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Effect of Gender and Stream on Self-efficacy of Students

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Abstract

The present study was design to study of self-efficacy among male and female students and the study to find out the difference of self-efficacy among arts and science stream students. Total 160 post graduate students were included in the study 50 male and 50 female students. Purpose of the study Self-efficacy scale is used to collect requisite data for the present investigation. The two way analysis of variance is used for compare the group of gender and stream. The result shows that there is a significant difference among male and female students on self-efficacy. There is no significant difference among arts and science stream students on self-efficacy.

Keywords: Self-efficacy, Gender and Students.

Introduction:

Self-efficacy refers to an individual's belief in their own ability to successfully perform specific tasks or handle particular situations. It influences how people think, feel, motivate themselves, and behave. High self-efficacy can lead to greater motivation, resilience, and persistence in the face of challenges, while low self-efficacy may result in doubt, anxiety, and avoidance of difficult tasks. The concept was introduced by psychologist Albert Bandura and is a key component of social cognitive theory.

Higher self-efficacy is linked to positive outcomes, including improved grades, enhanced athletic performance, more satisfying romantic relationships, and healthier lifestyles. Albert Bandura, a pioneering humanist and the originator of the self-efficacy concept, defined it as "people's beliefs about their capabilities to produce designated

levels of performance that exercise their influence over events that affect their lives" (Bandura, 1994). Self-efficacy plays a crucial role in shaping our self-perception and emotions. For instance, consider someone who dreams of becoming a doctor but doubts his medical and academic abilities. Despite putting in significant effort, he feels unhappy due to a lack of self-confidence. What he needs is self-efficacy—a strong belief in his own capabilities.

Significant research has demonstrated that a positive learning environment is essential for fostering self-efficacy among students of all ages. Studies on teaching methods and self-efficacy indicate that when teachers adopt interactive and collaborative learning approaches, students tend to achieve higher self-efficacy scores compared to those in more rigid or closed classroom settings. Although this study focused on a specific group of students studying a particular subject, the findings were validated and remained consistent when re-examined across different age groups.

In educational contexts, the term "stream" often refers to academic tracks or specialization streams students choose based on their interests and abilities, such as science, commerce, arts, or technical fields. The relationship between stream selection and self-efficacy explores how students' beliefs in their abilities influence their choice of academic paths and how these choices, in turn, affect their confidence. Research often shows that males tend to report higher self-efficacy in areas such as mathematics, science, and physical activities, while females may report higher self-efficacy in social and verbal domains. These differences can vary depending on cultural, societal, and environmental factors, as well as the specific task or domain. Societal stereotypes can influence self-efficacy beliefs. For example, stereotypes suggesting that males are better at math can lower females' confidence, even when their actual ability is comparable.

Gender roles and expectations may shape experiences and opportunities, affecting the development of self-efficacy. Supportive environments that challenge stereotypes can enhance self-efficacy for all genders. Higher self-efficacy in a domain can lead to greater effort and persistence, influencing achievement differently across genders.

Objectives:

1. To search the self-efficacy among male and female students.
2. To search the self-efficacy among arts and science students

Hypotheses of the Study:

1. There will be significant differences among male and female students on self-efficacy.
2. There will be significant differences among arts and science students on self-efficacy

METHDOLOGY

Participants:

In this study, a simple random sampling technique was employed. The sample comprised a total of 160 subjects, divided into two groups: gender (80 males and 80 females) and stream (Arts 80 and Science 80). All students included in this study only post graduate students from arts and science streams are included. The researchers controlled for age, educational status, and nativity to some extent, ensuring that participants were aged between 21 and 30 years.

Gender	Stream		Total
	Arts	Science	
Male	40	40	80
Female	40	40	80
Total	80	80	160

Variable:

Independent variable

Gender

Stream

Dependent variable

Self-efficacy

Research Design

In this study three independent variables are included. All variables like independents variables namely gender two types' male and female and stream is two types' arts and science. Natures of independents variables and aim of the study 2X2X2 Factorial design is used in this study.

