

# Technostress Resilience: Embracing the Digital Challenge among College Librarians in the Barak Valley, Assam

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## Abstract

*Technostress is caused when training and skills do not match that of new technological adaptations among individuals. Such situations are increasingly evident in library environments, where librarians are required to manage digital resources, online platforms, and technology-driven services. Several empirical studies have reported the growing prevalence of technostress among library professionals due to continuous technological transitions (Tarafdar et al., 2007; Panda, 2020; Das, 2019). The present study was conducted among college librarians affiliated with Assam University in the Barak Valley region of Assam to assess the extent and impact of technostress. Findings reveal that techno-invasion and techno-uncertainty were the most prominent stress dimensions. Factors such as age, marital status, limited training opportunities, increased online work hours, multitasking, and lack of institutional appreciation contributed to elevated stress levels. Technostress was also found to negatively affect the physical, psychological, and professional well-being of librarians. The study further proposes structured coping strategies to enhance technostress resilience among library professionals.*

**Keywords:** Technostress, Technology, Library, Librarian

## Introduction

In today's fast paced digital age, librarians are facing increasing pressure to adapt and integrate technology into their libraries. The role of librarians has evolved beyond just organising physical books and resources; they now need to manage digital databases, online catalogue systems, e-books, and various other technological tools to provide efficient and up-to-date services to their patrons. Libraries are expected to keep up with the latest technological trends to offer seamless access to information and resources. Patrons often have high expectations for online accessibility, interactive platforms, and user-friendly interfaces. Failure to implement such technologies can lead to negative perceptions of the library's relevance and effectiveness. This constant need

to learn, adopt, and implement new technologies can create a significant source of stress for librarians. They may feel overwhelmed by the rapid pace of technological change, worried about their ability to keep up, and concerned about meeting the demands of their patrons. The fear of being judged or criticized for not adequately incorporating technology can further contribute to their technostress. In summary, librarians are indeed facing technostress as they navigate the challenges of integrating technology into their work. The pressure to stay current and relevant, along with the fear of negative judgement, can result in heightened levels of stress and anxiety.

Education in the post Covid 19 era has further elevated such levels of stress and anxiety among the librarians. Almost

all the technological brainstorming is already in play to make the educational structure more techno-friendly and accessible. In this stance, the library has undergone a quantum jump to keep in pace with such a development in delivery of resources. Studies have reported that librarians increasingly experience moderate to high levels of technostress due to rapid technological changes in libraries (Tarafdar et al., 2007; Panda, 2020).

Technostress has been explained as a disease showing inability to adapt to new technological circumstances. Technostress causes a form of anxiety when the computer is overused and there arises symptoms of struggle to adjust to the new system. But another distinct variant of technostress also reveals the existence of stress when over identification with computers or any other technological equipment takes place. In both cases, technostress seems polarized in its effects and symptoms. (Brod, 1984)

Tarafdar, et al. (2007) constructed a Technostress covering the following five dimensions which have been considered in the research paper as well:

**Techno-overload:** The individual feels a kind of psychological and physical burden in case of overuse of technological appliances and software.

**Techno-invasion:** The individual feels that there is invasion of privacy and no demarcation between personal and professional lives due to constant technological intervention.

**Techno-complexity:** Use of information communication technologies requires skilled personnel but the present situation compels everyone to use technology which makes the situation complicated.

**Techno-insecurity:** When work is too much technology based, people with comparatively lesser knowledge

of information communication technologies' skills can feel insecure about their jobs.

- (a) **Techno-uncertainty:** The individual feels uncertain and unsettling as information communication technologies are continuously changing and accordingly the person needs to upgrade themselves.

## **Review of related literature**

Technostress as a construct has been researched upon in relation to some other variables as seen in various research discussions. A diagnostic tool has been proposed theoretically by Tarafdar et al. (2007) to evaluate the nature and extent of technological stress in five domains. Kassim et al. (2021) investigated the relationship between Technostress and emotional exhaustion among office personnel. In the same direction, Simon, K. (2020) explored relationships between emotional labour among library professionals. In both the studies, stressors were identified and how it could be emotionally balanced was discussed. Some research studies like that of Panda (2000) and Ajala and Babatunde, (2011) focused on the nature and extent of Technostress impacting the personal, professional, and social lives of the library staff. Identification of perceived areas of stress can be effective in developing coping mechanisms for Technostress management. Support systems and positive technology need to be encouraged to counteract Technostress among library professionals. Ibrahim et al. (2007) and Das (2019) in their research studies concluded that information overload produced enormous levels of Technostress thus discouraging level of job satisfaction among both academic and non-academic staff. Data management in the library is one the main causes of Technostress and tension regarding professional

