

A COMPARATIVE STUDY OF TECHNOSTRESS AMONG ACADEMIC STAFF IN PUBLIC AND PRIVATE HIGHER EDUCATION INSTITUTIONS IN SOUTH ODISHA

K Chinmayee Patra¹ and Swati Bansal²

¹Research Scholar, Sharda School of Business Studies
cpatra148@gmail.com

²Assistant Professor, Sharda School of Business Studies
swati.bansal@sharda.ac.in

ABSTRACT

The increasing integration of digital technologies in higher education has significantly transformed teaching, learning, and administrative practices while simultaneously increasing technology-related stress among academic staff. This study aimed to compare the level of technostress among academic staff working in public and private higher education institutions in South Odisha. A quantitative comparative research design was adopted, and primary data were collected from 175 academic staff members using a structured questionnaire. The collected data were analyzed using IBM SPSS Statistics, employing frequency analysis, descriptive statistics, Cronbach's Alpha, and an independent samples t-test. The findings indicated a moderate level of technostress among the respondents. The reliability analysis demonstrated acceptable internal consistency of the measurement scale (Cronbach's Alpha = 0.670). Furthermore, the independent samples t-test revealed a statistically significant difference in technostress between academic staff employed in public and private higher education institutions ($t(173) = -20.890, p < 0.001$), with faculty members in private institutions reporting higher levels of technostress than those in public institutions. The study concludes that institutional type plays a significant role in influencing technostress among academic staff. The findings highlight the need for higher education institutions to strengthen technological support systems, provide continuous digital competency training, and implement strategies that promote faculty well-being and effective technology adoption.

Keywords Technostress; Higher Education Institutions; Academic Staff; Public and Private Institutions; Digital Technology; South Odisha; Comparative Study

INTRODUCTION

The rapid advancement of Information and Communication Technologies (ICTs) has significantly transformed the higher education sector worldwide. Digital technologies, including learning management systems, virtual classrooms, artificial intelligence, cloud computing, and online collaboration platforms, have become integral components of teaching, research, and academic administration. These technological developments have enhanced educational accessibility, flexibility, and institutional efficiency while simultaneously increasing the technological demands placed on academic staff (Bond et al., 2021).

Although digital transformation has improved educational practices, it has also introduced new workplace challenges for faculty members. Academic staff are expected to continuously adapt to evolving digital platforms, acquire new technological competencies, manage online teaching environments, and respond to frequent technological changes (Raj et al., 2026). These increasing technological demands may result in technostress, a form of stress experienced due to difficulties in adapting to or effectively using information and communication technologies (Tarafdar et al., 2007). Technostress has been associated with technology overload, technology complexity, technology insecurity, technology uncertainty, and technology invasion, all of which may adversely influence employees' psychological well-being and work performance (Tarafdar et al., 2019).

In higher education institutions, the increasing reliance on digital technologies has substantially changed the nature of academic work. Faculty members are required to integrate digital tools into teaching, assessment, research, communication, and administrative responsibilities. These expectations have intensified following the widespread adoption of online and blended learning models, making technology an indispensable component of academic life (Dwivedi et al., 2023). Consequently, many academic staff experience varying levels of technostress, which may reduce productivity, job satisfaction, and overall professional effectiveness.

Previous studies have examined technostress in various occupational settings, including information technology, healthcare, banking, and corporate organizations (La Torre et al., 2019; Tarafdar et al., 2019). However, comparatively fewer studies have focused on academic staff in higher education institutions, particularly in the Indian context. Furthermore, limited empirical evidence exists comparing technostress between public and private higher education institutions in South Odisha, where institutional resources, technological infrastructure,

administrative expectations, and digital adoption practices may differ considerably. Understanding these differences is important for developing targeted institutional strategies to improve faculty well-being and promote effective technology integration.

Against this background, the present study compares the level of technostress among academic staff working in public and private higher education institutions in South Odisha. The findings are expected to contribute to the growing literature on technostress in higher education and provide practical insights for institutional administrators and policymakers seeking to create healthier and more supportive digital work environments (Ankit *et al.*, 2024).

LITERATURE REVIEW

The increasing integration of digital technologies into higher education has transformed teaching, learning, research, and institutional administration. The widespread adoption of information and communication technologies (ICTs), learning management systems, artificial intelligence, and online teaching platforms has significantly enhanced educational accessibility and operational efficiency. However, these technological advancements have also increased the technological demands placed on academic staff, leading to growing concerns regarding technostress (Bond *et al.*, 2021).

The concept of technostress was first introduced by Brod (1984), who described it as a modern adaptation disorder resulting from an individual's inability to cope effectively with new computer technologies. Since then, the concept has evolved considerably. Tarafdar *et al.* (2007) conceptualized technostress as stress experienced due to the use of information technologies in the workplace and identified several major dimensions, including technology overload, technology complexity, technology invasion, technology insecurity, and technology uncertainty. These dimensions have become the foundation of contemporary technostress research.

