

# Quality Management in Private Technical Educational Institutions with a Special Reference to Infrastructure

**Abstract:** *The aim of the study was to measure the effectiveness of infrastructure in private technical educational institutions. This is a descriptive type of research. The data has been collected with the help of a structured questionnaire. The sample size for the study is 85 comprising of the faculty members of a well reputed institute in North Capital Region, Haryana, India. The sampling technique used is random probability sampling. The analysis has been done on Microsoft Excel with the help of graphical representation of data based on the frequency of responses, Correlation and Regression analysis techniques. The institute has a quality infrastructure as it is based on AICTE model to a large extent. The paper concludes that the institute provides all the necessary and sufficient facilities to the faculty members like a well equipped and standardized communication cell, satisfactory recreational facilities, spacious & well furnished faculty / staff rooms, facilities for doing their academic work, well equipped library, hygienic toilets, spacious parking facility, while the institute's Wi-Fi facility needs to be well channelized for the faculty members.*

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**Keywords:** *Education, Infrastructure, Quality, Standards, Technical.*

## 1. INTRODUCTION

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'.

### Key agencies and their role in quality assurance

There are three central government agencies involved in quality assurance for higher education, namely:

- The University Grants Commission (UGC)
- The National Accreditation and Assurance Council (NAAC)
- The Association of Indian Universities (AIU)

The first two of these agencies are central government bodies; the NAAC is a sub-agency of the UGC and both are under the aegis of the Ministry of Human Resource Development. The UGC has a big picture quality control and standards setting mandate. The NAAC has the specific task to work with tertiary institutions on a voluntary basis to undertake self review quality assurance exercises which are then peer reviewed. The AIU was established by the universities in 1924 but did not exist legally until it was registered as a society under the Societies Registration Act in 1967. The AIU acts as an inter-university support and facilitation body by providing evaluation and equivalency assessments of foreign qualifications to Indian Universities.

According to the guidelines given in the approval handbook, AICTE, 2012-2013, there are a number of factors which should be taken care of by any college which is approved by AICTE. We have designed the questionnaire for the study taking into consideration all of these factors with reference to the faculty of the institute. These factors can be grouped in the following categories:

1. Selection process
2. Academic Excellence
3. Infrastructure
4. Personality Development and Industry Exposure
5. Management and Administration

## 2. RESEARCH DESIGN AND METHODOLOGY

**Objective of the study:** To measure the effectiveness of infrastructure in private technical educational institution.

**Hypothesis:** Infrastructure and quality of institutes are positively related

**Sampling and database collection:** The research is a descriptive type of research. The data has been collected with the help of a structured Questionnaire based on Likert scale. The sample size for the study is 85 comprising of the faculty members of a well reputed institute in North Central Region, Haryana, India. The sample has been taken on the random (Probability) basis.

**Statistical tools to be used:** Hypothesis testing, MS Excel, Correlation and Regression analysis.

## 3. REVIEW OF LITERATURE

Satwashila Balaso Khamkar (2013) did the study "Quality enhancement in teaching and learning". The objective of the study was to evolve mechanism through which the teaching and research professions become the most sought after profession of the nation. It was an evaluative study which was based on the secondary sources of the data. The study concluded that the quality of education does not only depend upon the infrastructure, curriculum, its goal, mission, aims and objectives but it largely depends upon the use of creating, shaping human capital into socially responsible, accountable, reliable individuals responsible to the society on the whole.

Graham (2008) & Fan and Zhang (2004), Infrastructure development has also been found, along

with education, to contribute to better regional productivity performance.

Sahney et al. (2007), defined Quality in education from TQM perspective. They believe educational institution as an open system i.e. management system, a technical system and social system. It includes within it the quality of input in the form of students, faculty, supporting staff and infrastructure, the quality of processes in the form of the learning and teaching activity and the quality of outputs include examination results, employment, earning and satisfaction.