management. Technostress has been found to be inversely proportional to job performance, with enormous mental fatigue and absenteeism as major byproducts. It also induces imperfect time management on the part of the librarians, especially in case of engagement in other activities besides their primary job profile, Dina (2016), Chiappetta (2017), Isiakpona and Oyeronke (2011). De et al. (2020); Saleem et al. (2021) and Nadyasari et al. (2022) observed through their research studies that there was an unplanned digital surge during the Covid-19 pandemic resulting in a hybrid approach in the workplace. Online monitoring of the academic staff during working hours has put undue stress on the librarians and the creativity, self-efficacy and training of the staff can help in moderating Technostress.

## Objectives

The objectives of the study can be stated as:

1. To measure the extent of Technostress among the librarians of Barak Valley;
2. To identify differences in the level of Technostress based on socio-demographic profile of the librarians;
3. To understand the effect of Technostress on the librarians.

## Research questions

Keeping in view the stated objectives, certain research questions have been formulated for the study which is as follows:

- Q1. What is the nature and extent of Technostress among the librarians of Barak Valley?
- Q2. What are the probable causes, effects, and strategies to counter Technostress?

## Research Methodology

The study adopted a descriptive survey method to assess the level of technostress among college librarians in the Barak Valley. This method was considered appropriate as it enabled the collection of quantitative data related to librarians' socio-demographic characteristics, level of technostress, and its effects on their professional and personal well-being.

## Population and sample

The research sample consisted of librarians working in government-funded colleges affiliated with Assam University in the Barak Valley region of Assam. There are 29 such colleges, each having a sanctioned post of Librarian, and therefore 29 librarians were considered as the sample for the study.

## Research Tools

In accordance with the descriptive survey method, the following tools were used for data collection:

1. A socio-demographic data sheet was used to collect background information of the librarians, such as age, gender, marital status, work experience, and ICT-related exposure.
2. The Technostress Scale developed by Tarafdar et al. (2007), consisting of 23 items across five dimensions; techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty was used to measure the level of technostress among the librarians.
3. A self-constructed questionnaire comprising 15 items measured on a five-point Likert scale was used to assess the physical, psychological, and professional effects of technostress among librarians who exhibited moderate to high

levels of technostress. The content of the questionnaire was reviewed by subject experts to ensure clarity and relevance of the items.

### Data Collection Procedure

After obtaining prior approval from the heads of the respective colleges, data were collected through Google Forms in two stages. In the first stage, the socio-demographic data sheet and the Technostress Scale were administered to all sampled librarians as part of the descriptive survey, and the responses were scored to determine the level and prevalence of technostress. In the second stage, based on the technostress scores obtained, the self-constructed questionnaire was administered only to librarians exhibiting moderate to high levels of technostress to assess its physical, psychological, and professional effects. Accordingly, the findings presented in Table 4 are based

solely on responses from librarians with moderate to high technostress levels.

### Statistical Methods adopted

The data was analysed by using SPSS (version 21). Summarised percentages in tabular forms and bar diagrams were shown to deduce inferences about the sampled librarians.

### Data Analysis

The analysis of data has been shown in four different tables justifying different objectives of the study. The first table represents the response rate of the sampled librarians. The prevalence levels of technostress in the different hierarchies have been displayed in Table 2. The socio-demographic profile of the participants has been charted through Table 3. The last table shows the gradation of responses of the librarians along the different effects of technostress on their quality of life and profession.

**Table 1: Response Rate of the Sampled Librarians**

Particulars	Number
Questionnaires Distributed	29
Questionnaires Received	22
Response Rate (%)	76 %

In Table 1, the no. of distributed questionnaires was 29 and the questionnaires received were 22.