Technostress has been widely investigated across different occupational settings because of its influence on employee well-being and organizational performance. According to Tarafdar *et al.* (2019), excessive technological demands may produce both positive and negative outcomes depending on employees' perceptions and organizational support. While technology can improve productivity and efficiency, continuous technological change, digital interruptions, and increasing performance expectations often create psychological strain, reduce job satisfaction, and contribute to employee burnout.

Higher education institutions have undergone substantial digital transformation over the last decade, particularly following the rapid expansion of online and blended learning. Faculty members are now expected to integrate digital technologies into teaching, student assessment, research, communication, and administrative activities (Singh *et al.*, 2026). Although these developments have improved educational delivery, they have simultaneously increased workload and technological pressure among academic staff (Dwivedi *et al.*, 2023). Consequently, academic professionals are increasingly vulnerable to technostress due to continuous adaptation to evolving digital environments. (Sharma *et al.*, 2026)

Several empirical studies have reported that technostress negatively affects academic staff. La Torre *et al.* (2019) found that technology-related stress adversely influences employees' productivity, work performance, and psychological health. Similarly, Upadhyaya and Vrinda (2021) reported that excessive digital workload and technological complexity contribute significantly to stress among university faculty members. Academic staff experiencing higher levels of technostress often report reduced teaching effectiveness, lower job satisfaction, and greater emotional exhaustion.

Institutional characteristics also influence technostress levels. Faculty members working in private higher education institutions are frequently required to meet stricter performance expectations, adopt new educational technologies more rapidly, and participate in continuous digital monitoring, potentially increasing their susceptibility to technostress compared to their counterparts in public institutions (Suharti & Daud, 2022). Differences in institutional resources, organizational support, and technological infrastructure may therefore contribute to variations in technostress across institution types.

Despite the growing body of literature, research on technostress within the Indian higher education sector remains relatively limited, particularly at the regional level. Most previous studies have focused on corporate organizations, information technology professionals, healthcare employees, and banking personnel. Comparatively few studies have examined technostress among academic staff, and even fewer have compared public and private higher education institutions in South Odisha. This lack of comparative evidence highlights the need for empirical research that examines whether institutional type influences technostress among faculty

members. The present study addresses this gap by comparing technostress among academic staff employed in public and private higher education institutions in South Odisha.

RESEARCH GAP

Although technostress has received increasing attention in recent years, most existing studies have focused on employees in corporate organizations, the IT sector, and the banking industry. Comparatively fewer studies have examined technostress among academic staff in higher education institutions, particularly in the Indian context. Furthermore, limited research has compared technostress between public and private higher education institutions in South Odisha. This study addresses this gap by providing a comparative analysis of technostress among academic staff in these institutions.

RESEARCH OBJECTIVE

- To examine the demographic profile of academic staff in public and private higher education institutions in South Odisha.
- To assess the level of technostress among academic staff.
- To evaluate the reliability of the technostress measurement scale.
- To compare the level of technostress between academic staff employed in public and private higher education institutions in South Odisha.

RESEARCH HYPOTHESIS

Null Hypothesis (H_0)

There is no significant difference in the level of technostress between academic staff working in public and private higher education institutions in South Odisha.

Alternative Hypothesis (H_1)

There is a significant difference in the level of technostress between academic staff working in public and private higher education institutions in South Odisha.

Research Methodology

This study adopted a quantitative research approach using a comparative research design to examine differences in technostress among academic staff in public and private higher education institutions in South Odisha. Primary data were collected through a structured questionnaire administered to faculty members. A total of 175 valid responses were obtained using a convenience sampling technique. The collected data were analyzed using IBM SPSS Statistics. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to summarize the respondents' demographic characteristics and the level of technostress. The internal consistency of the measurement scale was assessed using Cronbach's Alpha, while an independent samples *t*-test was employed to compare technostress levels between academic staff from public and private higher education institutions.

Data Analysis and Results

Table 1. Demographic Profile of Respondents

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	86	49.1
	Female	89	50.9
Age Group	25–35 years	49	28
	36–45 years	79	45.1
	46–55 years	31	17.7
	56 years and above	16	9.1
Qualification	Postgraduate	39	22.3
	M.Phil.	18	10.3
	PhD	118	67.4
Institution Type	Public	87	49.7
	Private	88	50.3

Table 1 presents the demographic profile of the respondents. Among the 175 academic staff members, 50.9% were female and 49.1% were male, indicating a balanced gender distribution. The majority of respondents (45.1%) belonged to the 36–45 years age group. Most participants (67.4%) possessed a PhD, reflecting a highly qualified sample. In terms of institution type, 50.3% of the respondents were from private higher education institutions, while 49.7% were from public institutions, ensuring a balanced representation for comparative analysis.