Globalization of Engineering Services (2006), a survey of employers shows that only a handful of the 1400 engineering schools in India are recognized as providing world-class education with graduates worthy of consideration for employment. These results suggest that engineering degrees from most Indian colleges do not provide signaling value in the engineering labor market. Hence, low quality (in the labor market sense) engineering schooling has come to predominate in the education market.

Mallesh P. (2005), Quality depends on the institution infrastructure, faculty's research and development activities and industry institution interaction, etc.

Narayan Murthy (2005), the quality of technical and management education is becoming critical in today's world. The last two decades have been influenced by globalization and the effect of globalization is reflected in liberalization of trade and capital markets. Our future will be impacted by forces unleashed by the internet, the mapping of the human genome, the convergence of technologies and deregulation of industries. Thus, the 21<sup>st</sup> century will be primarily shaped by intellectual capital.

**Manual of Accreditation (2004)**, The All India Council for Technical Education (AICTE) was vested with statutory powers by an Act of Parliament in 1987 with the mandate to organize, plan, and administer technical education in the country. Note, however, that the IITs are outside the purview of the AICTE. The AICTE approval process for new institutions or new degree programs is based on several criteria including the credibility of the institutional management and program providers; assurance of compliance to AICTE norms and standards; approval by the state government; and market sensitivity of the program output, so as to avoid the imbalance of supply of qualified manpower.

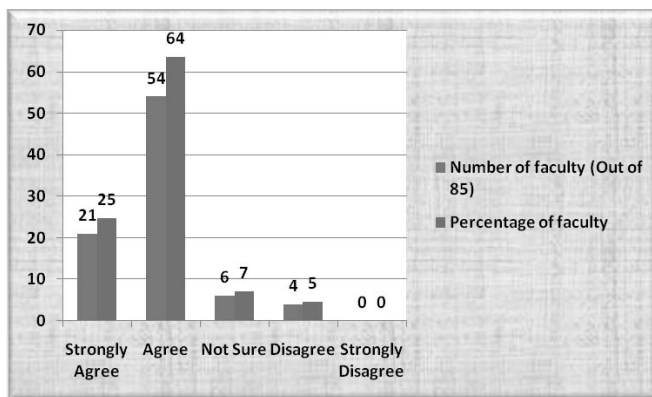
*Manual of Accreditation (2004)*, Beyond AICTE approval, there is a further process of accreditation by the National Board of Accreditation (NBA), which is supposed to have higher standards. NBA accreditation of programs is based on the demonstrated capability of the institution and program to adhere to the qualitative criteria for accreditation and an assessment by experts through institutional visit. There are several qualitative criteria on faculty, facilities, students, industry interaction, and other such things. In particular, the NBA criterion on faculty and staff states that, “The faculty strength, cadres, qualification and level of competence and performance should be adequate to accomplish the institutional mission and goals. The qualifications of the faculty relevant to the programme area are generally measured by the advanced Degrees held by them, and their scholarship, creative activities and professional experience”

#### 4. DATA ANALYSIS AND INTERPRETATIONS

Q1 The communication cell for internal and external communication towards students, faculty, staff and stakeholders through modern means of communication like emails, etc. is well equipped and up to the standard

**Table 1: Showing responses to Q1**

Question 1	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Total
Number of faculty (Out of 85)	21	54	6	4	0	85
Percentage of faculty	25	64	7	5	0	100



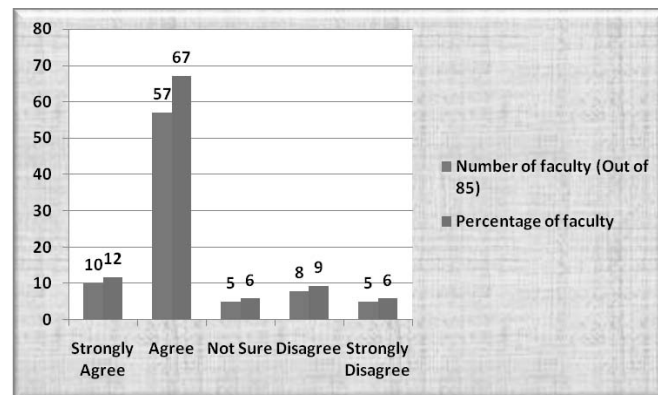
**Fig. 1: Showing responses to Q1**

Interpretations: About 89 % of the respondents are in favour of the statement that the institute has a well equipped and standardized communication cell for internal and external communication towards students, faculty, staff and stakeholders which is connected through modern means of communication like emails, etc. While 5 % of the respondents are against this statement. And 7 % of the respondents have no say in this regards.

