

Teachers' Perceptions of University–Industry Relations: A Study of Universities in Assam

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Abstract: The development of collaborative partnerships is essential for maintaining institutional relevance in a rapidly evolving society. Consequently, University–Industry Relations has emerged as a focal point of discourse amongst academicians, educational institutions and the government, necessitating the initiation of strong guidelines to strengthen industrial relations in higher education. This study examines the perception of university faculty members towards university–industry relations. The study was conducted across three categories of universities in Assam—Central, State and Private universities. This study employed a descriptive research design. Data were collected from 105 faculty members, comprising 35 respondents from each university category. Statistical analysis indicated a positive perception of these relations among faculty, signalling a recognition of the importance of industrial collaboration in the university education ecosystem. The findings also revealed that the perception of university teachers does not differ significantly based on gender, nor do they vary between those working in central, state or private universities. However, sustaining the collaboration requires deliberate intervention and institutionalisation of effective supporting mechanisms.

Keywords: university–industry relations, university teachers, universities in Assam, perception, higher education

1. Introduction

In the contemporary global landscape, higher education is recognised for its crucial role in creating knowledge and driving technological innovation (Bhattacharya & Arora, 2007). There is a need for a new university paradigm that focuses on developing human resources for industry, thereby driving economic advancement (Parameswaran, 2014). Consequently, University–Industry Relations has emerged as a focal point of discourse amongst academicians, educational institutions and the government, necessitating the initiation of ro-

bust guidelines to strengthen vivacious industrial relations in higher education. The paradigm shift in the educational, technological and business scenario demands a strategic reorientation of academic curricula. Such educational reorientation is vital to develop individuals capable of steering modern complexities. Acknowledging the profuse potentialities of university and industry relations, Narahari (2009) highlights the need for creating opportunities for promoting the linkages. As noted by Singh (2019), the development of this healthy collaborative partnership is essential for institutional relevance in a rapidly evolving society.

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The nature of university and industry interaction, which largely relied on informal relations, has seen recent trends indicating a decisive shift towards more formalised agreements (Salter, Bruneel & D'Este, 2009). Though collaboration in activities like consultancy or personnel exchanges existed (Parameswaran, 2014), the university is currently witnessing a profound academic transformation. This is characterised by active involvement of the university in the process of knowledge production, transfer and engagement with productive sectors (Vega-Jurado, Fernandez-De-Lucio & Huanca (2007). However, to ensure the effectiveness of this collaboration, it must be institutionalised and supported with proper physical and human resources to foster a cooperative culture rather than solely depending on individual academics (Natarajan, 1998). Industry assesses the commercial value of the university because its outputs and services are seen as vital inputs for business organisations (Bhattacharya & Arora, 2007). Empirical evidence indicates that creating an active collaboration between the university and the company, both in depth and breadth, serves as an important facilitator for students' employment (Arranz et al., 2022).

University-Industry Relations can address the gap between academic instruction in university and the evolving demand of markets; mitigating the academic degree-market mismatch (Afonso et al., 2012), diminishing the possibility of an unemployment ratio (Singh, 2019). This synergy offers reciprocal benefits: they aid in the quality improvement of university teaching and research, and improves efficiency in industrial production (Bansel, 2011). As university research remains a key for advancement of knowledge and innovation, the communication between industrial and academic researchers facilitates a more noteworthy cause (Schmoch, 1999). Ultimately,

University-Industry Collaboration represent a learning exchange where both entities feel rewarded, reinforced, and rejuvenated via learning exchanges (Sun & Turner, 2023). Given these advantages, Ishengoma and Vaaland (2016) suggest organisational arrangements and implement strategies to engage local businesses and multinational enterprises. Studies have emphasised the significance of collaboration, urging deliberation to boost participation from academic and industrial stakeholders.

2. Objectives of the study

- (i) To study the perception of teachers of Universities in Assam towards University-Industry Relations.
- (ii) To compare the perception of teachers of Universities of Assam towards University-Industry Relations with respect to-
 - a) Gender (Male and Female teachers)
 - b) Management system (between Central University and State University, between Central University and Private University, between State University and Private University, and among Central University, State University and Private University).

