

A CASE STUDY SHOWING PARAMETERS AFFECTING THE QUALITY OF EDUCATION: FACULTY PERSPECTIVE

By

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ABSTRACT

The study aims to examine the faculty members' perspective (age wise, Gender wise and Work Experience wise) of parameters affecting the quality of education in an affiliated Undergraduate Engineering Institution in Haryana. It is a descriptive type of research. The data has been collected with the help of 'Questionnaire Based Survey'. The sample size for the study is 110 comprising the faculty respondents. The sample has been taken on the Random (Probability) basis and the questionnaire was filled by the faculty members (teaching B.Tech) chosen on a the random basis from an affiliated Undergraduate Engineering Institution in Haryana. For data analysis and conclusion of the results of the survey, statistical tool like t test was performed with the help of high quality software, 'SPSS (Statistical Package for Social Science)'. To conclude, for "Selection Process", "Academic Excellence", "Infrastructure", "Personality Development and Industry Exposure" and "Management and Administration", the two samples (Age & Work-experience wise) have same perceptions with respect to the parameters. For "Selection Process", "Infrastructure", "Personality Development and Industry Exposure" and "Management and Administration", the two samples (gender wise) have same perceptions with respect to the parameters. While for "Academic Excellence", the two samples (gender wise) have different perceptions with respect to the parameter.

Keywords: Affiliated, Development, Management, Standard, Technical.

INTRODUCTION

The challenge of educating millions of young people implies that it is needed to scale up the educational efforts multi-fold, despite having the largest number of higher education institutes in the world. Scaling up is not possible unless the students become successful, create value in the society and contribute back to their alma-mater or, better still, start new institutes of global standards themselves. The curriculum of some of the colleges/universities is more or less obsolete and do not equip students with the necessary skills or impart latest knowledge. If a student passes out of a chosen course, he or she should be employable as a work force. Unfortunately, given the phenomenal share as a lack of technical knowledge in the courses of education, students are found wanting in the desired skills and technical soundness. To address this issue, focus should be on strengthening the vocational streams in

schools/colleges. The universities/schools/colleges should regularly revisit their curriculum by involving experts from different fields. So that the curriculum can lead to knowledge development. Teachers are the most important factors for an innovative society, because teachers' knowledge and skills not only enhance the quality and efficacy of education, but also improve the potential for research and innovation. Given the higher level of GER (Gross Enrollment Ratio) to be achieved by 2020, a large number of teachers would be required to educate the growing young population. Maybe, students could be used as teachers, especially good students coming from lower income groups so that they can be partly compensated. There is a need to encourage teachers to participate by presenting research papers in seminars/workshops/conferences and receive periodic trainings for updating the knowledge/skills. It is equally important that a feedback mechanism from students is introduced in universities/colleges to assess and evaluate

teachers' role in the institutional developmental process.

The quality of education and training being imparted in the technical education institutions varies from excellent to poor, with some institutions comparing favorably with the best in the world and others suffering from different degrees of faculty shortages; infrastructure deficiencies; curricula obsolescence; lack of autonomy in academic, financial, administrative, and managerial matters; poor involvement in knowledge creation and dissemination, and poor interaction with community and economy.

Some problems revealed by a Government of India World Bank study on "Scientific and Technical Manpower Development in India" are listed below:

- Multiple control mechanisms and controlling regulations have stifled innovative initiatives in recruitment of faculty, admission of students, curricula revision and up gradation, and financial management in most institutions.
- Resource constraints, low efficiency of utilization of existing resources and lack of mechanism for sharing physical and human resources of sister institutions have led to large scale obsolescence of physical resources, deterioration of quality of teaching/learning processes and lowering of competence of teachers.
- Low internal efficiency of most institutions due to large drop-outs and failure rates.
- Rapid obsolescence of curricula and course contents due to infrequent revision and much delayed response to technological advances and consequent market demands.
- Failure to attract and retain high quality faculty due to archaic recruitment and promotion procedures, absence of incentives for quality performance, and non-existent staff development policies in most institutions.
- Inadequate tapping of talent pools of women, minorities and persons with disabilities who still remain under-represented in technical profession and developing the critical mass of research and innovation capacity that can propel them into the knowledge economy.
- The economic growth of 10% Gross Domestic Product

(GDP) is expected to be maintained which requires highly competent, skilled and trained manpower. It is estimated that an increase in the degree level engineering intake at 15% would be required to cater to the requirements of industry and other sectors.