Q2 The hostel, residential, canteen and other recreational facilities are satisfactory for the faculty.

**Table 2: Showing responses to Q2**

Question 2	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Total
Number of faculty (Out of 85)	10	57	5	8	5	85
Percentage of faculty	12	67	6	9	6	100



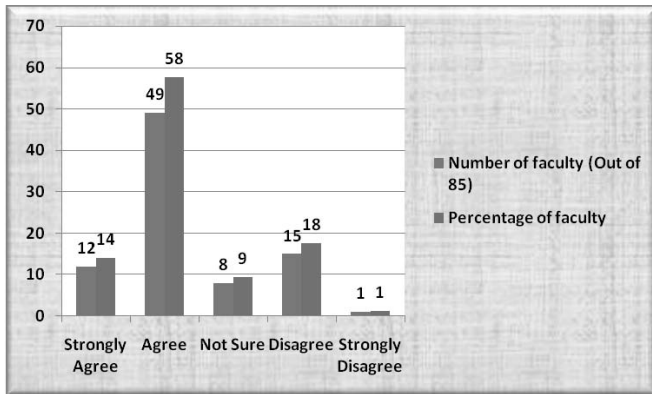
**Fig. 2: Showing responses to Q2**

Interpretations: About 79 % of the respondents find the hostel, residential, canteen and other recreational facilities satisfactory. While 15 % of the respondents are in disagreement with the statement that the recreational facilities provided by the institute are satisfactory.

Q3 The faculty / staff rooms in the institute are spacious, well furnished and adequate in number

**Table 3: Showing responses to Q3**

Question 3	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Total
Number of faculty (Out of 85)	12	49	8	15	1	85
Percentage of faculty	14	58	9	18	1	100



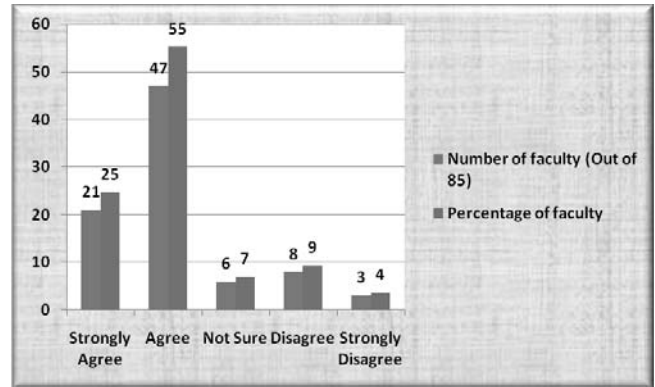
**Fig. 3: Showing responses to Q3**

Interpretations: A majority of the respondents i.e. about 72 % have said that the faculty / staff rooms in the institute are spacious, well furnished and adequate in number. 9 % of the respondents have no say in this regard. While 19 % of the respondents are against the statement that the faculty / staff rooms in the institute are spacious, well furnished and adequate in number.

Q4 The faculty members are provided with sufficient necessary facilities for doing their academic work (e.g. PC, Internet, Library support, etc)

**Table 4: Showing responses to Q4**

Question 4	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Total
Number of faculty (Out of 85)	21	47	6	8	3	85
Percentage of faculty	25	55	7	9	4	100



