



# A Research Investigation of Techno Stress in a Learning Environment Enabled by Information and Communication Technologies Among Indian Intellectuals

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**Abstract:** As a result of the proliferation of information and communication technologies, the field of higher education is undergoing rapid technological change (ICT). As a result of developments in information and communications technology (ICT) tools and techniques, social media have emerged as a crucial communication tool and have been discovered to facilitate teaching and learning, particularly in higher education. Therefore, there is a great deal of pressure on academic institutions and teachers to use social networking sites such as Facebook and LinkedIn to engage students and distribute instructional content. These sites consist of Facebook, LinkedIn, and other platforms of a similar nature. This list contains social networking sites such as LinkedIn and Facebook. Utilization of social media and other information and communication technology-based platforms for collaborative learning is becoming a topic of increasing significance in the academic community. This study intends to examine the connection between the causes of technostress, its inhibitors, and its effects among academics in India who work in a collaborative teaching and learning environment. [Bibliography needed] [Bibliography needed] [Bibliography needed] [Bibliography needed] [Bibliography needed] [Cit In the analysis, sociotechnical theory and role principles serve as guiding notions. As a result of the ever-expanding and ever-changing use of technology, there is an increase in the demand for those with a formal education. This study examines the elements that contribute to technostress in the context of the academic environment in India.

**Keywords:** Technostress, Indian Academicians, ICT Pressure

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## 1. Introduction

Since the introduction of computers and other quickly advancing information technology tools, which are all frequently utilized in academic environments, "technostress" has been seen

among academics. Since the introduction of computers, academics have exhibited this fear. Technostress is the unfavorable psychological relationship between modern technology and humanity. When current information and



communication technologies are utilized in the workplace, new work and cooperation patterns may emerge, which may lead to the condition known as "technostress." Technostress happens when employees are unable to adapt to or cope with information technology in a stress-free and healthy manner. They are accustomed to multitasking and have an overpowering urge to be constantly connected to real-time work-related information. They have also evolved a style that allows them to multitask. In addition, many believe they must work faster because the rate of information flow is accelerating and they have limited time for in-depth thought and innovative analysis. This leads individuals to believe they are required to work more quickly. Craig Brodd, an early researcher in the subject of technostress, used the term "technostress" to describe "a modern disease of adaptation caused by a failure to adapt to new computer technology in a healthy manner" in 1984. Technostress is a negative phenomena that can be related to the usage of computing and communication technologies, according to previous research in this sector. This judgment was reached based on the findings of the inquiry that was undertaken.

Since Dr. Craig introduced the concept of "technostress" in 1988,

the rate of technological innovation has clearly accelerated. ICT stands for "information and communication technology," and in today's information-driven culture, it is essential to employ a wide range of ICT. Without the utilization of information and communication technologies, major professional or commercial growth and development is impossible. Information and communication technology (ICT) installation can result in a variety of good results, including but not limited to increased productivity, efficiency, accuracy, space economy, and a reduction in monotony and routine. Alternatively, in order to provide a more realistic explanation of technostress, a number of its defining traits have been discovered. Saradar, Tu, Ragu-Nathan, and Ragu-Nathan described technostress as a problem in adapting to new settings and an incapacity to deal with or adjust to new forms of technology. Five components have been recognized as contributors to technostress:

- The condition known as "techno-overload" refers to situations in which the usage of many technologies compels individuals to complete more work at a faster rate.
- Techno-invasion is the state of being "always exposed," in which people have the feeling that they need to be continuously linked regardless of the location or the time. This sense



can occur anywhere, at any time.

- Techno-complexity is a term that describes situations in which individuals are forced to spend resources on learning and comprehending the use of new applications because of the complexity of the technologies. This is because individuals are forced to learn and use new applications because of the complexity of the technologies.
- The term "techno-insecurity" is used to describe situations in which individuals experience emotions of inadequacy regarding their work in comparison to those of other individuals who are better prepared with new tools and technology.
- The term "techno-uncertainty" refers to a situation in which users of information and communications technology (ICT) experience feelings of apprehension and discomfort as a direct result of the ongoing change and the requirement to update their equipment. As a result of continuous updates and enhancements, the types of experiences that users can have within a particular system are frequently restricted.

There are numerous psychological and physiological effects of technostress on the human body and mind. This sickness is characterized by a decline in job satisfaction, organizational loyalty, and productivity. In addition to a lack of appropriate training and

awareness, an increase in workload, a deficiency in technological standardization, unreliability in obtaining adequate hardware and software, and a deficiency in technological standardization, the rapid advancement of technology is one of the primary causes of technostress.

