Faculty perspective (age wise, gender wise and work experience wise) of parameters affecting the undergraduate engineering education: A live study

Ms. Neeraj Kumari (Research Scholar, MRIU) (Corresponding author)
Assistant Professor (Humanities & Management)
FET, Manav Rachna International University, Faridabad, India. Email: neerajnarwat@gmail.com
Complete mailing address: H. No. 2769 GF, Sector -16, Faridabad, Haryana -121002, India
Dr. Vinod Kumar Mahna
Dean Academics, Manav Rachna International University
Dr. Ruchi Malhotra
Assosciate Professor, DAV Institute of Management, Faridabad

Abstract

The objective of the study is to examine the faculty perspective (age wise, gender wise and work experience wise) of parameters affecting the undergraduate engineering education system present in a private technical institution in NCR, Haryana. 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 180 comprising of the faculty respondents. The sample has been taken on the random (Probability) basis and the questionnaire was filled by the faculty (teaching B.Tech students) chosen on the random basis from a private technical educational institution in NCR, 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. To conclude the *t* test revealed a statistically reliable difference between the mean of two groups (age wise) for the parameter "Selection". While *t* test revealed statistically no difference between the mean number of two groups (age wise) for the parameters "Academic Excellence", "Infrastructure", "Personality Development and Industry Exposure", and "Management and Administration". The *t* test revealed statistically no difference between the mean number of two groups (gender wise) for the parameters "Selection", "Academic Excellence", "Infrastructure", "Personality Development and Industry Exposure", and "Management and Administration". The *t* test revealed a statistically reliable difference between the mean number of two groups (work experience wise) for the parameters "Selection", "Academic Excellence", "Infrastructure" and "Management and Administration". While *t* test revealed statistically no difference between the mean number of two groups (work experience wise) for the parameter "Personality Development and Industry Exposure".

Keywords: competition, private technical, technical education, quality of life, quality education.

INTRODUCTION

Today, the higher education system as a whole is faced with many issues of concern like financing and management, including access, equity, relevance and reorientation of program by laying emphasis on values, ethics and quality of higher education together with the assessment of institutions and their accreditation. These issues are of vital importance for the country, as it is engaged in the use of higher education as a powerful tool to build knowledge based society of the 21st century.

Recognizing this requirement as also the basic

fact that the institutions of higher learning have to perform multiple roles like creating new knowledge, acquiring new capabilities, producing intelligent human resource pool, Indian Higher Education system has to address itself to global challenges through channelizing teaching, research and extension activities , and maintaining the right balance between the need and the demand.

Higher education needs to be viewed as a long-term social investment for the promotion of economic growth, cultural development, social cohesion, equity and justice. In order to meet the 12th Plan aim of inclusive growth and to ensure genuine endogenous and sustainable development along with social justice and equity the higher education sector has to play a pivotal role, especially in generating research-based knowledge and developing a critical mass of skilled and educated personnel. Within this philosophical paradigm some of the issues pertaining to the higher education system have been identified, that need to be seriously addressed for the balanced development of higher education in India.

The globalized era has necessitated inculcation of competitiveness. This can be achieved only by bringing quality of highest standards in every sphere of work. Therefore, the quality of higher education has become a major concern as of today. Needs and expectations of the society are changing very fast and the quality of higher education needs to be sustained at the desired level. Quality would mainly depend on the quality of all its facets, be it the Faculty, Staff, Students, Infrastructure, etc. As such, all the policies, systems and processes should be clearly directed towards attaining improvements in all the relevant facets for the overall rise in the quality of education.

LITERATURE REVIEW

Dr. Reena M. Tak (2013) the objective of the study was to help educators, researchers, and policymakers to establish more reasonable ICT integration practices so as to make education process to keep pace with the technological development .The tools used in the study were non experimental survey and the study on the use of ICT in higher education in India. The sample included faculties of different departments from an engineering college at Khargone district (M.P.), India. A total of about 50 faculty members were included in the survey. The 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.

