The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 11, Issue 1, January- March, 2023
DIP: 18.01.010.20231101, DOI: 10.25215/1101.010
https://www.ijip.in

Research Paper

Levels of Self-Esteem of Engineering and Liberal Arts Students: A Cross-Sectional Study

Ishan Chawla[1]*

ABSTRACT

Self-esteem has been shown to have a considerable influence on our lives, it impacts our aspirations, personal goals, interaction with others, mental well-being, happiness, adjustment, success, academic achievements, and satisfaction (Mann et al., 2004). The development of self-esteem during childhood and adolescence depends on a wide variety of intra-individual and social factors (Harter, 1999). In this context, self-esteem is defined as the positive or negative attitude toward a particular object, namely, the self (Rosenberg, 1965). This study aimed to understand the variance in the levels of global self-esteem between engineering and liberal arts students in the Indian context. This study was conducted using Rosenberg's Self Esteem Scale (Rosenberg, 1965) on 100 undergraduate engineering and liberal arts students mainly from the Pandit Deendayal Energy University (PDEU) using random stratified sampling method, and the results were analyzed using independent samples t-test and one-way analysis of variance (ANOVA). The results showed that there were differences in the levels of self-esteem between engineering and liberal arts students but these differences were not significant. This study can be further used to explore the development and maintenance of a stable level of self-esteem among undergraduate students in India.

Keywords: *Self-Esteem, Engineering, Liberal Arts, Undergraduate Students.*

Self-Esteem has been explored by a large number of researchers over the past few decades and it has been proven crucial for our social and psychological well-being and, has shown to have a huge influence over our lives, including our aspirations, personal goals and interaction with others (Mann et al., 2004). Self-esteem is the positive or negative attitude toward a particular object, namely, the self (Rosenberg, 1965). It is the evaluative and affective aspect of self-concept, and is considered as equivalent to self-regard, self-estimation and self-worth (Harter, 1999). Self-esteem has been controversial where it has been debated as unrealistic, illogical and self and socially destructive (Ellis, A. 2001). However, the positive outcomes of self-esteem should not be ignored. Positive levels of self-esteem are seen to be associated with mental well-being, happiness, adjustment, success, academic achievements and satisfaction and better recovery after severe diseases (Mann et al., 2004). Self-esteem is the most dominant and powerful predictor of happiness (Furnham and Cheng, 2000), although the causation has not been clearly established high

[1]Undergraduate Student, Pandit Deendayal Energy University, Gandhinagar, India.
*Corresponding Author

Received: December 12, 2022; Revision Received: January 21, 2023; Accepted: January 25, 2023

self-esteem does lead to greater happiness. The consequences for low levels of self-esteem are crucial as well. Low self-esteem can be a causal factor in depression, anxiety, eating disorders, poor social functioning, school dropout and risk behavior (Mann et al., 2004). Low self-esteem is more likely than high to lead to depression under some circumstances (Baumeister et al., 2003). These multiple empirical studies have shown that self-esteem is a variable that has far-reaching effects on our lives.

Engineering and liberal arts students have drastically different life paths, starting from high-school through college and then their life post-college hence, differ in the development throughout their lives. The development of self-esteem during childhood and adolescence depends on a wide variety of intra-individual and social factors (Harter, 1999), since engineering students and liberal arts students have different factors affecting their lives, which translates to different life choices and can in-turn affect the perceived and measured levels of global self-esteem differently. Engineering students and liberal arts students vary also in their personality, beliefs, morals and behavior. On the Bernreuter Personality Inventory the Engineering students are found to be more "stable" than the Liberal Arts and also appear to be more "self-sufficient" than the Liberal Arts students (Goodman C, 1942). Engineers are more: introverted, intrinsically motivated, flexible and creative, and tough-minded/analytical. They are also less: assertive, emotionally resilient, optimistic, customer-oriented, concerned with image management, hard-working, and visionary in their thinking style (Williamson et al, 2013). Engineers tend to be higher on Achievement, Deference, Order, Dominance, and Endurance and lower on Affiliation, Abasement, and Nurturance (Izard C, 1960). The development of and personalities of people in India are very different from other countries due to social, cultural, economic and traditional differences and has complex bi-lateral effects on the levels of global self-esteem. There have not been any major country specific studies in India, on the variations in the levels of global self-esteem between engineering students and liberal arts students and this study aims to measure and explore the variances in the levels of global self-esteem along with other demographic factors, among engineering and liberal arts students.

Objectives

- To study the variation in the levels of global self-esteem between undergraduate engineering and liberal arts students.
- To study the relationship of year of study, gender and age with global self-esteem levels in undergraduate students.