Table 2. Descriptive Statistics of Technostress Items

Variable	Mean	Standard Deviation	Minimum	Maximum
TS1	3.13	0.634	1	4
TS2	3.17	0.679	1	5
TS3	3.22	0.72	1	5
TS4	3.09	0.718	2	5
TS5	3.15	0.687	2	5
TS6	3.17	0.679	2	5
TS7	3.11	0.668	1	5
TS8	3.13	0.683	2	5
TS9	3.06	0.717	1	5
TS10	3.02	0.711	2	5
Overall Technostress	3.12	0.347	2.4	4

Table 2 presents the descriptive statistics of the technostress scale. The overall mean technostress score was 3.12 (SD = 0.35), indicating a moderate level of technostress among academic staff in higher education institutions in South Odisha. Among the individual items, TS3 recorded the highest mean score (M = 3.22, SD = 0.72), whereas TS10 had the lowest mean score (M = 3.02, SD = 0.71). The relatively low standard deviation values across all items suggest a reasonable level of consistency in respondents' perceptions.

Table 3. Reliability Analysis of the Technostress Scale

Scale	Number of Items	Cronbach's Alpha
Technostress	10	0.67

The reliability of the technostress scale was assessed using Cronbach's Alpha. The 10-item scale yielded a Cronbach's Alpha of 0.670, indicating moderate internal consistency. Although the reliability coefficient is slightly below the conventional threshold of 0.70, it is considered acceptable for exploratory research and suggests that the scale demonstrates an adequate level of consistency for subsequent statistical analyses.

Table 4. Comparison of Technostress among Academic Staff in Public and Private Higher Education Institutions in South Odisha

Variable	Institution Type	N	Mean	SD	<i>t</i>	df	<i>p</i>
Technostress	Public	87	2.83	0.175	-20.89	173	<0.001
	Private	88	3.42	0.195			

Table 4 presents the comparison of technostress levels between academic staff in public and private higher education institutions in South Odisha. The findings indicate that academic staff in private institutions reported a higher mean technostress score (M = 3.415, SD = 0.195) than those in public institutions (M = 2.830, SD = 0.175). The independent samples *t*-test revealed that this difference was statistically significant ($t(173) = -20.890$, $p < 0.001$). Therefore, the findings suggest that academic staff working in private higher education institutions experience significantly higher levels of technostress than their counterparts in public higher education institutions.

DISCUSSION

The present study examined the level of technostress among academic staff in public and private higher education institutions in South Odisha. The descriptive analysis revealed a moderate level of technostress among the respondents, suggesting that academic staff experience technology-related stress in their routine teaching, research, and administrative responsibilities. The reliability analysis indicated acceptable internal consistency of the technostress scale, supporting its use for further statistical analysis.

The independent samples *t*-test revealed a statistically significant difference in technostress between academic staff employed in public and private higher education institutions. Faculty members from private institutions reported significantly higher levels of technostress than those from public institutions. This difference may be attributed to greater expectations regarding technology adoption, increased digital monitoring, higher performance demands, and continuous adaptation to online teaching and institutional technological systems within private institutions.

These findings suggest that institutional context plays an important role in shaping the level of technostress experienced by academic staff. The results highlight the need for supportive organizational policies and effective technology management practices to reduce technology-related stress and improve faculty well-being.

CONCLUSION

This study compared the level of technostress among academic staff working in public and private higher education institutions in South Odisha. The findings indicate that technostress is prevalent among academic staff, with private institution faculty experiencing significantly higher levels of technostress than those in public institutions.

The study emphasizes that increasing dependence on digital technologies in higher education has created new workplace challenges that may adversely affect academic staff. Therefore, higher education institutions should adopt appropriate strategies to manage technostress by providing technological support, continuous professional development, and a healthy digital work environment. Addressing technostress is essential for improving faculty well-being, job effectiveness, and the overall quality of higher education.

PRACTICAL IMPLICATIONS

The findings of this study provide several practical implications for higher education institutions:

- Higher education institutions should organize regular ICT training and professional development programmes to enhance faculty members' technological competence and confidence.
- Institutional management should provide adequate technical support and digital infrastructure to reduce technology-related challenges faced by academic staff.
- Private higher education institutions should develop faculty well-being initiatives that help employees effectively manage technology-related stress.
- Academic institutions should establish clear digital work policies to minimize excessive technology demands and promote a balanced work environment.
- Policymakers and educational administrators may use these findings to design strategies that encourage the healthy and sustainable integration of digital technologies in higher education.

LIMITATIONS OF THE STUDY

- The study was confined to 175 academic staff members from public and private higher education institutions in South Odisha, which may limit the generalizability of the findings to other regions.
- The study adopted a cross-sectional research design, capturing respondents' perceptions at a single point in time.
- Data were collected using a self-reported questionnaire, which may be influenced by respondents' personal perceptions and response bias.
- The study focused solely on comparing technostress across institution types and did not examine other organizational or psychological factors that may influence technostress.

FUTURE RESEARCH

Future studies may consider the following directions:

- Conduct similar studies in other regions of India to compare technostress across different educational contexts.
- Increase the sample size and include participants from universities, autonomous colleges, and technical institutions to improve the generalizability of the findings.
- Employ longitudinal research designs to examine changes in technostress over time.

- Investigate additional variables such as job satisfaction, organizational support, work engagement, digital competence, burnout, and faculty well-being to better understand the consequences and determinants of technostress.
- Compare technostress among academic staff across different disciplines and levels of teaching experience to provide a broader understanding of technology-related stress in higher education.

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