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Techno Stress - An Ebullition or Not

Pooja Sareen

Assistant Professor, Post Graduate Government College, Sector-46b, Chandigarh, India

Abstract: ***Technology is dominating the lives of people of all ages and is used for various activities like watching movies, listening to music, surfing important information on various topics, get connected to peers through social media. In this paper an attempt is made to study the Techno Stress creators among Teaching and Non Teaching Staff working in colleges in and around Chandigarh region. For analysis and interpretation Mean, Standard Deviation, f analysis and One Way Annova was applied and results revealed that there is no significant relationship between Techno stress creators and designation.***

Keywords: Techno Stress creators, surfing important information, use of technology, . higher education, ways of coping,, symptoms of stress

1. Introduction

The present era is popularly known as the computer or digital era as all work nowadays is carried in a networked environment with more and more use of technology. Since the computer has turned out to be very essential to the modern life that nowadays it is considered to have become incomplete and meaningless without technology. One can easily get connected to the network through it and collect all the information on various issues from different parts of the world without much effort. Moreover, technology is dominating the lives of people of all ages and is used for various activities like watching movies, listening to music, surfing important information on various topics, get connected to peers through social media and for carrying all sorts of sports activities. It also helps in preparing important office documents and research oriented writings. One can send emails, do chatting, video-conferencing and socially interact with outside world with just a click. In business also it is very helpful as we can find sources for information on various business related issues and find solutions to all difficult operational and mathematical problems. So, we need to embrace it and learn how to use new emerging technologies to work effectively for accomplishment of organizational and personal goals. In higher education the use of technology has been becoming important. All the work is becoming online with the coming of the concept of e learning. Teachers are also required to maintain all the record and teach in smart class rooms with the advent of technology. With the more and more use of technology stress levels among the academicians has also increased which has lead to the necessity of the study of the symptoms of stress level and ways of coping it. Previous studies have shown that information communication technologies may be related to stress, but the specific kinds of stress related issues have not been fully researched. Following are the various techno stress symptoms given by various authors:

2. Techno Stress

Technostress is the negative psychological relationship between people and technology. It is the association that is being brought about by employing information technologies at work places and a outcome of habits indulging from its undue usage.

Employees working in various organizations experience technostress when they are not able to adapt to or cope with information technologies in a healthy, efficient and effective manner. They feel techno stress when are forced to respond to work-related information promptly, are engaged in multitasking and are required to be connected to share constant updates. With the advent of technology, employees are required to work faster as the information flows faster. They have less time to spend on sustainable thinking and creative analysis for being more resourceful to an organization.

So, it is evident from above that computer affects the work related environment and the individuals too who are working in that environment. Individual is not only related to stress form the use of computer but stress is also felt due to the use of other technologies in various day to day activities like mobile phones, I Pad, faxes and email he receives. He can also be prone to stress if he is not able to cope up with the job requirements.

3. Literature Review

Technostress according to **Brod (1984)** manifests itself in two distinct and related ways: in the struggle to accept computer technology and in the more specialized form of over identification with computer technology.

Kupersmith, (1992) says that the internet is probably becoming the major causes of technostress due to the fact that many of new information sites with no standard to how they are designed maintained and updated. Dealing with the information overload is a real problem.

Arnetz and Wiholm, (1997) says that in the 21st century, most jobs require some type of technological interaction whether it is in an office or in the field. Interaction with computer systems is inevitable and can create technostress that can lead to ineffectiveness in the workplace as well as health problems. These health problems lead to missed work, absents and loss in productivity. Organizations need to understand these issues and implement solutions.

Kupersmith, (2003) in his survey discovered that information overload, networking problems, security issues, computer hardware and software, ergonomics and vendor-

produced databases as leading causes of technostress for them. Common symptoms of technostress may include: feelings of isolation and frustration; negative attitudes toward new computer based sources and systems; indifference to users' computer-related needs; self depreciating thoughts or statement about one's ability to cope; an apologetic attitudes toward users; and a definition of self as not a computer person. All these may result in the poor job performance by the library and information science professionals which would in turn lead to low library users' satisfaction.

Brillhart, (2004) says that stress has been a major issue for organizations, and employers must deal with it in order to be productive at work. The anxiety and tension can also come from the inability to use the technology that leads to a disadvantage over other workers who do use the technology effectively. The non-users become less competitive compared to their counterparts.

Strang, (2004) It is possible for these factors to be influenced by management, but this idea was not addressed in the literature. These factors were more associated with work-related stress and not technostress, specifically.

Scott and Timmerman, (2005) viewed that stress is most industry in the informational technology field. These IT professional learn how to cope with the technostress by identifying the root cause of the stress and implementing coping strategies such as learning the functionalities and increasing training on the technology to help mitigate the technostress.

Tarafdar et al., (2007) explains that technology factors such as techno-overload, techno-invasion, techno-complexity, techno insecurity and techno-uncertainty can have affect on technostress. These six factors have been shown to have a strong relationship with technostress, but one area that was not addressed in the literature is the role of management influence.

Thomee et al. (2007) demonstrates that technostress can cause depression and sleeping issues. This in turn can affect many other aspects of life such as work and family. Technostress can also affect work performance.