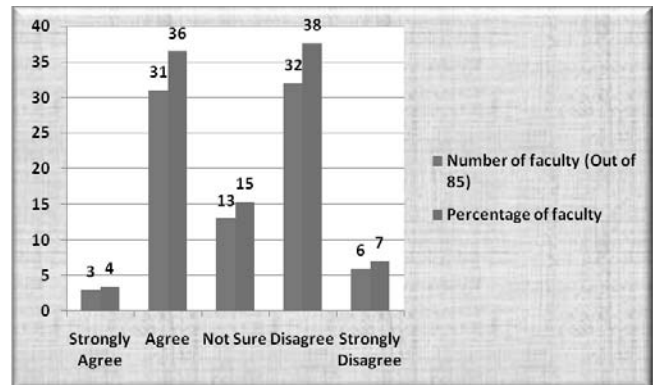
**Fig. 4: Showing responses to Q4**

Interpretations: About 80 % of the respondents are in favour of the statement that the faculty members are provided with sufficient necessary facilities for doing their academic work. While 13 % of the respondents are against this statement. 7 % of the respondents have no say in this regard.

Q5 The printers are in adequate number within the departments

**Table 5: Showing responses to Q5**

Question 5	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Total
Number of faculty (Out of 85)	3	31	13	32	6	85
Percentage of faculty	4	36	15	38	7	100



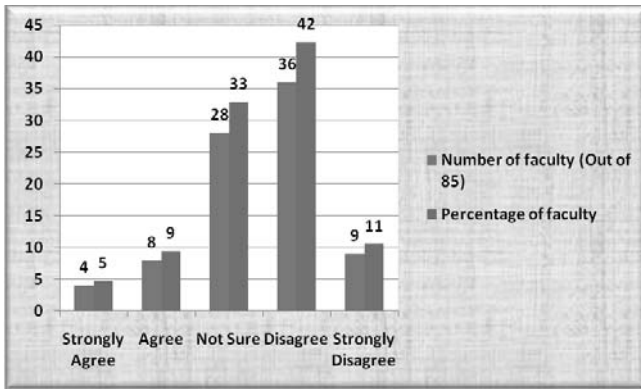
**Fig. 5: Showing responses to Q5**

Interpretations: About 40 % of the respondents are in favour of the statement that the printers are in adequate number within the departments in the institute. While 53 % of the respondents feel that the departments within the institute does not have an adequate number of printers.

Q6 A secured Wi-Fi facility for the faculty is well channelized to provide easy access

**Table 6: Showing responses to Q6**

Question 6	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Total
Number of faculty (Out of 85)	4	8	28	36	9	85
Percentage of faculty	5	9	33	42	11	100



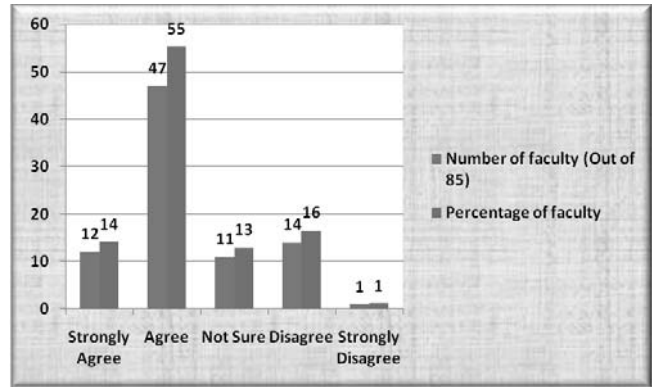
**Fig. 6: Showing responses to Q6**

Interpretations: Only 14 % of the respondents are in favour of the statement that a secured Wi-Fi facility for the faculty is well channelized to provide easy access in the institute. While the majority of the respondents i.e. about 53 % of the respondents feel that the institute does not provide a secured Wi-Fi facility for the faculty.