Dr. Amarja Satish Nargunde (2013) the objectives of the study were as follows: to study the number of job switches and to find out the reasons for job switching by teachers. The research was carried on keeping scope of the study to the region of Western Maharashtra and to the 2 Districts in it i.e. Kolhapur & Sangli. The study concluded that the frequent job hopping by teachers can not only hamper the overall working of the institutes but also the learning process of the students and students can be deprived of real good knowledge if a dedicated and genuinely good teacher decides to leave the institute on account of frustration and complete apathy of management towards his good performance. It was found that almost 52% of teachers have worked in different

organizations before joining the current organization. The more seriousness can be found in the fact that migration has taken from one organization to other in teaching profession only. Almost 75% of teachers do not want to change their current profession of teaching. However alarm bells are ringing for the institutions that almost 40% which is quite a sizable in number; like to change their current institute of work. It can only be on account of the poor experience they must be getting in their current institution. Time and again in different questions, the factor of "Additional Activities apart from Teaching" has found to be one of the significant factors affecting teachers negatively. In the same research conducted teachers have replied positively on payment satisfaction. So mere the extra compensation cannot be the reason for the teacher turnover. Aspects like working conditions, career opportunities, and performance – reward relation should be improved by the management of the institutes.

Datir R. K. (2012) the objectives of the study were as follows: to explain the concept and importance of HRD in economic development, to study the role of education in HRD, and to study the importance of skill training in HRD. The author has used the descriptive method as well as analytical, based on analysis of secondary data. The study concluded that public expenditure on education in India is most inadequate. The expansion of higher education has been completely unplanned, unwieldy and chaotic. There is imbalance and distortions in the area of technical education in India. The development of all levels of education in India was quantitative rather than qualitative.

V. Viji (2012) the objectives of the study were as follows: To know the enrolment rate of higher education and to find out the dropout rates in schools. This was an evaluative study which was based on the secondary sources of data. The 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.

Nandkumar Laxman Kadam (2012) the objective of the study was to study the growth and development of higher education in India. The study was based on the secondary data collected from various libraries. The study concluded that in the last decade, the growth rate of the institutions has increased. But due to increase in enrolment and GER, the present number of institutions of higher education is not sufficient to accommodate all the students conveniently and suitably. The higher education system still further is to be expanded rapidly, so that, it will reach to the last student. Provision of adequate number of higher educational institutions comes before the quality of the higher education. The quality of higher education is, no doubt, important but, it is prime important that, at least sufficient number of higher educational institutions should be made available to accommodate increasing demand for access to higher education.

Praveen Jha Siba Sankar Mohanty (2008) the study emphasis that the strong linkages between educational attainments of the population and economic growth of the country, large positive externalities associated with expansion of education, wide recognition of its public good character, and the particular historical context of the developing countries, have made public policy towards education one of the most critical areas of governance in modern times. The author has used the descriptive method as well as analytical, based on the analysis of secondary data. The study

concluded that up-gradation of the production process requires an effective and affordable higher education system for the masses and not just for a few privileged ones. At the same time, it is also essential that the government put equal emphasis on universalizing primary and secondary education.

R.V.G. Menon (2008) the study emphasis that even before the official onset of globalization in India, the field of technical education had already been marketized. The author has used the descriptive method as well as analytical, based on the analysis of secondary data. The study concluded that the market, which goes only by capacity utilization and returns on capital, does not recognize the human costs. The pass percentage in engineering, which used to be around 90, has now fallen below 60. In Tamil Nadu, it was reported, that there were several colleges, where none passed the final exams! Only about 5 colleges had more than 50% pass. The situation in Kerala is not very different. CUSAT announced recently that in their Final Year Engineering Examinations, only 28% of the students had passed. This means that hundreds of thousands of students from every batch fail to pass the engineering course, at the end of four years.

Dr Rajiv Tiwari (2005) the study reviews the engineering education, with particular emphasis on degree level courses, in north east (NE) India. A comparison has been made of the NE zone with the rest of zones in the country in terms of number of engineering colleges and their yearly intake. The author has used the descriptive method as well as analytical, based on analysis of secondary data. The study concluded that in the entire NE mostly the state run engineering colleges are in existence. The number of engineering colleges and yearly intake of students as compared to other zone is very less. However, some suggestions for up-gradation of existing state Engineering Institutions in NE can be thought off and implementation of the same may be made to improve the quality of EE and its effectiveness to benefit the society.