This paper tries to study the level of quality enforcement in an engineering institution in Haryana, India from the faculty members' perspective based on the parameters like Selection Process, Academic Excellence, Infrastructure, Personality Development and Industry Exposure and Management and Administration. For this, the author designed a structured questionnaire based on 'Likert Scale' where questions related to the above five parameters were asked from the faculty members of the institution. For the conclusion of the results, the responses were analyzed with the help of t 'test' on SPSS.

1. Literature Review

Sundareswari's study emphasis that library functions are a very important role in the fast changing go green world of publishing. The study describes various facets in collection and development of an e-resource in the engineering college libraries. The study concluded that though the electronic resources offer ease of use, wider access, more rapid updating, cost saving over local maintenance and storage, the librarians are finding it difficult to define issues related to policy of collection, development and archiving of these Electronic Resources (Sundareswari, 2013).

Tak's study concluded that the survey conducted and the study with respect to the ICT integration in education revealed the fact that participants feel that technology helps in the process of delivering education. By introducing modifications and ICT integration in educational system, better education can be provided to a larger segment of population thereby creating generation of students who will be up-to-date for the modern world and its demands (Tak, 2013).

Faisal's study focuses on developing and assessing speaking skills in a graded manner at the tertiary level to enhance communicative competence. The study concluded that the teacher can develop the speaking

skills of the learners and use the assessment strategies to enhance the learners speaking skills and make them competent to speak in any situation. The learners' assignments can be assessed based on the four skills and a score sheet can be provided. The teacher assessment sheet and score sheet will enable the learner to know his or her proficiency in the English language (Faisal, 2013).

Dharini, Mohan and Sudarson's study concluded that the current investigation is a part of other major expectations in the field of higher education in India. The experience throughout the current investigation and competitions had been accelerating and providing insights into the perceptions of students undergoing higher education in an institution of repute (Dharini et al., 2013).

Sindhvani & Kumar's study concluded that people across the globe are looking towards the system of education to infuse human values among the students so that the world remains as a place of peace, security and prosperity (Sindhvani & Kumar, 2013).

Bakshi's study concluded that many initiatives have been taken by Government of India but it need to study the problems of Knowledge Management (KM) initiatives based on actual case studies and experiences. People need to explore KM tools and techniques and evaluate the results. The real success of KM in making a learning society lies in helping the students grow into worthy human beings with courage to face the problems with an inner strength (Bakshi, 2013).

Bala's study concluded that, public higher education institutions need to be supported by the central and state governments to reach the minimum standards. Competitive grants need to be provided to encourage healthy competition in higher education. Collaborative activities are required to be supported through public funding (Bala, 2013).

Mukherji's study concluded that, in the context of Indian politics in the post reform period, it may be fruitfully employed in studying phenomena such as the rise of vernacular elites, judicialization of politics and emerging forms of identity politics. By incorporating policy as the theoretical as well as empirical basis of comparative

research, future studies may find more effective means of tracing important linkages between developments in non-electoral and electoral spheres of democratic competition (Mukherjee, 2012).

Sandhu & Daviet's study concluded that the results indicate the needs for increased awareness that open access which are valuable and qualitative source of information. Respondents' generally have positive attitudes toward open access which indicates that many students support open access materials and might therefore be more likely to encourage others to publish in them (Sandhu & Daviet, 2012).

Viji's study concluded that in India the enrolment rate in elementary education is higher but the dropout rate has increased from 1st standard to higher education. So the government should take more steps and techniques to reduce the dropout rate (Viji, 2012).