Q7 The library is well equipped with books, National, International & E Journals and internet facility for the faculty for their research & development

**Table 7: Showing responses to Q7**

Question 7	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Total
Number of faculty (Out of 85)	12	47	11	14	1	85
Percentage of faculty	14	55	13	16	1	100



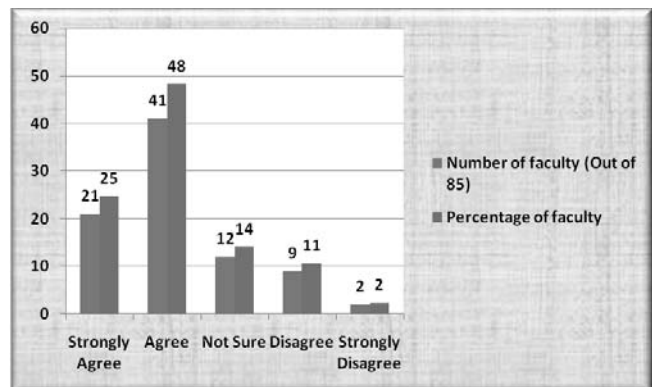
**Fig. 7: Showing responses to Q7**

Interpretations: The majority of the respondents i.e. about 69 % have said that the institute’s library is well equipped with books, National, International & E Journals and internet facility for the faculty for their research & development. While 17 % of the respondents are in the disagreement of this statement.

Q8 The faculty can visit the library with ease whenever they find time during the holidays, weekends and off hours

**Table 8: Showing responses to Q8**

Question 8	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Total
Number of faculty (Out of 85)	21	41	12	9	2	85
Percentage of faculty	25	48	14	11	2	100



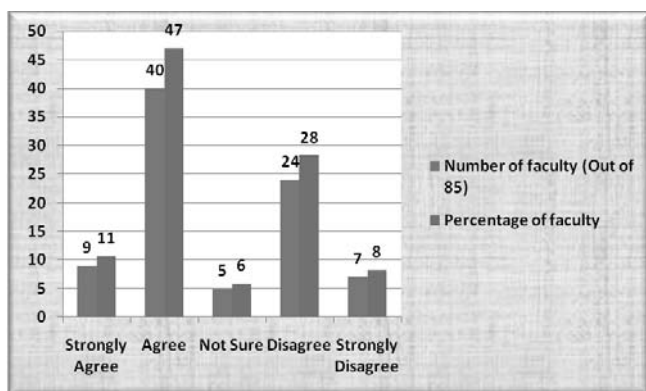
**Fig. 8: Showing responses to Q8**

Interpretations: About 73 % of the respondents feel that the faculty can visit the institute’s library with ease whenever they find time during the holidays, weekends and off hours. While 13 % of the respondents are in disagreement of the said statement.

Q9 The toilets for the faculty (for both males & females) are hygienic and in adequate number.

**Table 9: Showing responses to Q9**

Question 9	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Total
Number of faculty (Out of 85)	9	40	5	24	7	85
Percentage of faculty	11	47	6	28	8	100



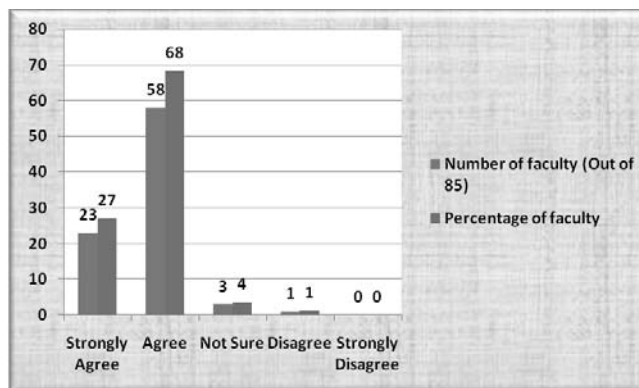
**Fig. 9: Showing responses to Q9**

Interpretations: About 58 % of the respondents have said that the toilets for the faculty (for both males & females) are hygienic and in adequate number in the institute. While 36 % of the respondents have said that the toilets for the faculty (for both males & females) are not hygienic and are not in adequate number in the institute.

Q10 Parking facility for the faculty vehicle is spacious

**Table 10: Showing responses to Q10**

Question 10	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Total
Number of faculty (Out of 85)	23	58	3	1	0	85
Percentage of faculty	27	68	4	1	0	100



**Fig. 10: Showing responses to Q10**

Interpretations: In this question we can see that the maximum percentage of the respondents i.e. about 95 % has said that the parking facility for the faculty vehicle is spacious in the institute. Only a small percentage i.e. 1 % of the respondents does not find the parking facility spacious.

