A case study of an affiliated undergraduate engineering institution showing faculty perspective (qualifications wise) of parameters affecting the quality of education

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The objective of the study is to examine the faculty members’ perspective (qualification wise) of parameters affecting the quality of education in an affiliated undergraduate engineering institution in 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 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. 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 faculty members’ perceptions about the “Selection Process”, “Academic Excellence”, “Infrastructure”, “Personality Development and Industry Exposure” and “Management and Administration”, does not change according to their level of qualification in the affiliated undergraduate engineering institution in Haryana.

Keywords: Administration, Development, Infrastructure, Management, selection.

INTRODUCTION

Quality in Higher Education

Quality education is a package which means (a) conforming to comparable standards with innovative approach (b) fulfilling the academic intellectual requirements with optimal degree of excellence (c) adequate capability to consistently cope with the demands of the world of work and scope for employability (d) development of innate qualities to optimum level (e) satisfying the stake holders as per social expectation.

To ensure quality every institution should have a road map of its own. This road map must contain vision and mission statement, quality of policy details, and programmes of action supported by constant review and monitoring. To ensure quality every higher education institution should have sufficient infrastructure, learning resources, academic environment, competent dedicated teaching faculties with due, status, need based curriculum design and planning with diversity and flexibility. There must also be provision of appropriate teaching learning experience, use of technology and provision of facilities to promote research or extension related activities. Higher education will become both repository and creator of knowledge. It will become the driving force of economic development and local point at learning in the society. Due to liberalization and privatization in education sector the nonqualified institution will automatically die down. University no longer will have the monopoly of higher learning. National system of higher education will become varied and complex. Besides, a large number of satellite institutions will come up to supplement the needs for higher education.
A modern definition of quality derives from Juran’s "fitness for intended use." This definition basically says that quality is "meeting or exceeding customer expectations." Quality is very specific; it involves continuous improvement; it can be achieved by prevention; it implies zero defects or errors; it includes correction of errors. Quality in the context of higher education can be defined as judgment about the level of goal achievement and the value and worth of that achievement. It is also a judgment about the degree to which activities or outputs have desirable characteristics, according to some norm or against particular specified criteria or objectives. A standard might simply be defined as ‘a set of rules for ensuring quality’.

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.

LITERATURE REVIEW

Sundareswari (2013) the study emphasis that library functions 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 author has used the descriptive method as well as analytical, based on the analysis of secondary data. 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.

Tak (2013) 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.

Faisal (2013) the study focuses on developing and assessing speaking skills in a graded manner at the tertiary level to enhance communicative competence. The author has used the descriptive method as well as analytical, based on analysis of secondary data. 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.

Harish (2005) the study emphasis that the Continuing Education is very much essential for the modern society. Due to development of new techniques and changes in technology make everybody 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. The study concluded that Continuing 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).

Raja et al (2005) the study brings out the commonality and difference between the quality in various models and the key ideas are extracted to modulate the framework of service quality in higher education service. The conceptual models of different sectors had been re-conceptualized and the model was reported. The study concluded that the proposed model presented in the investigation provides the consolidated facts expressed within the available literature. It presents a distinctive conceptualization of service quality. It is an attempt to integrate the various models from the available services literature in the context of higher education services.

Venkataram et al (2005) the results demonstrates that we can have the technical education institution assessment and improvement system on day-today basis and provide the system for improvement aid in future planning of technical education in the state and in the country. The system also enables planning of new curriculum/research programs since it provides strengths and capabilities of every institution in that particular thrust areas.

Kumar and Amritpal (2005) the study demonstrates and elaborates the various aspects of Internet use, most frequently used place for Internet use, purposes for which the Internet is used, use of Internet services, ways to browse the information from the Internet, problems faced by the users and satisfaction level of users with the Internet
facilities provided in the colleges. Data has been collected with the help of questionnaire method. Respondents have been selected with the help of random sampling. Total population consisted of 32 engineering colleges of Punjab (including Chandigarh). Total questionnaire received back duly filled in were 808. Analysis has been done with the help of frequency distribution of the data. The study concluded that in order to make the Internet more beneficial, the library stuff who have acquired a good deal of efficiency in the collection, organization and retrieval of information should feel duty-bound to see that the users are able to obtain right information at the right time.

RESEARCH METHODOLOGY

Objective of the study: The objective of the study is to examine the faculty members’ perspective (qualification wise) of parameters affecting the quality of education in an affiliated undergraduate engineering institution in 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 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.

Database collection: The primary data was collected with the help of questionnaire and personal interview method from the affiliated 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 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.

Statistical tools to be used: For data analysis and conclusion of the results of the survey, statistical tool like f test was performed with the help of high quality software; SPSS.

DATA ANALYSIS AND INTERPRETATIONS

f test (one way ANOVA) is shown in table 1 above.