**Table 2: Prevalence of Technostress among College Librarians (N = 22)**

Dimension	High n (%)	Moderate n (%)	Low n (%)
Techno-overload	0 (0.0)	11 (50.0)	11 (50.0)
Techno-invasion	8 (36.4)	11 (50.0)	3 (13.6)
Techno-complexity	0 (0.0)	11 (50.0)	11 (50.0)
Techno-insecurity	1 (4.5)	9 (40.9)	12 (54.6)
Techno-uncertainty	6 (27.3)	12 (54.5)	4 (18.2)
Composite Technostress	2 (9.1)	15 (68.2)	5 (22.7)

In Table 2, the prevalence of the librarians in the composite Technostress score along with the extent of stress in the five dimensions of techno overload, techno invasion, techno complexity, techno insecurity, and techno uncertainty were discussed. From the Table, it has been observed that in the dimension of techno overload, the prevalence of the librarians in the categories of high, moderate and lower levels were found to be 0, 50 per cent and 50 per cent respectively. In the dimension of techno invasion, the prevalence of the librarians in the categories of high, moderate and lower levels were found to be 36.3 per cent, 50 per cent and 13.6 per cent respectively. In the dimension of techno complexity, the prevalence

of the librarians in the categories of high, moderate and lower levels were found to be 0, 50 per cent and 50 per cent respectively. In the dimension of techno insecurity, the prevalence of the librarians in the categories of high, moderate and lower levels were found to be 4.5 per cent, 40.9 per cent and 54.5 per cent respectively. In the dimension of techno uncertainty, the prevalence of the librarians in the categories of high, moderate and lower levels were found to be 27.2, 54.5 per cent and 18.1 per cent respectively. In the total Technostress score, the prevalence of the librarians in the categories of high, moderate, and lower levels were found to be 9 per cent, 68.1 per cent and 22.7 per cent respectively.

**Table 3: Socio-demographic Profile and Levels of Technostress (N = 22)**

Variable	Category	n (%)	High	Moderate	Low
Age (years)	30–40	11 (50.0)	0	9	2
	40–50	7 (31.8)	2	3	2
	50–60	4 (18.2)	0	3	1
Gender	Male	10 (45.5)	1	7	2
	Female	12 (54.5)	1	8	3
Marital Status	Married	17 (77.3)	2	12	3
	Unmarried	5 (22.7)	0	3	2
ICT Training	Yes	12 (54.5)	0	10	2
	No	10 (45.5)	2	5	3

In Table 3, differences in the levels of high, moderate and low prevalence were tabulated on the basis of socio-demographic variables of the participant librarians. In the variable of age, the highest number of respondents belonged to the age group of 30 – 40 followed by 40 – 50 and 50 – 60 years. Almost all the age groups showed moderate levels of Technostress but 2 librarians of the age group of 40 – 50 years showed high Technostress. Females formed a higher proportion

of the participants but showed almost similar Technostress prevalence like males. Most of the librarians have been found to be married along with higher Technostress levels than the unmarried ones. The majority of the participants had a work experience of less than 10 years with moderate levels of Technostress. Those with work experience of more than 10 years exhibited higher Technostress. Librarians showed moderate Technostress even after having previous

ICT experience, while those without any ICT experience also suffered similarly. Those having a diploma or certificate in ICT training formed a major proportion of the sample exhibiting moderate levels of Technostress. Prior COVID-19 pandemic, the majority of the sample never experienced such a technological surge. This justifies the high level of Technostress among the librarians. Those having any sort of similar experience showed moderate levels of Technostress. It was observed that most of the librarians attended refresher courses and workshops on innovations in technology. But stress level was found to be less among those who didn't attend any such kind of workshop. Again, it was seen that those librarians who always multitasked among other activities showed moderately higher Technostress levels than those who

sometimes or never involved in multitasking. The recent pandemic has compelled library personnel to increase their working hours due to shift to online mode. Those who have been actively involved in working overtime showed higher levels of Technostress than those who are not. Stress levels have been found to be higher among those librarians who have attended emotional counseling during the pandemic, the number of which is very few. The feeling of under compensation in the form of salary or appreciation is seen to be directly linked with higher levels of stress as it has been observed to be a common phenomenon among the librarians. Not a single librarian was found to be engaged with other institutions in professional terms, although stress level was still found to be higher.