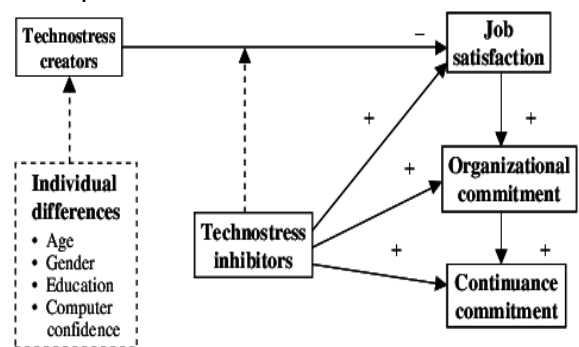
## 2. Literature Review

The utilization of information and communication technologies (ICTs) has developed into an integral part of the everyday routines of each and every person in the 21st century. During those early stages, the majority of early engagements with information and communication technology were limited to occurring within the company. However, because of the growth of information and communications technologies (ICTs), interactions are increasingly commonplace in both the personal and business spheres. As a result of these interactions, individuals are forced to adjust to the usage of information and communication technologies [8]. These adjustments consist of everything from the implementation of ICTs into the working environment to the anxiety that one will become obsolete to the state that is known as technostress [9]. Universities can be found all over the world as famous examples of organizations that make extensive use of information and communications technology (ICT)



capabilities to increase their levels of productivity. It is true that the adoption, fast spread, and use of ICTs in teaching and learning have led to a range of demands and problems, including technostress and job burnout. Even if the benefits of embracing and employing ICTs are without dispute, this is the case. Despite the fact that the benefits of adopting and utilizing information and communications technology are not debatable, this is nonetheless the case. One definition of technostress is a person's incapacity to handle or connect with information and communication technologies in a healthy manner (Brodd, 1984). Technostress can impact not just the health of their personnel, but also their productivity. The great majority of past study on the topic of technostress has been on the plethora of negative consequences linked with this phenomenon. Researchers are continuing this line of inquiry by exploring the effects of technostress, which can be brought on by an information overload as well as a mismatch between tasks and available technologies. The findings from employed individuals indicate that information overload caused by ICTs has a negative impact on technostress, but task-technology compatibility has been shown to lessen levels of technostress. According to the results of a previous study, one of

the most significant difficulties posed by the ongoing technology revolution in the workplace today is the increase in occupational stress. This has been regarded as one of the most significant difficulties. Technostress has also been proved to occur when a person is forced to interact with technology. This stress has negative impacts on a person's mental state, as well as their actions, attitudes, and physical body. The use of advanced ICT technologies, such as computer integrated systems, CD-ROMs, multiple databases, the Internet, and the World Wide Web, has also placed a tremendous demand on academics. Following is an overview of this strain: The labor of academics is burdened by the rigors of the workplace.



**Figure -1 Conceptual Model**

It has been found that the level of satisfaction that is experienced by workers is negatively impacted by the institutions in which they are employed. It has been found that higher levels of stress are linked to poorer levels of organizational

commitment and satisfaction.

In the past, researchers have evaluated data to determine the impact of demographic factors such as education, age, gender, and familiarity with technology on the occurrence of technostress. It was anticipated that people with a higher degree of education would experience less stress when learning how to employ new information and communication technologies (ICTs) and would do so more quickly. However, the evidence did not support this notion. This notion was researched, and its validity was validated by the findings. Therefore, it is logical to predict that clients with a greater level of education will have lower levels of technostress. Regarding the effect that age has on the stress induced by technology, the outcomes of one study may vary significantly from those of another, as well as from one environment to another. According to the findings of Burton-Jones and HUBZone, a person's age has a negative impact on their perception of how simple it is to use technology (2005). However, research into the effects of computer use has revealed that neither computer phobia nor the stress caused by computer use are affected by age. In other words, older individuals do not display a higher incidence of anxiety or phobia over computer use. Various factors influence men and women's decisions to use technology,