Ghosh's study concluded that in India the queues of students lining up to join US higher education institutions seem to grow longer and longer, regardless of very high and rising costs of such education, or practical concerns such as visa difficulties. And the attraction for such students seems to be not simply the lure of eventual emigration to the US, but a genuine perception that the system is inherently superior (Ghosh, 2008)

Naik's study concluded that if India dreams to become a superpower by 2020, it will have to throw away the old shackles and adopt a new approach, as suggested in the study. HEI have now come in global competition, where survival of the fittest is the law. With the will and skill, Indian Institutes can certainly win (Naik, 2005).

Due to the development of new techniques and changes in technology, everybody has to learn more and more about new products. Learning is a continuous process. Even uneducated persons are required to learn about the changes in technology. Harish's study concluded that Continuous Education Programmes helps the Engineering College Teachers to update their knowledge. It also helps in their career advancement. It helps the teachers to place themselves to higher positions (such as Senior Lecturer, Assistant Professor, and Professor Etc). It

also helps at the time of accreditation of institute by the National Board of Accreditation (NBA) (Harish, 2005)

2. Research Methodology

2.1 Objective of the study

The objective of the study is to examine the faculty members' perspective (age wise, gender wise and work experience wise) of parameters affecting the quality of education in an affiliated undergraduate engineering institution in Haryana.

2.2 Sampling

The research is a descriptive type of research in nature. The data has been collected with the help of 'Questionnaire Based Survey'. The sample size for the study is 110, comprising of the faculty respondents. The sample has been taken on the random (Probability) basis and the questionnaire was filled by the faculty members (teaching B.Tech) chosen on the random basis from an affiliated Undergraduate Engineering Institution in Haryana.

2.3 Database collection

The primary data was collected with the help of questionnaire and Personal Interview Method from the affiliated technical institute chosen randomly. The respondents were requested to give their opinion by filling the required information in their respective questionnaires. The questions in the questionnaires were based on the Likert scale where responses were sought on five point scale. There were five columns representing Strongly Agree, Agree, Not Sure, Disagree and Strongly Disagree in the given sequence. The responses as tick mark were to be marked in the box [] printed against each question. And the secondary data was gathered through the studies and research work carried out in the past.

2.4 Scope of the study

The area for the study is National Capital Region (NCR) and the institution to be studied is an affiliated Technical Educational Institution in NCR. The respondents are the faculty members (teaching B.Tech) who were selected randomly from the above said geographical area.

2.5 Statistical tools to be used

For data analysis and conclusion of the results, statistical

tool like t test was performed with the help of high quality software 'SPSS'.

3. Data Analysis and Interpretations

3.1 Interpretations

Tables 1 and 2 give the descriptive statistics for each of the two groups (as defined by the age wise variable). The last column gives the standard error of the mean for each of the two groups.

Following are the null and alternative hypotheses,

$$H_0: \mu \text{ of group 1} = \mu \text{ of group 2}$$

$$H_1: \mu \text{ of group 1} \neq \mu \text{ of group 2}$$

Where μ is the mean number of group

3.1.1 Selection

The inferential statistics gives the significance (p value) of Levene's test which is 0.080. As 0.080 is larger than α (usually 0.05), So, we accept the null hypothesis and thus it can be assumed that the variances are equal and researcher would use the middle row of the output. From Table 2, the t value is 0.589. There are 108 degrees of freedom. The two-tailed p value associated with the test is 0.557.

As by, the decision rule, If $p \leq \alpha$, then reject H_0 . From Table 2, 0.557 is more than 0.05, so we accept H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically no difference between the mean number of two groups, where group 1 has ($M = 4.14$, $s = 1.383$) and group 2 has ($M = 4.31$, $s = 1.783$), $t(108) = 0.589$, $p = 0.557$, $\alpha = 0.05$ as shown in Table 1.