K.G. Viswanadhan (2005) the study discusses the AHP technique, research problem, development of questionnaires, and the AHP method used for the final selection of the measuring instrument. The objective of the study is to collect primary data from the faculty of engineering colleges and use this information to prioritize the quality issues of undergraduate engineering education in India. Five types of questionnaires were developed for collecting the pair wise comparison of 'quality issues of engineering education'. Three criteria were considered while designing the questionnaire. They are easiness to fill up the questionnaire, clarity of questions and extraction of intended responses. The Analytic Hierarchy Process (AHP) is selected as the method of decision process. A pilot study (questionnaire administration) has been conducted among five faculties with entirely different backgrounds and their responses are analyzed for consistency. The study concluded that AHP, which is a transparent technique, is very useful to handle this type of situations where qualitative data is involved in the decision-making. The use of AHP does not involve cumbersome mathematics. AHP involves the principles of decomposition, pair wise comparisons, and priority vector generation and synthesis.

RESEARCH METHODOLOGY

Objective of the study: The objective of the study is to examine the faculty perspective (age wise, gender wise and work experience wise) of parameters affecting the undergraduate

engineering education system present in a private technical institution in NCR, Haryana.

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 180 comprising of the faculty respondents. The sample has been taken on the random (Probability) basis and the questionnaire was filled by the faculty (teaching B.Tech students) chosen on the random basis from a private technical educational institution in NCR, Haryana.

Database collection: The primary data was collected with the help of questionnaire and personal interview method from the private technical institute chosen randomly. And the secondary data was gathered through the study of studies and research work carried out in the past.

Scope of the study: The area for the study is National Capital Region (NCR) and the institution to be studied is a private technical educational institution in NCR. The respondents are the faculty teaching B.Tech students who were selected randomly from the above said geographical area.

Statistical tools to be used: 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.

DATA ANALYSIS AND INTERPRETATIONS

Applying T test on the sample

Table 1: Showing the group statistics with reference to "age" of the sample.

Group Statistics

	Age	N	Mean	Std. Deviation	Std. Error Mean
Selection	up to 30 years	119	5.45	1.840	.169
	Above 30 years	61	6.23	2.179	.279
Academic Excellence	up to 30 years	119	45.20	9.618	.882
	Above 30 years	61	47.56	9.284	1.189
Infrastructure	up to 30 years	119	22.77	5.143	.471
	Above 30 years	61	23.54	5.236	.670
Personality Development And Industry Exposure	up to 30 years	119	20.78	5.276	.484
	Above 30 years	61	20.82	4.459	.571
Management & Administration	up to 30 years	119	31.52	9.413	.863
	Above 30 years	61	34.20	9.368	1.199

INTERPRETATIONS: The table gives the descriptive statistics for each of the two groups (as defined by the grouping variable). The last column gives the standard error of the mean for each of the two groups.

1. Selection: There are 119 respondents in the group 1 having up to 30 years of age, and they have a mean of 5.45, with a standard deviation of 1.840. There are 61 respondents in the group 2 having above 30 years of age, and they have a mean of 6.23, with a standard deviation of 2.179.
2. Academic Excellence: There are 119 respondents in the group 1 having up to 30 years of age, and they have a mean of 45.20, with a standard deviation of 9.618. There are 61 respondents in the group 2 having above 30 years of age, and they have a mean of 47.56, with a standard deviation of 9.284.
3. Infrastructure: There are 119 respondents in the group 1 having up to 30 years of age, and they have a mean of 22.77, with a standard deviation of 5.143. There are 61 respondents in the group 2 having above 30 years of age, and they have a mean of 23.54, with a

standard deviation of 5.236.

4. Personality Development and Industry Exposure: There are 119 respondents in the group 1 having up to 30 years of age, and they have a mean of 20.78, with a standard deviation of 5.276. There are 61 respondents in the group 2 having above 30 years of age, and they have a mean of 20.82, with a standard deviation of 4.459.
5. Management and Administration: There are 119 respondents in the group 1 having up to 30 years of age, and they have a mean of 31.52, with a standard deviation of 9.413. There are 61 respondents in the group 2 having above 30 years of age, and they have a mean of 34.20, with a standard deviation of 9.368.

