathematical interest and mathematical anxiety. The present study's findings suggested that teachers should take care of competitive exam aspirants in mathematics for their better achievement. Competitive exam aspirants should provide equal and more facilities to increase their mathematical interest and reducing mathematical anxiety.

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