	Age	N	Mean	Std. Deviation	Std. Error Mean
Selection	0 to 30 years	59	4.14	1.383	.180
	Above 30 years	51	4.31	1.783	.250
Academic Excellence	0 to 30 years	59	40.56	9.169	1.194
	Above 30 years	51	40.78	9.220	1.291
Infrastructure	0 to 30 years	59	22.00	6.128	.798
	Above 30 years	51	21.73	5.793	.811
Personality Development And Industry Exposure	0 to 30 years	59	18.54	5.405	.704
	Above 30 years	51	19.53	5.182	.726
Management And Administration	0 to 30 years	59	31.71	8.461	1.102
	Above 30 years	51	31.65	7.835	1.097

Table 1. Showing Group Statistics for the sample (age wise)

3.1.2 Academic Excellence

The inferential statistics gives the significance (p value) of Levene's test which is 0.904. From Table 2, 0.904 is larger than α (usually 0.05), So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. From Table 2, t value is 0.128. There are 108 degrees of freedom. The two-tailed p value associated with the test is 0.898. As by the decision rule If $p \leq \alpha$, then reject H_0 . Here, 0.898 is more than to 0.05. So we accept H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically there is no difference between the mean number of two groups, where group 1 has (M = 40.56, s = 9.169) and group 2 has (M = 40.78, s = 9.220), $t(108) = 0.128$, $p = 0.898$, $\alpha = 0.05$ as given in Table 2.

3.1.3. Infrastructure

The inferential statistics gives the significance (p value) of Levene's test which is 0.650. From Table 2, 0.650 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the t value is 0.240. There are 108 degrees of freedom. The two-tailed p value associated with the test 0.811. As by the decision rule If $p \leq \alpha$, then reject H_0 . Here, 0.811 is more than to 0.05. So we accept H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically no difference between the mean number of two groups, where group 1 has (M = 22.00, s = 6.128) and group 2 has (M = 21.73, s = 5.793), $t(108) = 0.240$, $p = 0.811$, $\alpha = 0.05$ as given in Table 1.

3.1.4 Personality Development and Industry Exposure

The inferential statistics gives the significance (p value) of Levene's test which is 0.997. As from Table 2, 0.997 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, from Table 2, the t value is 0.973. There are 108 degrees of freedom. The two-tailed p value associated with the test 0.333. As by, the decision rule If $p \leq \alpha$, then reject H_0 . Here, 0.333 is more than 0.05, so we accept H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically no difference between the mean number of two groups, where group 1 has (M = 18.54, s = 5.405) and group 2 has (M = 19.53, s = 5.182), $t(108) = 0.973$, $p = 0.333$, $\alpha = 0.05$ as shown in Table 1.

3.1.5 Management and Administration

The inferential statistics gives the significance (p value) of Levene's test which is 0.760. As from Table 2, 0.760 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the t value is 0.041. There are 108 degrees of freedom. The two-tailed p value associated with the test is 0.967. As by, the decision rule is If $p \leq \alpha$, then

		Levene's Test for Equality of Variances		t-test for Equality of Means			95% Confidence Interval of the Difference			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Selection	Equal variances assumed	3.128	.080	-.589	108	.557	-.178	.302	-.777	.421
	Equal variances not assumed			-.579	93.676	.564	-.178	.308	-.789	.433
Academic Excellence	Equal variances assumed	.014	.904	-.128	108	.898	-.225	1.758	-3.709	3.259
	Equal variances not assumed			-.128	105.539	.898	-.225	1.758	-3.711	3.261
Infrastructure	Equal variances assumed	.208	.650	.240	108	.811	.275	1.142	-1.990	2.539
	Equal variances not assumed			.241	107.112	.810	.275	1.138	-1.981	2.530
Personality Development And Industry Exposure	Equal variances assumed	.000	.997	-.973	108	.333	-.987	1.014	-2.997	1.023
	Equal variances not assumed			-.976	106.822	.331	-.987	1.011	-2.991	1.017
Management And Administration	Equal variances assumed	.094	.760	.041	108	.967	.065	1.563	-3.034	3.164
	Equal variances not assumed			.042	107.469	.967	.065	1.555	-3.017	3.147

Table 2. Showing Independent Samples Test for the sample (age wise)

reject H0. Here, 0.967 is more than 0.05, so we accept H0. That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically no difference between the mean number of two groups, where group 1 has (M = 31.71, s = 8.461) and group 2 has (M = 31.65, s = 7.835), t (108) = 0.041, p = 0.967, $\alpha = 0.05$ as shown in Table 1.