Table 2: Showing the independent samples test with reference to "age" of the sample.

		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	.526	.469	-2.540	178	.012	-.784	.309	-1.393	-.175
	Equal variances not assumed			-2.406	104.764	.018	-.784	.326	-1.430	-.138
Academic Excellence	Equal variances assumed	.156	.694	-1.574	178	.117	-2.356	1.497	-5.310	.598
	Equal variances not assumed			-1.592	124.951	.114	-2.356	1.480	-5.285	.573
Infrastructure	Equal variances assumed	.000	.994	-.942	178	.347	-.768	.815	-2.376	.840

	Equal variances not assumed			-.937	119.187	.351	-.768	.820	-2.391	.855
Personality Development And Industry Exposure	Equal variances assumed	.834	.362	-.048	178	.962	-.038	.790	-1.597	1.520
	Equal variances not assumed			-.051	140.274	.959	-.038	.748	-1.517	1.441
Management And Administration	Equal variances assumed	.011	.915	-1.808	178	.072	-2.676	1.480	-5.596	.245
	Equal variances not assumed			-1.811	121.614	.073	-2.676	1.478	-5.601	.249

INTERPRETATIONS:

Following are the null and alternative hypotheses:

H_o: μ of group 1 = μ of group 2

H_a: μ of group 1 ≠ μ of group 2

Where μ is the mean number of group

1. Selection: The inferential statistics gives the significance (p value) of Levene's test which is 0.469. As 0.469 is larger than α (usually 0.05), 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 2.540. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.012. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.012 is less than to .05, so we can reject H_o. That implies that we observe a difference in the mean number of the two groups.

Thus, *t* test revealed a statistically reliable difference between the mean number of two groups, where group 1 has (M = 5.45, s = 1.840) and the group 2 has (M = 6.23, s = 2.179), $t(178) = 2.540$, $p = 0.012$, $\alpha = 0.05$.

2. Academic Excellence: The inferential statistics gives the significance (p value) of Levene's test which is 0.694. As 0.694 is larger than α (usually 0.05), 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 1.574. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.117. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.117 is not less than to 0.05, so we fail to reject H_o. 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 = 45.20, s = 9.618) and the group 2 has (M = 47.56, s = 9.284), $t(178) = 1.574$, $p = 0.117$, $\alpha = 0.05$.

3. Infrastructure: The inferential statistics gives the significance (p value) of Levene's test which is 0.994. As 0.994 is larger than α (usually 0.05), 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 0.942. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.347. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.347 is not less than to 0.05, so we can not reject H_o. 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 = 22.77, s = 5.143) and the group 2 has (M = 23.54, s = 5.236), $t(178) = 0.942$, $p = 0.347$, $\alpha = 0.05$.

4. Personality Development and Industry Exposure: The inferential statistics gives the significance (p value) of Levene's test which is 0.362. As 0.362 is larger than α (usually 0.05), 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 0.048. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.962. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.962 is not less than to 0.05, so we can not reject H_o. 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 = 20.78, s = 5.276) and the group 2 has (M = 20.82, s = 4.459), $t(178) = 0.048$, $p = 0.962$, $\alpha = 0.05$.

5. Management and Administration: The inferential statistics gives the significance (p value) of Levene's test which is 0.915. As 0.915 is larger than α (usually 0.05), 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 1.808. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.072. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.072 is not less than to 0.05, so we can not reject H_o. 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 = 31.52, s = 9.413) and the group 2 has (M = 34.20, s = 9.368), $t(178) = 1.808$, $p = 0.072$, $\alpha = 0.05$.

Table 3: Showing the group statistics with reference to "gender" of the sample.

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Selection	Male	75	5.75	2.400	.277
	Female	105	5.69	1.649	.161
Academic Excellence	Male	75	47.44	9.662	1.116
	Female	105	44.97	9.372	.915
Infrastructure	Male	75	23.04	5.510	.636
	Female	105	23.03	4.945	.483
Personality Development And Industry Exposure	Male	75	20.95	4.615	.533
	Female	105	20.69	5.279	.515
Management And Administration	Male	75	32.61	10.497	1.212
	Female	105	32.30	8.689	.848

INTERPRETATIONS: The table gives the descriptive statistics for each of the two groups (as defined by the grouping variable). The last column gives the standard error of the mean for each of the two groups.