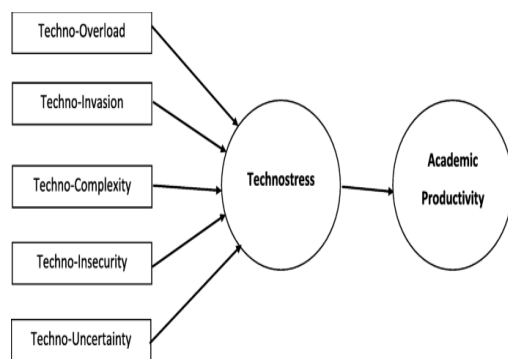
according to studies, and this disparity may be attributable to gender differences. Subjective organizational standards and perceived behavioral control are two factors that have the ability to affect women. Men's worldviews are influenced by their attitudes about and engagement with various sorts of technology. The prevalence of computer use in the workplace exhibits a statistically significant gender gap. In addition, research have revealed that women are more prone than men to experience higher levels of computer anxiety and computer phobia. In addition, research have demonstrated a considerable association between a person's level of technological awareness and the way they interact with computing technology. There is an association between a deeper understanding of computer technology and a reduction in computer-related anxiety and phobias. As a result of the preceding discussion, it has become plainly clear that technological advancements have an impact on both demographics and environmental issues. In the following section, we will explain the theoretical framework that links age, gender, marital status, tenure, and technology awareness to the phenomenon known as technostress.

### 3. Theoretical Framework

This study primarily focuses on the



influence that five significant demographic characteristics, such as gender, age, tenure, marital status, and technical awareness have on individuals who are technostress makers (Techno-overload, Techno-invasion, Techno-complexity, Techno-insecurity, and Techno-uncertainty). The dependent variable is linked to the independent variables in the relationship diagram that can be found in Figure 1. In this approach, demographic elements are considered to be independent variables, whilst the creators of technological stress are considered to be dependent variables.



**Figure-2 Technostress Relationship Diagram**

#### 4. Methodology

Methods for Estimating the Size of a Population and Collecting Samples Utilizing a technique known as surveying, information regarding the demographic profile of academics and the principal technostress producers employed in India's numerous universities and colleges was gathered. To achieve the aims of this empirical study, a sample size

of 300 (N) is being investigated. Only 235 of the 300 questionnaires distributed via email and a social networking site were returned. The remaining questionnaires were all discarded. After a preliminary review of the data, it was determined that only 232 of the questionnaires could be utilized for further statistical investigation. This was due to incomplete, inaccurate, or insufficient data. In light of this, the anticipated response rate for the survey is 78%, validating the established criteria for social scientific research, which are greater than 30%.

#### Measuring Instrument

In addition to demographics scales, the technostress questionnaire (Ragu-Nathan, et al., 2008) is utilized in this research study. The technostress questionnaire is comprised of five components, with a total of twenty items. An earlier investigation that Ragu-Nathan and his colleagues carried out gives evidence that the instrument is reliable and can be relied upon. They came to the conclusion that the Cronbach's alpha (coefficient of reliability) for each of the five components that contribute to technostress generators is higher than 0.75. With the exception of the questions pertaining to respondents' demographic information, all of the questions in the survey were answered using a 5-point Likert scale with the following anchors: 1 =



Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. For the purposes of this study, the information that is collected includes subjects' ages, genders, tenures (lengths of service), marital statuses, and levels of technological expertise. An examination of the demographics and the environment will be carried out using this information. The amount to which an individual is aware of technological

breakthroughs and the various ways in which those improvements can be utilized in their profession is one approach to gauge the level of technological awareness that they possess.

### 5. Data Analysis

Inferential and descriptive statistics are used to present the findings of an examination of the data. The sample is described demographically in Table 1, which may be seen below.

**Table 1. Demographic Information of Sample**

Attribute	Characteristics	N	(% (Approx.))
Gender	Male	134	58
	Female	98	42
Age	Below 35	106	46
	Above 35	126	54
Marital Status	Bachelor	70	30
	Married	162	70
Duration of Service	≤ 5yrs	62	27
	6-15yrs	108	47
	16-25yrs	36	21
	≥ 26yrs	26	5
Technological Awareness	Yes	98	42
	No	134	58

In the following table, which is provided for your reading, the demographic information of the respondents is shown. There were 232 participants that went to the trouble of responding to this survey.

There are a total of 134 male respondents, which accounts for 58% of the total, and there are 98 female respondents, which accounts for 42% of the total. 63% of respondents fall into the age group



that is greater than 35 years old, whilst 37% of respondents fall into the age group that is lesser than 35 years old. 162 of the total respondents, which accounts for 70%, are married, while 70, which accounts for 30%, have never been married and are single. 27% of respondents have worked at the same institute for less than five years, 47% have between 6 and 15 years of experience, 21% of respondents have between 16 and 25 years of experience, and 5% of respondents have worked at the same institute for more than 26 years. 67% of those who participated in the survey can be considered to have some level of technical literacy, which is often referred to as ICT education.