3.2 Interpretations

Tables 3 and 4 give the descriptive statistics for each of the two groups (as defined by the Gender wise variable). The last column gives the standard error of the mean for each of the two groups.

Following are the null and alternative hypotheses:

H0: μ of group 1 = μ of group 2

H1: μ of group 1 \neq μ of group 2

Where μ is the mean number of group

3.2.1. Selection

The inferential statistics gives the significance (p value) of

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Selection	Male	48	4.35	1.695	.245
	Female	62	4.11	1.483	.188
Academic Excellence	Male	48	43.08	9.963	1.438
	Female	62	38.79	8.062	1.024
Infrastructure	Male	48	22.17	6.072	.876
	Female	62	21.65	5.893	.748
Personality Development And Industry Exposure	Male	48	19.21	5.657	.816
	Female	62	18.84	5.051	.642
Management And Administration	Male	48	32.75	8.360	1.207
	Female	62	30.85	7.934	1.008

Table 3. Showing Group Statistics for the sample (gender wise)

Levene's test which is 0.768. As from Table 4, 0.768 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the t value is 0.795. There are 108 degrees of freedom. The two-tailed p value associated with the test is 0.428. As by, the decision rule If $p \leq \alpha$, then reject H0. Here, 0.428 is more than to 0.05, so we accept H0. That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically no difference between the mean number of two groups, where group 1 has (M = 4.35, s = 1.695) and group 2 has (M = 4.11, s = 1.483), t (108) = 0.795, p = 0.428, $\alpha = 0.05$ as shown in Table 3.

3.2.2 Academic Excellence

The inferential statistics gives the significance (p value) of Levene's test which is 0.208. As from Table 4, 0.208 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the t value is 2.498. There are 108 degrees of freedom. The two-tailed p value associated with the test 0.014. As by, the decision rule If $p \leq \alpha$, then reject H0. Here, 0.014 is less than to 0.05, so we can reject H0. That implies that we observe a difference in the mean number of two groups.

Thus, t test revealed a statistically reliable difference between the mean number of two groups, where group 1

		Levene's Test for Equality of Variances		t-test for Equality of Means			95% Confidence Interval of the Difference			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
		Selection	Equal variances assumed	.087	.768	.795	108	.428	.241	.304
	Equal variances not assumed			.781	93.849	.437	.241	.309	-.372	.854
Academic Excellence	Equal variances assumed	1.605	.208	2.498	108	.014	4.293	1.719	.886	7.700
	Equal variances not assumed			2.432	89.084	.017	4.293	1.765	.785	7.801
Infrastructure	Equal variances assumed	.036	.849	.454	108	.651	.522	1.148	-1.754	2.797
	Equal variances not assumed			.453	99.694	.652	.522	1.152	-1.765	2.808
Personality Development And Industry Exposure	Equal variances assumed	.707	.402	.361	108	.719	.370	1.023	-1.659	2.398
	Equal variances not assumed			.356	95.035	.723	.370	1.038	-1.692	2.431
Management And Administration	Equal variances assumed	.003	.955	1.214	108	.228	1.895	1.562	-1.200	4.990
	Equal variances not assumed			1.206	98.496	.231	1.895	1.572	-1.224	5.015

Table 4. Showing Independent Samples Test for the sample (gender wise)

has ($M = 43.08, s = 9.963$) and group 2 has ($M = 38.79, s = 8.062$), $t(108) = 2.498, p = 0.014, \alpha = 0.05$ as shown in Table 3.

3.2.3 Infrastructure

The inferential statistics gives the significance (p value) of Levene's test which is 0.849. As from Table 4, 0.849 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the t value is 0.454. There are 108 degrees of freedom. The two-tailed p value associated with the test 0.651. As by, the decision rule If $p \leq \alpha$, then reject H_0 . Here, 0.651 is more than 0.05, so we accept H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically that there is no difference between the mean number of two groups, where group 1