Table 1: Showing Descriptive for the faculty members’ sample

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Minimum</th>
<th>Maximum</th>
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<td>.000</td>
<td>18.00</td>
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<td>17.99</td>
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<td>5.040</td>
<td>.506</td>
<td>18.00</td>
<td>20.00</td>
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<tr>
<td>Graduate</td>
<td>3</td>
<td>33.00</td>
<td>.000</td>
<td>.000</td>
<td>33.00</td>
<td>33.00</td>
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<tr>
<td>Post Graduate</td>
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<td>31.95</td>
<td>8.500</td>
<td>.863</td>
<td>30.24</td>
<td>33.66</td>
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<td>4.523</td>
<td>1.430</td>
<td>25.46</td>
<td>31.94</td>
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<td>31.68</td>
<td>8.140</td>
<td>.776</td>
<td>30.14</td>
<td>33.22</td>
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</table>
The p value is 0.550 which is greater than the α level, so we fail to reject H0. That is, there is insufficient evidence to claim that some of the means may be different from each other. Thus, analysis of variance revealed statistically no difference between the mean number of the groups, where $F(2, 107) = 0.222$, $p = 0.801$, $M_{Serror} = 84.961$, $\alpha = 0.05$. The 2 is the between-groups degrees of freedom, 107 is the within-groups degrees of freedom, 0.222 is the F ratio from the F column, 0.801 is the value in the Sig. column (the p value), and 84.961 is the within-groups mean square estimate of variance.

3. **Infrastructure**: The p value is 0.657 which is greater than the α level, so we fail to reject H0. That is, there is insufficient evidence to claim that some of the means may be different from each other. Thus, analysis of variance revealed statistically no difference between the mean number of the groups, where $F(2, 107) = 0.422$, $p = 0.657$, $M_{Serror} = 35.776$, $\alpha = 0.05$. The 2 is the between-groups degrees of freedom, 107 is the within-groups degrees of freedom, 0.422 is the F ratio from the F column, 0.657 is the value in the Sig. column (the p value), and 35.776 is the within-groups mean square estimate of variance.

4. **Personality Development and Industry Exposure**: The p value is 0.855 which is greater than the α level, so we fail to reject H0. That is, there is insufficient evidence to claim that some of the means may be different from each other. Thus, analysis of variance revealed statistically no difference between the mean number of the groups, where $F(2, 107) = 0.156$, $p = 0.855$, $M_{Serror} = 28.552$, $\alpha = 0.05$. The 2 is the between-groups degrees of freedom, 107 is the within-groups degrees of freedom, 0.156 is the F ratio from the F column, 0.855 is the value in the Sig. column (the p value), and 28.552 is the within-groups mean square estimate of variance.

5. **Management and Administration**: The p value is 0.471 which is greater than the α level, so we fail to reject H0. That is, there is insufficient evidence to claim that some of the means may be different from each other. Thus, analysis of variance revealed statistically no difference between the mean number of the groups, where $F(2, 107) = 0.602$, $p = 0.550$, $M_{Serror} = 3.012$, $\alpha = 0.05$. The 2 is the between-groups degrees of freedom, 107 is the within-groups degrees of freedom, 0.550 is the value in the Sig. column (the p value), and 3.012 is the within-groups mean square estimate of variance.
reject H0. That is, there is insufficient evidence to claim that some of the means may be different from each other. Thus, analysis of variance revealed statistically no difference between the mean number of the groups, where $F(2, 107) = 0.759, p = 0.471, M_{\text{Serror}} = 66.550, \alpha = 0.05$. The 2 is the between-groups degrees of freedom, 107 is the within-groups degrees of freedom, 0.759 is the F ratio from the F column, 0.471 is the value in the Sig. column (the p value), and 66.550 is the within-groups mean square estimate of variance.

**INTERPRETATIONS:** The above output is a graph showing the dependent variable (Academic Excellence) on the Y axis and the (quasi) independent variable (Qualification) on the X axis.

![Figure 1](image1.png)

**MEANS PLOTS**

**Figure 1:** Showing graph between “Qualification” and “Selection Process” for the faculty members’ sample

**INTERPRETATIONS:** The final part of the SPSS output is a graph showing the dependent variable (Selection) on the Y axis and the (quasi) independent variable (Qualification) on the X axis.

![Figure 2](image2.png)

**Figure 2:** Showing graph between “Qualification” and “Academic Excellence” for the faculty members’ sample

**INTERPRETATIONS:** The above output is a graph showing the dependent variable (Infrastructure) on the Y axis and the (quasi) independent variable (Qualification) on the X axis.

![Figure 3](image3.png)

**Figure 3:** Showing graph between “Qualification” and “Infrastructure” for the faculty members’ sample

**INTERPRETATIONS:** The above output is a graph showing the dependent variable (Personality Development and Industry Exposure) on the Y axis and the (quasi) independent variable (Qualification) on the X axis.

![Figure 4](image4.png)

**Figure 4:** Showing graph between “Qualification” and “Personality Development and Industry Exposure” for the faculty members’ sample

**INTERPRETATIONS:**
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Figure 5: Showing graph between “Qualification” and “Management and Administration” for the faculty members’ sample

**INTERPRETATIONS:** The above output is a graph showing the dependent variable (Management and Administration) on the Y axis and the (quasi) independent variable (Qualification) on the X axis.

**CONCLUSIONS**

For “Selection Process”, “Academic Excellence”, “Infrastructure”, “Personality Development and Industry Exposure” and “Management and Administration” the analysis of variance revealed statistically no difference between the mean number of the groups i.e. Thus it can be inferred that the two samples (qualification 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 according to their level of qualification in the affiliated undergraduate engineering institution in Haryana.

**REFERENCES**