**Table 4: Effects of Technostress on Librarians (N = 22)**

Sl. No.	Statements showing the effects of Technostress	Strongly Disagree (%)	Disagree (%)	No opinion (%)	Agree (%)	Strongly Agree (%)
1.	My eyes get tired and I have constant pain in certain areas of my body especially along the spine.	0	0	1 (5%)	8 (47%)	8 (47%)
2.	Due to both physical and mental stress, my blood pressure has increased.	0	6 (35%)	0	8 (47%)	3 (17%)
3.	I feel constant anger and irritation when some new task comes in the offing.	1 (5%)	1 (5%)	5 (29%)	3 (17%)	7 (41%)
4.	I have developed an anxiety towards computers both at work and home.	1 (5%)	6 (35%)	2 (11%)	7 (41%)	1 (5%)
5.	Due to lack of motivation, I have developed a negative self-esteem.	2 (11%)	7 (41%)	2 (11%)	6 (35%)	0
6.	Interaction with the users seems like emotional labour to me.	0	3 (17%)	2 (11%)	6 (35%)	6 (35%)

Sl. No.	Statements showing the effects of Technostress	Strongly Disagree (%)	Disagree (%)	No opinion (%)	Agree (%)	Strongly Agree (%)
7.	The tendency to make mistakes has increased due to less concentration and lack of judgement.	1 (5%)	7 (41%)	1 (5%)	6 (35%)	2 (11%)
8.	I have started projecting my faults and blaming others in case of any technological failure and lack in delivery of information.	1 (5%)	3 (17%)	2 (11%)	11 (64%)	0
9.	Information seems overloaded and chaotic causing mental fatigue and depression.	0	2 (11%)	0	2 (11%)	13 (76%)
10.	I am experiencing reduced creativity and a loss of innovative ideas at work.	1 (5%)	9 (52%)	2 (11%)	4 (23%)	1 (5%)
11.	I experience fear and anxiousness of the task being undone online.	0	2 (11%)	1 (5%)	10 (58%)	4 (23%)
12.	I don't feel like working and try to be absent from work at times.	6 (35%)	3 (17%)	4 (23%)	3 (17%)	1 (5%)
13.	I don't feel happy and excited in the library like before.	2 (11%)	3 (17%)	2 (11%)	8 (47%)	2 (11%)
14.	I tend to forget assignments and often get confused between two or more tasks.	0	2 (11%)	0	5 (29%)	10 (58%)
15.	I am experiencing burnout affecting my work output in the library.	0	1 (5%)	4 (23%)	10 (58%)	2 (11%)

Table 4 discusses the rating provided by the students on the specific effects of Technostress on the physical, mental, emotional as well as professional spheres in the library. The participant librarians highly rated most of the statements showing effects like tiredness in the eyes, body pain, blood pressure, irritation, anxiety towards computers, emotional

labour, projection, information chaos, depression, fear and anxiousness of failure, less happiness and excitement, confusion, forgetfulness, and burnout. Those statements indicating negative self-esteem, tendency to make mistakes, reduced creativity and absenteeism were lowly rated.

## Findings and Suggestions

This section presents and discusses the findings of the study in relation to the revised objectives, focusing on the extent of Technostress among college librarians, variations across selected socio-demographic variables, and the effects of Technostress on their physical, psychological, and professional well-being.

### Extent and Dimensions of Technostress among Librarians

The extent of Technostress among college librarians in the Barak Valley was analysed using the Technostress Scale across its five dimensions, namely techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty, along with the composite technostress score. The findings revealed that the majority of librarians experienced moderate levels of technostress, while a smaller proportion exhibited high levels of Technostress.

Among the five dimensions, techno-invasion and techno-uncertainty emerged as the most prominent stressors. The prominence of techno-invasion and techno-uncertainty observed in the present study is consistent with earlier research, which reported that constant technological intrusion and frequent system changes significantly contribute to Technostress among library professionals (Tarafdar et al., 2007; Nadyasari et al., 2022). Similar patterns have also been reported in studies conducted in academic library settings during periods of rapid digital transformation. This suggests that constant technological intrusion into personal life and frequent changes in information and communication technologies significantly contributed to stress among librarians. Other dimensions such as techno-overload,

techno-complexity, and techno-insecurity were present at comparatively lower levels, though they continued to contribute to overall technostress. These findings indicate that rapid digital transitions and continuous technological demands have had a substantial impact on librarians' professional lives.

### Variations in Technostress across Socio-demographic Variables

Variations in Technostress levels were observed across several socio-demographic characteristics of the librarians. With respect to age, younger librarians predominantly exhibited moderate levels of technostress, whereas librarians above 40 years of age reported comparatively higher stress levels. No notable difference in Technostress levels was observed between male and female librarians. Marital status appeared to influence Technostress, with married librarians reporting higher stress levels than unmarried librarians. This may be attributed to the challenge of balancing professional responsibilities with personal and family commitments. Librarians with prior ICT exposure and formal ICT training were relatively better positioned to manage technological demands; however, the sudden and unplanned technological surge during the COVID-19 pandemic contributed to increased stress across all experience groups. These variations in technostress across socio-demographic characteristics are in line with previous studies, which have shown that age, work experience, and ICT exposure influence individuals' ability to cope with technological demands (Panda, 2020; Das, 2019). Studies conducted during the COVID-19 pandemic also reported increased technostress due to sudden digital transitions and extended online work hours (De et al., 2020).