	Work Experience	N	Mean	Std. Deviation	Std. Error Mean
Selection	0 to 5 years	57	4.07	1.387	.184
	More than 5 years	53	4.38	1.757	.241
Academic Excellence	0 to 5 years	57	40.28	8.766	1.161
	More than 5 years	53	41.08	9.615	1.321
Infrastructure	0 to 5 years	57	21.19	5.560	.736
	More than 5 years	53	22.60	6.313	.867
Personality Development And Industry Exposure	0 to 5 years	57	18.25	4.626	.613
	More than 5 years	53	19.81	5.880	.808
Management And Administration	0 to 5 years	57	30.91	7.640	1.012
	More than 5 years	53	32.51	8.642	1.187

Table 5. Showing Group Statistics for the sample (work experience wise)

		Levene's Test for Equality of Variances		t test for Equality of Means			95% Confidence Interval of the Difference			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Selection	Equal variances assumed	2.654	.106	-1.022	108	.309	-.307	.301	-.903	.289
	Equal variances not assumed			-1.013	98.899	.314	-.307	.303	-.909	.295
Academic Excellence	Equal variances assumed	.514	.475	-.453	108	.651	-.795	1.753	-4.269	2.679
	Equal variances not assumed			-.452	105.129	.652	-.795	1.759	-4.282	2.692
Infrastructure	Equal variances assumed	.846	.360	-1.246	108	.216	-1.411	1.132	-3.655	.834
	Equal variances not assumed			-1.240	103.875	.218	-1.411	1.138	-3.667	.845
Personality Development And Industry Exposure	Equal variances assumed	2.779	.098	-1.558	108	.122	-1.566	1.005	-3.558	.427
	Equal variances not assumed			-1.544	98.716	.126	-1.566	1.014	-3.578	.446
Management And Administration	Equal variances assumed	.563	.455	-1.029	108	.306	-1.597	1.553	-4.675	1.481
	Equal variances not assumed			-1.024	104.027	.308	-1.597	1.560	-4.690	1.496

Table 6. Showing Independent Samples Test for the sample (work experience wise)

has ($M = 22.17, s = 6.072$) and group 2 has ($M = 21.65, s = 5.893$), $t(108) = 0.454, p = 0.651, \alpha = 0.05$ as shown in Table 3.

3.2.4 Personality Development and Industry Exposure

The inferential statistics gives the significance (p value) of Levene's test which is 0.402. As from Table 4, 0.402 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the t value is 0.361. There are 108 degrees of freedom. The two-tailed p value associated with the test 0.719. As by, the decision rule If $p \leq \alpha$, then reject H_0 . Here, 0.719 is more than to 0.05, so we accept H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically no difference between the mean number of two groups, where group 1 has ($M = 19.21, s = 5.657$) and group 2 has ($M = 18.84, s = 5.051$), $t(108) = 0.361, p = 0.719, \alpha = 0.05$ as given in Table 3.

3.2.5 Management and Administration

The inferential statistics gives the significance (p value) of Levene's test which is 0.955. As from Table 4, 0.955 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the t value is 1.214. There are 108 degrees of freedom. The two-tailed p value associated with the test 0.228. As by the decision rule, If $p \leq \alpha$, then reject H_0 . Here, 0.228 is more than 0.05, so we accept H_0 .

That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically no difference between the mean number of two groups, where group 1 has ($M = 32.75, s = 8.360$) and group 2 has ($M = 30.85, s = 7.934$), $t(108) = 1.214, p = 0.228, \alpha = 0.05$ as given in Table 3.

3.3 Interpretations

Tables 5 and 6 give the descriptive statistics for each of the two groups (as defined by the Work experience wise variable). The last column gives the standard error of the mean for each of the two groups.

Following are the null and alternative hypotheses:

$H_0: \mu$ of group 1 = μ of group 2

$H_1: \mu$ of group 1 \neq μ of group 2

Where μ is the mean number of group

3.3.1 Selection

The inferential statistics gives the significance (p value) of Levene's test which is 0.106. As from Table 6, 0.106 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the t value is 1.022. There are 108 degrees of freedom. The two-tailed p value associated with the test is 0.309. As by the decision rule, If $p \leq \alpha$, then reject H_0 . Here, 0.309 is more than to 0.05, so we accept H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically no difference between the mean number of two groups, where group 1 has ($M = 4.07, s = 1.387$) and group 2 has ($M = 4.38, s = 1.757$), $t(108) = 1.022, p = 0.309, \alpha = 0.05$ as given in Table 5.