Area	Gender (A)	
	Male (A1)	Female (A2)
Rural (B1)	A1B1	A2B1
Urban (B2)	A1B2	A2B2

Tools:

1. Self-efficacy scale:

The self-efficacy scale developed by Arun Kumar Singh and Shruti Narain consists of 20 items designed to assess individuals' beliefs in their ability to perform tasks, achieve goals, or overcome obstacles, specifically for those aged 12 and older. The test-retest reliability of the scale was calculated at 0.82, while the split-half reliability was found to be 0.74, with all reliability coefficients being significant at the 0.01 level. To validate the scale, it was compared against the General Perceived Self-Efficacy Scale originally developed in German by Jerusalem and Schwarzer and later adapted into Hindi. The concurrent validity of the self-efficacy scale was found to be 0.92, indicating a significant correlation.

Results and Interpretations:

Summary of ANOVA for Self-efficacy of Students.

Source of variance	Type III Sum of Squares	df	Mean Square	F	Sig.
Gender	2780.55	1	2780.55	10.52	0.01
Streams	465.80	1	465.80	1.76	N.S.
Gender * Streams	232.80	1	232.80	0.88	N.S.
Error	41196.52	156	264.08		
Total	520679.00	160			
Corrected Total	44675.69	159			

Mean and SD for Self-efficacy of Students

	Male	Female	Arts	Science
Mean	50.37	58.71	56.25	52.83
SD	15.74	16.80	16.34	17.10
N	**80**	**80**	**80**	**80**

The results related to the hypothesis have been recorded. Male students (Main effect of A1) mean score on the self-efficacy is 50.37 and SD is 15.74 and Female students (Main effect of A2) mean is 58.71 and SD is 16.80. The difference between the two mean is highly significant ($F= 10.52$, $df = 1, 156$, $P < 0.01$) Its mean male and female students differ significantly from each other from the mean score of self-efficacy. It concluded that the female student's level of self-efficacy is higher than the male students. That's way hypothesis No. 1 is, there will be significant difference between male and female students on self-efficacy is accepted.

Second independent variable in this study is a stream. Arts steam students (Main effect of B1) mean is 56.25 and SD is 16.34 and science stream students (Main effect of b2) mean is 52.83 and SD is 17.10. The difference between the two mean is not significant ($F= 1.76$, $df = 1, 156$, $P > 0.05$) Its mean arts and science stream students not differ significantly from each other from the f ratio and mean score of self-efficacy. It concluded that the arts and science stream students significantly differ on each other on the self-efficacy. That's way hypothesis No. 2 is, there will be significant difference between arts and science stream students on the self-efficacy, is rejected. Interaction effect of independent variable Gender x stream on self-efficacy F value is ($F = 0.88$) is not significant at the both the level of confidence. It suggests that the combined influence of gender (male/female) and stream (arts and science) on student's self-efficacy is not simply additive but interdependent.

Study concocted by Dumanjug, Heber & Serato, Jennifer & Vicente, Maria & Panaguiton, Jannah & Recto, Zari. (2024) notable differences in self-efficacy were identified across academic programs, with Social Work students reporting the highest levels of self-efficacy, while Psychology students reported the lowest. However, gender

did not significantly affect either self-efficacy or academic performance. The findings suggest that self-efficacy interacts with other factors, such as motivation, learning strategies, and program-specific influences, rather than serving as a direct predictor of academic success. Amthul, F. (2022) study utilized a between-group design to investigate the influence of gender on general self-efficacy. A non-probability purposive sampling technique was employed to select a sample of 150 participants. Descriptive statistics and t-tests were used for statistical analysis. The results indicated a significant difference in general self-efficacy between males and females.

Conclusion:

There is a significant difference among male and female students on self-efficacy. There is no significant difference among arts and science stream students on self-efficacy.

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