1. Selection: There are 75 respondents in the group 1 comprising of male respondents, and they have a mean of 5.75, with a standard deviation of 2.400. There are 105 respondents in the group 2 comprising of female respondents, and they have a mean of 5.69, with a standard deviation of 1.649.
2. Academic Excellence: There are 75 respondents in the group 1 comprising of male respondents, and they have a mean of 47.44, with a standard deviation of 9.662. There are 105 respondents in the group 2 comprising of female respondents, and they have a mean of 44.97, with a standard deviation of 9.372.
3. Infrastructure: There are 75 respondents in the group 1 comprising of male respondents, and they have a mean of 23.04, with a standard deviation of 5.510. There are 105 respondents in the group 2 comprising of female respondents, and they have a mean of 23.03, with a standard deviation of 4.945.
4. Personality Development and Industry Exposure: There are 75 respondents in the group 1 comprising of male respondents, and they have a mean of 20.95, with a standard deviation of 4.615. There are 105 respondents in the group 2 comprising of female respondents, and they have a mean of 20.69, with a standard deviation of 5.279.
5. Management and Administration: There are 75 respondents in the group 1 comprising of male respondents, and they have a mean of 32.61, with a standard deviation of 10.497. There are 105 respondents in the group 2 comprising of female respondents, and they have a mean of 32.30, with a standard deviation of 8.689.

Table 4: Showing the independent samples test with reference to "gender" of the sample.

Independent Samples Test

		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	9.573	.002	.202	178	.840	.061	.302	-.534	.656

	Equal variances not assumed			.190	122.396	.849	.061	.320	-.573	.695
Academic Excellence	Equal variances assumed	.023	.880	1.720	178	.087	2.469	1.435	-.364	5.301
	Equal variances not assumed			1.711	156.568	.089	2.469	1.443	-.381	5.318
Infrastructure	Equal variances assumed	1.579	.211	.015	178	.988	.011	.784	-1.536	1.559
	Equal variances not assumed			.014	148.625	.989	.011	.799	-1.567	1.589
Personality Development And Industry Exposure	Equal variances assumed	1.968	.162	.344	178	.731	.261	.758	-1.235	1.757
	Equal variances not assumed			.352	170.813	.725	.261	.741	-1.202	1.724
Management And Administration	Equal variances assumed	3.695	.056	.222	178	.825	.318	1.434	-2.511	3.147
	Equal variances not assumed			.215	140.255	.830	.318	1.479	-2.606	3.243

INTERPRETATIONS: Following are the null and alternative hypotheses:

H_o: μ of group 1 = μ of group 2

H_a: μ of group 1 ≠ μ of group 2

Where μ is the mean number of group

1. Selection: The inferential statistics gives the significance (p value) of Levene's test which is 0.002. As 0.002 is less than α (usually 0.05), we reject the null hypothesis and thus it can be assumed that the variances are unequal and we would use the last row of the output. Assuming unequal variances, the t value is 0.190. There are 122 degrees of freedom. The two-tailed p value associated with the test 0.849. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.849 is more than to 0.05, so we accept H_o. 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 = 5.75, s = 2.400) and the group 2 has (M = 5.69, s = 1.649), $t(122) = 0.190$, $p = 0.849$, $\alpha = 0.05$.

2. Academic Excellence: The inferential statistics gives the significance (p value) of Levene's test which is 0.880. As 0.880 is larger than α (usually 0.05), 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 1.720. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.087. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.087 is more than to 0.05, so we accept H_o. 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 = 47.44, s = 9.662) and the group 2 has (M = 44.97, s = 9.372), $t(178) = 1.720$, $p = 0.087$, $\alpha = 0.05$.

3. Infrastructure: The inferential statistics gives the significance (p value) of Levene's test which is 0.211. As 0.211 is larger than α (usually 0.05), 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 0.015. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.988. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.988 is more than to 0.05, so we accept H_o. 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 = 23.04, s = 5.510) and the group 2 has (M = 23.03, s = 4.945), $t(178) = 0.015$, $p = 0.988$, $\alpha = 0.05$.