3.3.2 Academic Excellence

The inferential statistics gives the significance (p value) of Levene's test which is 0.475. As from Table 6, 0.475 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the t value is 0.453. There are 108 degrees of freedom. The two-tailed p value associated with the test is 0.651. As by, the decision rule, If $p \leq \alpha$, then

reject H_0 . Here, 0.651 is more than to 0.05, so we can reject H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically no difference between the mean number of two groups, where group 1 has ($M = 40.28, s = 8.766$) and group 2 has ($M = 41.08, s = 9.615$), $t(108) = 0.453, p = 0.651, \alpha = 0.05$ as mentioned in Table 5.

3.3.3 Infrastructure

The inferential statistics gives the significance (p value) of Levene's test which is 0.360. As from Table 6, 0.360 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the t value is 1.246. There are 108 degrees of freedom. The two-tailed p value associated with the test is 0.216. As by, the decision rule If $p \leq \alpha$, then reject H_0 . Here, 0.216 is more than to 0.05, so we accept H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, t test revealed statistically no difference between the mean number of two groups, where group 1 has ($M = 21.19, s = 5.560$) and group 2 has ($M = 22.60, s = 6.313$), $t(108) = 1.246, p = 0.216, \alpha = 0.05$ as given in Table 5.

3.3.4 Personality Development and Industry Exposure

The inferential statistics gives the significance (p value) of Levene's test which is 0.098. As from Table 6, 0.098 is larger than α (usually 0.05), we accept the null hypothesis and thus it can be assumed that the variances are equal and

Parameters	Result
Selection Process	t test revealed statistically no difference between the mean number of two groups
Academic Excellence	
Infrastructure	
Personality Development and Industry Exposure	
Management and Administration	

Table 7. Showing results of t test age wise

Parameters	Result of t test (gender wise)
Selection Process	t test revealed statistically no difference between the mean number of two groups
Infrastructure	
Personality Development and Industry Exposure	
Management and Administration	t test revealed a statistically reliable difference between the mean number of two groups
Academic Excellence	

Table 8. Showing results of t test gender wise

we would use the middle row of the output. Assuming equal variances, the *t* value is 1.558. There are 108 degrees of freedom. The two-tailed *p* value associated with the test is 0.122. As by, the decision rule If $p \leq \alpha$, then reject H_0 . Here, 0.122 is more than to 0.05, so we accept H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, *t* test revealed statistically no difference between the mean number of two groups, where group 1 has ($M = 18.25, s = 4.626$) and group 2 has ($M = 19.81, s = 5.880$), $t(108) = 1.558, p = 0.122, \alpha = 0.05$ as shown in Table 5.

3.3.5 Management and Administration

The inferential statistics gives the significance (*p* value) of Levene's test which is 0.455. As from Table 6, 0.455 is larger than α (usually 0.05). So, we accept the null hypothesis and thus it can be assumed that the variances are equal and we would use the middle row of the output. Assuming equal variances, the *t* value is 1.029. There are 108 degrees of freedom. The two-tailed *p* value associated with the test is 0.306. As by, the decision rule, If $p \leq \alpha$, then reject H_0 . Here, 0.306 is more than to 0.05, so we accept H_0 . That implies that we do not observe a difference in the mean number of the two groups.

Thus, *t* test revealed statistically no difference between the mean number of two groups, where group 1 has ($M = 30.91, s = 7.640$) and group 2 has ($M = 32.51, s = 8.642$), $t(108) = 1.029, p = 0.306, \alpha = 0.05$ as given in Table 5.

4. Result

Tables 7,8 and 9 show the results of Age wise, Gender wise and Work experience wise results obtained from the analysis of data.