3. Hypotheses

- 3.1. There is no significant difference in the perception towards University-Industry Relations between male and female teachers of Universities in Assam.
- 3.2. There is no significant difference in the perception towards University-Industry Relations between the teachers of Central Universities and State Universities in Assam.
- 3.3. There is no significant difference in the perception towards University-Industry Relations between the teachers of Central Universities and Private Universities in Assam.
- 3.4. There is no significant difference in the perception towards University-Industry

Relations between the teachers of State Universities and Private Universities in Assam.

3.5. There is no significant difference in the perception towards University-Industry Relations among the teachers of Central Universities, State Universities and Private Universities in Assam.

4. Methodology

4.1. Research design: This study employed a descriptive research design to investigate the perception of university faculty towards university-industry relations in Assam. The study focused on three categories of universities in Assam, namely: Central University (Tezpur University), State University (Dibrugarh University) and Private University (Assam Don Bosco University). These universities were selected using a purposive sampling technique.

4.2. Participants: A total of 105 faculty members participated in the study. This included 35 faculty members from Central University, 35 faculty members from State University and 35 faculty members from Private University. The sample from Central University comprised faculty from Engineering Departments, the Department of Chemistry, and the Department of Business Administration. The sample from State University included faculty from the Engineering Departments, the Department of Chemistry, Pharmaceutical Sciences, and Business Administration. The sample from Private University in-

cluded faculty from Engineering Departments, the Department of Chemistry and the Department of Business Administration.

4.3. Tools used in the study: Data were gathered using a self-constructed and standardised Perception Scale based on Likert type scale. The scale includes five key dimensions:

- (i) Academic Related Activities through University-Industry Relations
- (ii) Students' Related Activities through University-Industry Relations
- (iii) Research Activities through University-Industry Relations
- (iv) Benefits of University-Industry Relations
- (v) Constraints of University-Industry Relations

4.4. Data Collection Procedure: For the collection of data, the researcher visited the university and, with due permission, collected the necessary data. Data collection was executed in two distinct phases. Firstly, data were collected for the construction and standardisation of the scale, and then final data collection was carried out for analysis.

4.5. Statistical techniques: Data were analysed using statistical techniques such as Mean, Standard Deviation, t-test, ANOVA, Skewness, Kurtosis.

5. Results

5.1. Perception of teachers of universities in Assam towards University-Industry relations

Table 1: Perception of teachers of universities towards University-Industry relations

Sample	Mean	Standard Deviation	Skewness	Kurtosis
105	168.78	13.17	-0.18	-0.32

The study revealed that the distribution of scores obtained by the teachers in the perception scale towards university-industry

relations is skewed negatively (-0.18), which means the scores are massed at the

high end of the scale. It suggests that teachers have a positive perception towards the university-industry relations. The kurtosis of the distribution of scores obtained by the teachers in the perception scale towards university-industry relations is platykurtic (-0.32), where the distribution curve is flatter than the normal distribution.

5.2. Comparison of the Perception of University Teachers towards University-Industry Relations

Before comparing the perception of the university teachers towards university-industry relations based on gender and types of management, the researcher assessed whether the data set is normally distributed or not. To check this, the researcher employed Normal Probability Plot. Figure 1 shows the distribution of the data set.