Work-related factors such as increased working hours, online work shifts, and multitasking during peak library hours were found to be major contributors to Technostress. Perceptions of under-compensation and lack of institutional appreciation were also associated with higher stress levels. Engagement with other institutions did not show a significant influence on the level of technostress among the librarians.

### **Effects of Technostress on Librarians**

The effects of Technostress were evident across physical, psychological, and professional domains. Physically, librarians reported symptoms such as eye strain, fatigue, and pain in areas such as the back, joints, and spinal region due to prolonged screen exposure. These physical discomforts were commonly associated with continuous computer-based work. The physical fatigue, psychological anxiety, emotional exhaustion, and burnout reported by librarians in the present study are consistent with earlier research, which identified similar consequences of technostress among information professionals (Kassim et al., 2021; Simon, 2020). These findings further reinforce the association between prolonged technology use and diminished well-being in academic library environments.

Psychologically, librarians experienced anxiety, irritation, depression, and fear related to technological tasks and potential system failures. Many developed apprehensions towards computers and online work, accompanied by constant concern about missing important tasks or information. Excessive technological engagement also led to information overload, confusion, and mental fatigue, which contributed to burnout.

From a professional perspective, technostress affected librarians' work satisfaction and performance. Emotional labour was evident in interactions with users, where librarians felt compelled to maintain a positive disposition despite internal stress. Projection of blame in instances of technological failure was observed as a coping response among some librarians. However, issues such as reduced self-esteem, absenteeism, frequent mistakes, and loss of creativity were reported to a lesser extent, indicating variation in the severity of technostress effects among individuals.

### **Coping Strategies to Counter Technostress**

Based on the findings of the study, the following coping strategies are suggested to help librarians manage and reduce technostress in their professional environment:

#### **Regular ICT training and skill upgradation programmes**

Continuous training in emerging library technologies can help librarians improve their technical competence and confidence. Periodic workshops, refresher courses, and hands-on training programmes enable librarians to adapt more easily to new digital tools, thereby reducing anxiety and uncertainty associated with technological changes.

#### **Ergonomic workplace design and rational task distribution**

An ergonomically designed workplace can minimise physical strain caused by prolonged computer use. Proper seating arrangements, screen positioning, and lighting conditions are essential to reduce physical discomfort. In addition, rational distribution of technical and non-technical tasks among staff members can prevent work overload and reduce stress levels.

## **Institutional recognition and incentive mechanisms**

Recognition of librarians' efforts through appreciation, incentives, or performance-based rewards can enhance motivation and job satisfaction. Positive reinforcement from institutional authorities helps librarians feel valued and encourages a healthier work environment, which in turn reduces stress caused by feelings of underappreciation.

## **Scheduled work breaks and role rotation**

Regular breaks during work hours can help librarians recover from mental fatigue caused by continuous screen exposure. Role rotation, especially in technology-intensive tasks, can reduce monotony and prevent burnout by allowing librarians to engage in varied activities within the library.

## **Stress-management interventions such as meditation and counselling**

Stress-management practices such as meditation, relaxation techniques, and professional counselling can help librarians cope with psychological pressure. Organising wellness programmes and counselling sessions at the institutional level can support librarians in maintaining emotional

balance and resilience in a technology-driven work environment.

## **Conclusion**

Technostress has emerged as a distinct form of stress resulting from the extensive use of new technologies, particularly among academicians, researchers, and students. It refers to the stress experienced by individuals when their technological skills and competencies do not adequately match the demands of rapidly evolving digital environments. Such conditions are increasingly observable in library settings, especially when library professionals are insufficiently prepared for technological transitions in information management and dissemination. The findings of the present study indicate that technostress is evident among college librarians affiliated with Assam University in the Barak Valley. The study also highlights the importance of appropriate coping measures to help librarians manage this form of occupational stress. Overall, the findings underscore the need for institutional support mechanisms and structured capacity-building initiatives to mitigate technostress and sustain librarian well-being in technology-driven academic environments.

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