## 6. Discussion

On the basis of the above findings, it has been determined that three demographic characteristics influence technostress significantly. These characteristics include age, gender, and technological proficiency. Because women find it more challenging than men to use technology, male academics are more likely than their female counterparts to feel technological stress. This is due to the fact that women find it more difficult to use technology than males. In contrast to their male counterparts, academicians who identify as female are more likely to employ technology

only when absolutely necessary. Because male academics are more likely to utilize technology than their female colleagues, male academics report having a greater degree of technostress than their female counterparts. The outcomes of prior research are comparable to those of the present study. In contrast, Ahmet Naci  $\check{c}$  and Yusef Levant Shahin's (2011) study on social network users in Turkey found that female users experience greater levels of technostress than male users. Users of social networking sites participated in the study. In contrast, academics with a stronger technology understanding are less likely to experience technostress because they are more secure in their ability to adjust to technological changes and demands. This is owing to their superior knowledge of how technology functions. The results also reveal that older academics are subjected to a higher level of technostress than their younger contemporaries in the same profession. This argument is backed by the notion that younger individuals are more familiar with emerging technology and, hence, report lower levels of technostress. This conclusion was reached by Mahalakshmi and her colleagues after conducting an inquiry among library employees in India. The findings of Ahmet Naci ocular's research conducted in Turkey provide substantial support for our view. In





contrast to this study's findings, Moni Deepa Saradar and Hoiberg's investigation yielded a different conclusion. Because older folks have more life experience, they are less susceptible to technological pressure than younger individuals. There may be a correlation between the diversity in results and the varying degrees to which technology was applied in their career and workplace. In contrast to the research undertaken by Saradar and Hoiberg, which was conducted in an industrial setting, this research is conducted by academics. However, the findings of this study also indicate that academics who have worked for their organizations for longer durations experience lower levels of technostress than academics who have worked for their companies for shorter durations. This research contradicts the idea that academics who have been employed by their organizations for a shorter amount of time feel a higher level of technostress. This may be the case initially due to the fact that academic institutions have greater experience dealing with comparable businesses and a higher understanding of the technologies already in use. Second, a person who has worked at the same academic institution for a longer duration may have greater influence within the company. As a result, the worker may be able to choose from a bigger variety of possibilities and have greater control over how he employs

the technology, which may allow him to reduce some of the strain connected with the use of technology in academic institutions. Both Saradar and Hoiberg presented data that were comparable and compatible with one another. Academicians with a greater awareness of technology (i.e., those with a formal education in information technology) are more exposed to technology and, as a result, reported a lower degree of technostress. Moreover, students learn that it is much simpler for them to adapt to the fast changing technology environment of the academic setting. Academics who have had information technology (IT) training and have worked with computers for a longer period of time report lower levels of technostress. This is due to the fact that they are more accustomed to keeping up with technical developments, upgrades, and alterations (IT). In addition, they have a better understanding of how the company's culture will adapt to upcoming changes in technological trends and how these transitions will impact the business. In the end, it was established that married academicians posed no substantial influence on technostress compared to single academicians. Similar findings have been reported from prior investigations.

### **Conclusion**

The purpose of this study was to determine the extent to which



demographic and environmental factors contribute to the high levels of technostress reported by India's intellectuals. According to the study's findings, the phenomenon known as "technostress" is greatly influenced by several factors, each of which makes a substantial contribution. This evaluation is based on a variety of characteristics, including age, gender, technological proficiency, and service length, to name a few. There is no correlation between academics' marital status and the level of stress caused by technological advancements in their fields. Despite the fact that all groups are exposed to equal quantities of stress, this is the case. It is believed that the findings of this study would provide educational institutions with a means of mitigating the stress caused by the constant development of technology. Given the rapidly changing trend in ICT and the increasingly fast-paced and stressful work environment, it seems reasonable to develop training and wellness programs with the objectives of reducing academicians' stress levels and enhancing their technological mastery and sense of personal worth in the context of Indian conditions. Moreover, it is desirable to design such programs with the goals of reducing academics' stress levels and

boosting their sense of self-worth. This makes sense given the rapidly changing trends in information and communications technology and the more stressful character of the modern workplace.

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