**Correlation and regression analysis**

According to the guidelines given in the approval handbook of AICTE for the period 2012-2013, any institute would be a quality institute if it focuses on selection process, academic excellence, infrastructure, personality development and industry exposure, & management and administration in totality.

To find the correlation between infrastructure and quality of an institute, we would take all the parameters except “infrastructure” in order to represent “quality” parameters for an institute. So the parameters representing the “quality” of the institute would be selection process, academic excellence, personality development and industry exposure, & management and administration in totality.

**Table 11: Showing the correlation and regression value between infrastructure & quality of the institute**

	Infrastructure & Others
Correlation; r	0.707
Regression; R	0.706

Interpretations: The “infrastructure” and “quality of an institute” are positively related by 70.7%. This means that a change in the “infrastructure” of a private technical institute would affect the “quality” of that institute by 70.7%. An increase in the quality of “infrastructure” of a private technical institute would result in the increase in quality of “other parameters” of that private technical institute. And a decrease in the quality of “infrastructure” of a private technical institute would result in the decrease in quality of “other parameters” of that private technical institute. As the regression value between the two of them is 0.706 it means that 1% change in the “infrastructure” would lead to 0.706% change in the “quality of the institute”.

## FINDINGS

- About 89 % of the respondents feel that the institute has a well equipped and standardized communication cell for internal and external communication towards students, faculty, staff and stakeholders which is connected through modern means of communication like emails, etc.
  - About 79 % of the respondents find the hostel, residential, canteen and other recreational facilities satisfactory
  - A majority of the respondents i.e. about 72 % have said that the faculty / staff rooms in the institute are spacious, well furnished and adequate in number
  - About 80 % of the respondents feel that the faculty members are provided with sufficient necessary facilities for doing their academic work
  - The majority of the respondents i.e. about 69 % have said that the institute’s library is well equipped with books, National, International & E Journals and internet facility for the faculty for their research & development
  - About 73 % of the respondents feel that the faculty can visit the institute’s library with ease whenever they find time during the holidays, weekends and off hours
  - About 58 % of the respondents have said that the toilets for the faculty (for both males & females) are hygienic and in adequate number in the institute
  - The maximum percentage of the respondents i.e. about 95 % has said that the parking facility for the faculty vehicle is spacious in the institute
- About 53 % of the respondents feel that the departments within the institute do not have an adequate number of printers.
  - About 53 % of the respondents feel that the institute does not provide a secured Wi-Fi facility for the faculty.
  - The “infrastructure” and “quality of an institute” are positively related by 70.7%.

## CONCLUSIONS

For any technical and professional educational institution the most likely and vital deciding factor is its wide infrastructure and its carefully architecture design. Most of the institutions suffer with poor public image because of this inadequate and unimpressive body outline. The study conducted found that the institute has a quality infrastructure as it is based on AICTE model to a large extent. The institute provides all the necessary and sufficient facilities to the faculty members like a well equipped and standardized communication cell, satisfactory recreational facilities, spacious & well furnished faculty / staff rooms, facilities for doing their academic work, well equipped library, hygienic toilets , spacious parking facility. While the institute’s Wi-Fi facility needs to be well channelized for the faculty members.

The hypothesis is found to be true for the study. As the “infrastructure” and “quality of the institute” are positively related by 70.7%. This means that a change in the “infrastructure” of a private technical institute would affect the “quality” of that institute by 70.7%. An increase in the quality of “infrastructure” of a private technical institute would result in the increase in quality of “other parameters” of that private technical institute. And a decrease in the quality of “infrastructure” of a private technical institute would result in the decrease in quality of “other parameters” of that private technical institute. This means that if the infrastructure of a private technical institute is good then it would be a quality institute and it would also be focusing on the development of its selection process, academic excellence, personality development and industry exposure, & management and administration in totality.

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