5. Recommendations

There is a strong need for improvement in the following areas:

Parameters	Result
Selection Process	t test revealed statistically no difference between the mean number of two groups
Academic Excellence	
Infrastructure	
Personality Development and Industry Exposure	
Management and Administration	

Table 9. Showing results of *t* test work experience wise

a) Course Curriculum

It is quiet essential to improve the curriculum in a way to make it applied and realistic. Syllabi should be revised & updated regularly. The research orientation in curriculum is required. The content of the curriculum should be such that there is similarity between the rationality that is taught in the classroom and the ground reality, which a student has to actually face.

b) Faculty Development

Faculty members are crucial in the quality management. It is a stupendous task to meet the faculty needs of the rapidly expanding management institution system. There is an acute shortage of high quality management teachers, particularly in the functional areas. Faculty selection should be made on merit only and compromises should not be made in the selection process. Full time permanent faculty should be encouraged, so that they can devote full-time for the organization.

c) Development of teaching materials and case studies

Very few institutions in the country have been able to develop adequate teaching material including case in terms of Indian ethics in education. So there is a need to venture widespread educational Institute research including case research and publications indigenously.

d) Placement

The provision of placement is an activity which is reducing the identity of educational institutions as a place of academic pursuit. Institutes should take shape of the agency in seeking the employment opportunity. It should create opportunity for students for getting exposed to the Job markets. It should facilitate in sensitizing the student to be down to earth to know where he/she stands. So, placement should be de-linked from academic institutions in the sense, that placement cell should not be treated as an employment bureau.

e) Pedagogy

Now it is the need that pedagogy should be more learner centered, and have more case input than lecture method. Workshops should develop deep thinking on the

subject; more exposure to realities of industries and work environment, project methods should be cased to promote discovery learning, with more emphasis on simulation, role playing, socio-drama, etc.

f) Values

It is quiet essential to know the aspects of ethics; like how ethics can be developed, how they can be managed at workplace, how individual makes his/her values, what are the contents of ethics which can be utilized to motivate human resources at work place since "organizations are not having ethics only people have." An institute can only enhance existing values/skills, but can't create them.

g) Governance

The governance of institutions should be transparent. There should only be one body with norms specified for accreditation or ranking institutes. Government bodies should not interfere with ranking regulations or, in case of the curriculum, lay down the broad outlines. It should be mandatory for all the institutes to comply with the criteria, but they should still have autonomy in fields like the selection of students, faculty and up-gradation of courses etc.

Conclusions

For "Selection Process", "Academic Excellence", "Infrastructure", "Personality Development and Industry Exposure" and "Management and Administration" t test revealed statistically no difference between the mean number of two groups as shown in Tables 7,8 and 9. Thus it can be inferred that the two samples (age wise) have same perceptions with respect to the above parameters. It can be inferred that the faculty members' perceptions about the "Selection Process", "Academic Excellence", "Infrastructure", "Personality Development and Industry Exposure" and "Management and Administration", does not change with their age in the affiliated undergraduate engineering institution in Haryana.

For "Selection Process", "Infrastructure", "Personality Development and Industry Exposure" and "Management and Administration" t test revealed statistically no difference between the mean number of two groups. Thus it can be inferred that the samples (gender wise)

have same perceptions with respect to the parameters. It can be inferred that the faculty members' perceptions about the "Selection Process", "Infrastructure", "Personality Development and Industry Exposure" and "Management and Administration", does not change with their gender in the affiliated undergraduate engineering institution in Haryana. While for "Academic Excellence" t test revealed a statistically reliable difference between the mean number of two groups. Thus it can be inferred that the samples (gender wise) have different perceptions with respect to the above parameter. It can be inferred that the faculty members' perceptions about "Academic Excellence", does change with their gender in the affiliated undergraduate engineering institution in Haryana.

For "Selection Process", "Academic Excellence", "Infrastructure", "Personality Development and Industry Exposure" and "Management and Administration" t test revealed statistically no difference between the mean number of two groups. Thus it can be inferred that the samples (work-experience wise) have same perceptions with respect to the above parameters. It can be inferred that the faculty members' perceptions about the "Selection Process", "Academic Excellence", "Infrastructure", "Personality Development and Industry Exposure" and "Management and Administration", does not change with their work-experience in the affiliated undergraduate engineering institution in Haryana.

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