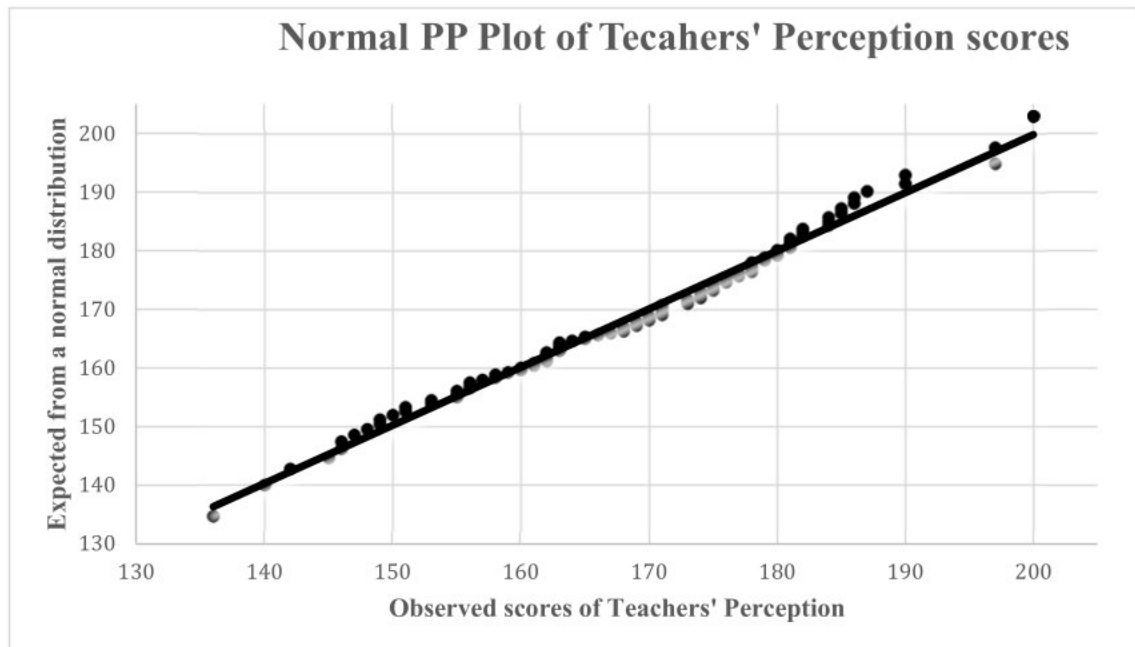


Fig 1: Normal Probability Plot of Perception Scores of University Teachers towards the University-Industry Relations in Assam

Fig 1 shows that the data points follow a straight and diagonal line, which indicates the data is not deviated from a normal distribution.

Ho: There is no significant difference in the perception towards University-Industry relations between the male and female teachers of Universities in Assam.

Table 2: Perception of male and female teachers of Universities of Assam towards University-Industry Relations

Gender	N	Mean	SD	SEm	df	t value	Level of Significance
Male	68	169.35	12.98	1.57	103	0.60	0.05
Female	37	167.73	13.63	2.24			

From Table 2, it is observed that the mean and the standard deviation of male teachers are 169.35 and 12.98, respectively. The mean and standard deviation of female teachers are 167.73 and 13.63, respectively. The Standard Error of Mean for male and female teachers is 1.57 and 2.24, respectively. The calculated *t* value is 0.60, which is smaller than the critical value 1.98 at 0.05 significance level. Hence, the null hypothesis is not rejected. Therefore, it can be said

there is no significant difference in the perception towards University-Industry Relations between male and female teachers of Universities in Assam.

H0: There is no significant difference in the perception towards University-Industry Relations between the teachers of Central University and State University.

Table 3: Perception of Central University and State University teachers towards University-Industry Relations

University	N	Mean	SD	Sem	df	t value	Level of Significance
Central University	35	172.29	14	2.37	68	1.92	0.05
State University	35	166.51	11.02	1.86			

From Table 3, it is observed that the mean of central university and state university teachers is 172.29 and 166.51, respectively, and the SD of central university and state university is 14 and 11.02, respectively. It is found that the calculated *t* value is 1.92, which is smaller than the critical value 1.99 at 0.05 significance level. Hence, the null hypothesis is not rejected. Therefore, it can

be said there is no significant difference in the perception towards University-Industry Relations between the teachers of Central University and Private University.

H0: There is no significant difference in the perception towards University-Industry relations between the teachers of Central University and Private University

Table 4: Perception of university teachers of Central University and Private University towards University-Industry Relations

University	N	Mean	SD	SEm	df	t value	Level of Significance
Central University	35	172.29	14.0	2.37	68	1.42	0.05
Private University	35	167.54	13.92	2.35			

From Table 4, it is observed that the mean and the standard deviation of central university teachers are 172.29 and 14.0, respectively. The mean and standard deviation of private university teachers are 167.54 and 13.92, respectively. The Standard Error of Mean for central university and private university teachers is 2.37 and 2.35, respectively. The calculated *t* value is 1.42,

which is smaller than the critical value 1.99 at 0.05 significance level. Hence, the null hypothesis is not rejected. Therefore, it can be said that there is no significant difference in the perception towards University-Industry relations between the teachers of central university and private university.