4. Personality Development and Industry Exposure: The inferential statistics gives the significance (p value) of Levene's test which is 0.162. As 0.162 is larger than α (usually 0.05), 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 0.344. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.731. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.731 is more than to 0.05, so we accept H_o. 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 = 20.95, s = 4.615) and the group 2 has (M = 20.69, s = 5.279), $t(178) = 0.344$, $p = 0.731$, $\alpha = 0.05$.

5. Management and Administration: The inferential statistics gives the significance (p value) of Levene's test which is 0.056. As 0.056 is larger than α (usually 0.05), 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 0.222. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.825. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.825 is more than to 0.05, so we accept H_o. 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 = 32.61, s = 10.497) and the group 2 has (M = 32.30, s = 8.689), t (178) = 0.222, p = 0.825, α = 0.05.

Table 5: Showing the group statistics with reference to "work experience" of the sample.

Group Statistics

	Work Experience	N	Mean	Std. Deviation	Std. Error Mean
Selection	0 to 5 years	102	5.27	1.819	.180
	More than 5 years	78	6.28	2.070	.234
Academic Excellence	0 to 5 years	102	44.38	9.164	.907
	More than 5 years	78	48.12	9.678	1.096
Infrastructure	0 to 5 years	102	22.08	5.143	.509
	More than 5 years	78	24.28	4.972	.563
Personality Development And Industry Exposure	0 to 5 years	102	20.28	4.857	.481
	More than 5 years	78	21.46	5.139	.582
Management And Administration	0 to 5 years	102	30.40	9.196	.911
	More than 5 years	78	35.08	9.190	1.041

INTERPRETATIONS: The table gives the descriptive statistics for each of the two groups (as defined by the grouping variable). The last column gives the standard error of the mean for each of the two groups.

1. Selection: There are 102 respondents in the group 1 having up to five years of work experience, and they have a mean of 5.27, with a standard deviation of 1.819. There are 78 respondents in the group 2 having more than five years of work experience, and they have a mean of 6.28, with a standard deviation of 2.070.
2. Academic Excellence: There are 102 respondents in the group 1 having up to five years of work experience, and they have a mean of 44.38, with a standard deviation of 9.164. There are 78 respondents in the group 2 having more than five years of work experience, and they have a mean of 48.12, with a standard deviation of 9.678.
3. Infrastructure: There are 102 respondents in the group 1 having up to five years of work experience, and they have a mean of 22.08, with a standard deviation of 5.143. There are 78 respondents in the group 2 having more than five years of work experience, and they have a mean of 24.28, with a standard deviation of 4.972.
4. Personality Development and Industry Exposure: There are 102 respondents in the group 1 having up to five years of work experience, and they have a mean of 20.28, with a standard deviation of 4.857. There are 78 respondents in the group 2 having more than five years of work experience, and they have a mean of 21.46, with a standard deviation of 5.139.
5. Management and Administration: There are 102 respondents in the group 1 having up to five years of work experience, and they have a mean of 30.40, with a standard deviation of 9.196. There are 78 respondents in the group 2 having more than five years of work experience, and they have a mean of 35.08, with a standard deviation of 9.190.

Table 6: Showing the independent samples test with reference to "work experience" of the sample.

Independent Samples Test

		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	.705	.402	-3.468	178	.001	-1.008	.291	-1.581	-.434
	Equal variances not assumed			-3.409	153.920	.001	-1.008	.296	-1.591	-.424
Academic Excellence	Equal variances assumed	3.420	.066	-2.643	178	.009	-3.733	1.412	-6.520	-.946
	Equal variances not assumed			-2.624	161.064	.010	-3.733	1.423	-6.543	-.923
Infrastructure	Equal variances assumed	.973	.325	-2.890	178	.004	-2.204	.763	-3.708	-.699
	Equal variances not assumed			-2.903	168.528	.004	-2.204	.759	-3.702	-.705
Personality Development And Industry Exposure	Equal variances assumed	1.198	.275	-1.571	178	.118	-1.177	.749	-2.656	.301
	Equal variances not assumed			-1.559	160.896	.121	-1.177	.755	-2.668	.314
Management And Administration	Equal variances assumed	.039	.843	-3.381	178	.001	-4.675	1.383	-7.404	-1.946
	Equal variances not assumed			-3.381	165.900	.001	-4.675	1.383	-7.405	-1.945

INTERPRETATIONS: Following are the null and alternative hypotheses:

H_o: μ of group 1 = μ of group 2

H_a: μ of group 1 ≠ μ of group 2

Where μ is the mean number of group

1. Selection: The inferential statistics gives the significance (p value) of Levene's test which is 0.402. As 0.402 is larger than α (usually 0.05), 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 3.468. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.001. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.001 is less than to 0.05, so we can reject H_o. That implies that we observe a difference in the mean number of the two groups.