Hypothesis

- *H1: There is a significant difference in the levels of global self-esteem between liberal arts students and engineering students.*
- *H0: There is no significant difference in the levels of global self-esteem between liberal arts students and engineering students.*

METHODOLOGY

Sample

A sample of 100 undergraduate students was drawn using stratified random sampling, of whom 45 were engineering students and 55 were liberal arts students. Of the total 100 students, 58 were males and 42 were females; 12 were in the 1st year, 22 in the 2nd year, 55 in the 3rd year and 11 in the 4th year. The students were mainly from the Pandit Deendayal

Energy University, Gandhinagar, India and took the Rosenberg's Self Esteem Scale (RSES) either online or in person, developed by Morris Rosenberg in 1965.

Instruments

One instrument was used in this study,

Rosenberg's Self Esteem Scale (RSES): The Rosenberg's Self Esteem Scale (RSES) was developed by Morris Rosenberg in 1965, which is one of the most widely used measures of self-esteem. The RSES is a self-report measurement which assesses global self-esteem by measuring both positive and negative feels about self. It consists of 10 items/statements answered on a 4 point Likert scale from strongly agree to strongly disagree; out of which, 5 statements are positively worded and 5 statements are negatively worded. A scale from 0 to 40 is used, where a rate of less than 15 may indicate problematic low self-esteem. The sub-scales used in this scale are self-appreciation and self-depreciation. The original sample for which the scale was developed in the 1960s consisted of 5,024 high school juniors and seniors from 10 randomly selected schools in New York State. The RSES presented high ratings in reliability areas; internal consistency was 0.77, minimum coefficient of reproducibility was at least 0.90. Test-retest reliability for the 2-week interval was calculated at 0.85, the 7 - month interval was calculated at 0.63. The scale is quick to administer and easy to score which makes it highly suitable to be used in the public domain, however it is not a diagnostic aid for any psychological issue.

Procedure

Multiple undergraduate students were selected from all over India, and were pursuing either an engineering degree or a liberal arts degree. Most students belonged to the upper-middle class of the Indian population and had economically stable backgrounds. These students were interrogated individually through a digital format, using an empirical and standardized instrument which measures Global Self-Esteem. Demographic details namely, sex, age, year of study, monthly family income and contact details were also collected at the same time with informed consent. The data was analyzed using the SPSS (Statistical Package for the Social Sciences). The data was analyzed using the mean, standard deviation, two-sample t-test assuming equal variance and analysis of variances (ANOVA) methods of statistics.

RESULTS

Table No. 1 Descriptive statistics of the total data

Descriptive Statistics	
Mean	17.96
Standard Error	0.534264339
Median	18
Mode	17
Standard Deviation	5.342643389
Sample Variance	28.54383838
Kurtosis	0.078255453
Skewness	-0.0289202189
Range	26
Minimum	4
Maximum	30
Sum	1796
Count	100

Table No. 2 Two-sample t-test assuming equal variance of liberal arts and engineering students.

Two-sample t-test assuming equal variance		
	Liberal Arts	**Engineering**
Mean	17.50909	18.51111
Variations	35.92121	19.57374
Observations	55	45
Pooled Variance	28.58153	
df	98	
t stat	-0.93244	
P(T<=t) two-tail	0.3534	

A two-sample t-test assuming equal variance was used to test the hypothesis, that there is a significant difference in the levels of self-esteem between liberal arts and engineering students, on the data collected. The results indicate that there is a difference in the means of liberal arts (17.509) and engineering students (18.511) but this difference is not significant, P value = 0.3534 which is > than the significance level of 0.05 (refer to table 2); thus failing to reject the null hypothesis, hence proving that there is no significant difference in the levels of self-esteem between liberal arts and engineering students.

Table No. 3 ANOVA (analysis of variances) single factor test, of the total data

ANOVA: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
1st Year Scores	12	247	20.58333333	9.17424242
2nd Year Scores	23	370	16.08695652	27.9011858
3rd Year Scores	55	982	17.85454545	30.6080808
4th Year Scores	11	206	18.72727273	36.8181818

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	169.5657972	3	56.52193241	2.00405941	0.118468971	2.69839754
Within Groups	2735.760935	97	28.20372098			
Total	2905.326733	100				

An ANOVA (analysis of variances) single factor test was used to measure the levels of self-esteem between 1st year, 2nd year, 3rd year and 4th year students. The means of the 1st year (20.583), 2nd year (16.086), 3rd year (17.854) and 4th year (18.727) students show a decline after the 1st year and then a gradual increase then on, although this difference is not significant, P value = 0.118 which is > than the significance level of 0.05 (refer to table 3).