H0: There is no significant difference in the perception towards University-Industry relations between the teachers of State University and Private University

Table 5: Perception of teachers of State University and Private University towards University-Industry Relations

University	N	Mean	SD	SEm	df	t value	Level of Significance
Private university	35	167.54	13.92	2.35	68	0.34	0.05
State university	35	166.51	11.02	1.86			

From Table 5, it is observed that the mean of private university and state university teachers is 167.54 and 166.51, respectively, and the SD of private university and state university teachers is 13.92 and 11.02, respectively. It is found that the calculated t value is 0.34, which is smaller than the critical value 1.99 at 0.05 significance level. Hence, the null hypothesis is not rejected. Therefore, it can be said there is no significant difference in the perception towards

University-Industry Relations between the teachers of state university and private university.

H0: There is no significant difference in the perception towards University-Industry relations among the teachers of Central University, State University and Private University of Assam

Table 6: Perception of teachers of Central University, State University and Private University of Assam towards University-Industry Relations

Source of Variation	SS	df	MS	F	P-value	F crit	Level of Significance
Between Groups	663.3905	2	331.6952	1.946146	0.14809	3.085465	0.05
Within Groups	17384.57	102	170.437				
Total	18047.96	104					

The calculated F value 1.94 is smaller than the critical value 3.08, and the P-value 0.14 is greater than 0.05. Hence, the null hypothesis is not rejected. Therefore, it can be concluded that there is no significant difference in the perception towards University-Industry Relations among the teachers of Central University, State University and Private University of Assam.

The study revealed that the distribution of scores obtained by the teachers in the perception scale towards university-industry relations is skewed negatively (-0.18), which means the scores are massed at the high end of the scale. It indicates that teachers have a positive perception towards the university-industry relations. This result corresponds with the findings of the study by Priya et al. (2021), where it was reported that about 85 per cent of the faculty agreed

6. Findings and Discussion

to industry's role in facilitating the development of higher education. Similarly, in the study by Griffin (2022), 88% of faculty reported their involvement in academia-industry collaboration. Campbell and Slaughter (1999) noted that faculty involved in university-industry activities showed a stronger enthusiasm for revenue-generating opportunities compared to those not involved, according to the conflict-of-interest measure. As per the study by Sá, Dias, and Sá, (2017), Portuguese academics exhibited an overall favourable attitude towards utilising research outputs for addressing real-world problems, independent of their involvement in entrepreneurial endeavours. It was also revealed that those faculty members involved in university-industry related activities appeared to prioritise leveraging these connections to boost their autonomy, income and reputation.

The study found no significant difference in the perception of University-Industry Relations between male and female teachers of Universities in Assam. This might be due to perceived benefits of university-industry relations in addressing various issues, such as equipping the students with industrial knowledge and skills, and fostering greater research collaboration. Similarly, no significant difference in the perception of University-Industry Relations was found between the teachers of central university and state university, between the central university and private university teachers, between state university and private university teachers and among the teachers of Central University, State University and Private University in Assam. The study by Dang, Rammal and Nguyen (2024) indicated contradictory results where the types of university affected perceived outcomes of university-industry collaborations. Similarly, the type of university had a pronounced effect on faculty engagement in industry partnership, as indicated in the study by Kuchumova, Bilyalov & Jonbekova (2023).

6.1 Conclusion: The present study offers an insight into the perception of university teachers towards university-industry relations. The result indicates a positive perception of these relations among faculty, signalling a recognition of the importance of industrial collaboration in the university education ecosystem. Statistical analysis demonstrates that the perception of university teachers does not differ significantly based on gender, nor do they vary between those working in central, state or private universities. However, sustaining the collaboration requires deliberate intervention and institutionalisation of effective supporting mechanisms. Future research can focus on exploring specific institutional strengths and identifying various impediments to collaboration to identify the gaps between academia and industry.

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