Thus, *t* test revealed a statistically reliable difference between the mean number of two groups, where group 1 has (M = 5.27, s = 1.819) and the group 2 has (M = 6.28, s = 2.070), $t(178) = 3.468, p = 0.001, \alpha = 0.05$.

2. Academic Excellence: The inferential statistics gives the significance (p value) of Levene's test which is 0.066. As 0.066 is larger than α (usually 0.05), 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 2.643. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.009. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.009 is less than to .05, so we can reject H_o. That implies that we observe a difference in the mean number of the two groups.

Thus, *t* test revealed a statistically reliable difference between the mean number of two groups, where group 1 has (M = 44.38, s = 9.614) and the group 2 has (M = 48.12, s = 9.678), $t(178) = 2.643, p = 0.009, \alpha = 0.05$.

3. Infrastructure: The inferential statistics gives the significance (p value) of Levene's test which is 0.325. As 0.325 is larger than α (usually 0.05), 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 2.890. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.004. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.004 is less than to 0.05, so we can reject H_o. That implies that we observe a difference in the mean number of the two groups.

Thus, *t* test revealed a statistically reliable difference between the mean number of two groups, where group 1 has (M = 22.08, s = 5.143) and the group 2 has (M = 24.28, s = 4.972), $t(178) = 2.890, p = 0.004, \alpha = 0.05$.

4. Personality Development and Industry Exposure: The inferential statistics gives the significance (p value) of Levene's test which is 0.275. As 0.275 is larger than α (usually 0.05), 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 1.571. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.118. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_o. Here, 0.118 is more than to 0.05, so we accept H_o. 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 = 20.28, s = 4.857) and the group 2 has (M = 21.46, s = 5.139), $t(178) = 1.571, p = 0.118, \alpha = 0.05$.

5. Management and Administration: The inferential statistics gives the significance (p value) of Levene's test which is 0.843. As 0.843 is larger than α (usually 0.05), 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 3.381. There are 178 degrees of freedom. The two-tailed p value associated with the test 0.001. As before, the decision rule is given by: If $p \leq \alpha$, then reject H_0. Here, 0.001 is less than to 0.05, so we can reject H_0. That implies that we observe a difference in the mean number of the two groups.

Thus, *t* test revealed a statistically reliable difference between the mean number of two groups, where group 1 has (M = 30.40, s = 9.196) and the group 2 has (M = 35.08, s = 9.190), $t(178) = 3.381, p = 0.001, \alpha = 0.05$.

CONCLUSIONS

There are 119 respondents in the group 1 having up to 30 years of age while there are 61 respondents in the group 2 having above 30 years of age. The *t* test revealed a statistically reliable difference between the mean number of two groups (age wise) for the parameter "Selection". While *t* test revealed statistically no difference between the mean number of two groups (age wise) for the parameters "Academic Excellence", "Infrastructure", "Personality Development and Industry Exposure", and "Management and Administration".

There are 75 respondents in the group 1 comprising of male respondents while there are 105 respondents in the group 2 comprising of female respondents. The *t* test revealed statistically no difference between the mean number of two groups (gender wise) for the parameters "Selection", "Academic Excellence", "Infrastructure", "Personality Development and Industry Exposure", and "Management and Administration".

There are 102 respondents in the group 1 having up to five years of work experience while there are 78 respondents in the group 2 having more than five years of work experience. The *t* test revealed a statistically reliable difference between the mean number of two groups (work experience wise) for the parameters "Selection", "Academic Excellence", "Infrastructure" and "Management and Administration". While *t* test revealed statistically no difference between the mean number of two groups (work experience wise) for the parameter "Personality Development and Industry Exposure".

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