Table No. 4 Two-sample t-test assuming equal variance of males and females.

t-Test: Two-Sample Assuming Equal Variances		
	Male	Female
Mean	18.68966	16.95238
Variance	20.98972	37.9489
Observations	58	42
Pooled Variance	28.08488	
df	98	
t Stat	1.617971	

Another two-sample t-test assuming equal variance was used to compare the levels of self-esteem between the means of male and female undergraduate students. Although there is a difference between male (18.689) and female (16.952) undergraduate students, this difference is not significant, P value = 0.108 which is > than the significance level of 0.05 (refer to table 4).

DISCUSSION

The results of this study show that while there is a difference in the levels of self-esteem between liberal arts and engineering students, this difference is not significant, thus failing to reject the null hypothesis. These results indicate that there is no significant difference in the levels of self-esteem between liberal arts and engineering students, despite engineers being more: introverted, intrinsically motivated, flexible and creative, and tough-minded/analytical; and less: assertive, emotionally resilient, optimistic, customer-oriented, concerned with image management, hard-working, and visionary in their thinking style (Williamson et al, 2013) and tend to be higher on Achievement, Deference, Order, Dominance, and Endurance and lower on Affiliation, Abasement, and Nurturance (Izard C, 1960) than liberal arts students. The results also show that while there is difference in between the means of the levels of self-esteem of male and female undergraduate students, this difference is not significant; which supports the findings of (Kling, et. al, 1999) that males score higher on standard measures of global self-esteem than females, but the difference is small. Men and women are to be much alike, in that reflected appraisals are the most important source of self-esteem for both groups, followed by self-perceived competence and then by social comparisons and no difference was found between them in self-perceived competence (Schwalbe and Staples, 1991). The levels of self-esteem in undergraduate students show a decline after the 1st year and then a gradual increase there on, but this difference is not significant; this study has not delved into the reasons for this change. This decline in the levels of self-esteem of undergraduate students after the 1st year followed by a gradual increase can be studied in detail in a longitudinal study by future researchers. This research can also be used as a stepping stone for further research to understand and maintain a healthy levels of self-esteem in undergraduate students in India.

REFERENCES

A. Furnham; H. Cheng (2000). "Perceived parental behaviour, self-esteem and happiness", *Soc Psychiatry Psychiatr Epidemiol*, 35(10), 463–470. doi:10.1007/s001270050265.

Baumeister, R. F.; Campbell, J. D.; Krueger, J. I.; Vohs, K. D. (2003). "Does High Self-Esteem Cause Better Performance, Interpersonal Success, Happiness, or Healthier Lifestyles?", *Psychological Science in the Public Interest*, 4(1), 1–44. doi:10.1111/1529-1006.01431.

Ellis, A. (2001). "Overcoming destructive beliefs, feelings, and behaviors: New directions for Rational Emotive Behavior Therapy", *Prometheus Books*. ISBN: 978-157392879 3.

Goodman, C. H. (1942). "A comparison of the interests and personality traits of engineers and liberal arts students", *Journal of Applied Psychology*, 26(6), 721–737. Doi:10.1 037/h0055696.

Harter, S. (1999). "The construction of the self: A developmental perspective", *Guilford Press*. ISBN: ISBN-1-57230-432-4.

Izard, Carroll E. (1960). "Personality characteristics of engineers as measured by the Edwards Personal Preference Schedule", *Journal of Applied Psychology*, 44(5), 332–335. doi:10.1037/h0046444.

Mann, M. (2004). "Self-esteem in a broad-spectrum approach for mental health promotion", *Health Education Research*, 19(4), 357–372. doi:10.1093/her/cyg041.

Rosenberg, M. (1965). "Rosenberg Self-Esteem Scale RSES)". *APA PsycTests*. doi:10.1037/ T01038-000.

Williamson, Jeanine M.; Lounsbury, John W.; Han, Lee D. (2013). "Key personality traits of engineers for innovation and technology development", *Journal of Engineering and Technology Management*, 30(2), 157–168. doi:10.1016/j.jengtecman.2013.01.00 3.

Acknowledgement

The study was made successful through the aid of multiple significant people who helped the researcher to the completion of this study. The author appreciates all the people who participated and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Chawla, I. (2023). Levels of Self-Esteem of Engineering and Liberal Arts Students: A Cross-Sectional Study. *International Journal of Indian Psychology*, *11(1),* 087-092. DIP:18.01.010.20231101, DOI:10.25215/1101.010