Al-Fudail and Mellar, (2008) conducted their study in educational field. According to him in the past decade, teachers have become exhibiting technostress because of the application of technology in their schools. Knowing that technology can have an adverse effect on the teachers, schools have implemented processes to aid the teachers in reducing technostress. This includes more technology training, practicing before using the technology, changing teaching styles, and classroom management training.

Tiemo, Pereware Aghwotu and **Ofua, Justice Owajeme, (2010)** in their paper **"**Technostress: Causes, symptoms and coping strategies among Librarians in University libraries" examine the causes, symptoms and coping strategies of technostress among librarians in university libraries. Their study revealed that majority of the librarians experienced technostress as a result of technological changes. And to cope with technostress in their various working places, they agreed to the various coping strategies and plans.

Barley, Meyerson and Grobal (2010) In his article, *Email as a Source and Symbol of Stress* reviewed the increasing volume of email and other technological communications that are regarded as a growing source of stress in people's lives. Research suggests that this new media provides people additional flexibility and control by enabling them to communicate anywhere at any time. However, the authors' research builds theory that unravels this contradiction. Instead, email and other forms of communication led people to feel overwhelmed and unable to cope with the stress.

4. Objectives of the Study

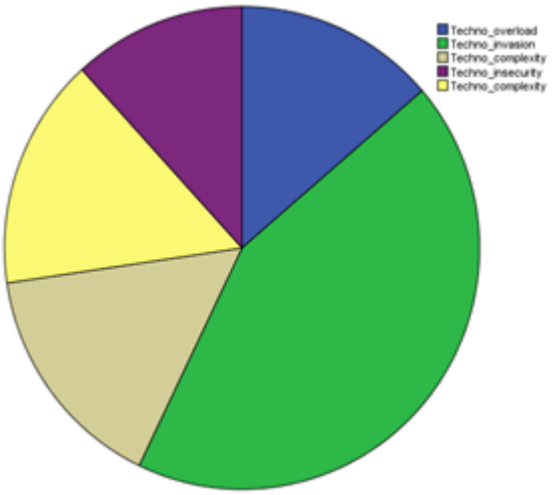
The objectives of the study are:

1) To outline technostress creators among college teaching and non teaching staff
2) To establish the relationship between Techno Stress Creators and Qualification.
3) To establish the relationship between Techno Stress Creators and age.

Techno Stress Creators or Components

The study highlighted five main components of Techno Stress:

- **Techno-overload:** Techno overload describes that the use of technologies forces people to work more at faster pace.
- **Techno-invasion:** Techno invasion is a situation where people feel the need to be constantly connected to technology irrespective of place and time.
- **Techno-complexity:** Techno complexity is a situation where the complex technologies force people to spend recourses in learning and understanding the use of new applications and to update their skills.
- **Techno-insecurity:** Techno insecurity deals with situations where people feel insecure about their jobs while working with other people, whom they think are better equipped with new tools and technologies.
- **Techno-uncertainty:** Techno uncertainty is a situation where technology users feel uncertain and unsettled as technology is continuously changing and needs upgrading due to short life cycles of computer systems.



5. Problem Formulation

Universities all over the world are among the major organizations where Information and Communication Technologies are being used on a large. However, in spite of various benefits of Technology, it is also true that the adoption and utilization of technology have brought about a number of demands and challenges such as technostress and job burnout into workplace. In the field of education the use of technology has been increasing. So an attempt will be made to study the causes or factors of stress among teaching and non teaching staff working in different colleges in and around Chandigarh.

6. Research Methodology

6.1Research Problem

The research problem is to study all the aspects related to Techno Stress Creators for which statement of problem would be:-

- Causes of technostress among college professionals
- Relationship between Techno Stress Creators and Qualification.
- Relationship between Techno Stress Creators and age.

6.2 Research Design

The research type will be **exploratory** research because the entire research is based on questionnaire and analysis and an attempt is made to establish priorities, develop definitions and improve the research design. Moreover, there will be detailed description in the research, so this will be descriptive design. The demographic variables taken in the study are designation and age of employees working at Teaching and Non Teaching levels.

6.3 Sampling Unit and Sampling Size

The sample for the present study would comprise of around 300 employees from whom 200 employees are working at Teaching level and 100 at Non teaching level. The participants would be selected using probability method i.e. **stratified sampling** technique, wherein the strata would be of only the Teaching employees and Non teaching employees, and the selection of sufficient subjects would be done randomly from these stratums, which would be the exact representation of the population. The participants would be Teaching and Non Teaching staff working in Colleges and Management Institutes in Chandigarh Region.

6.4 Data Sources

The research plan can call for gathering secondary data as well as primary data. Secondary data consists of information that already exists somewhere having been collected for another purpose. It will be collected from books, magazines, Journals, periodicals and libraries. Information will also be collected through various websites Primary data consists of original information gathered for specific purpose. **.** To collect primary data the questionnaire will be developed to measure the level of techno stress, causes of techno stress and ways of coping techno stress.

In this study, to collect primary data the questionnaire will be developed to measure the causes of techno stress and ways of coping techno stress among the Teaching and Non teaching staff working in Government colleges, Private colleges and Management Institutes. The five core questions will be measured by statements using seven 5 points of Likert Scale. The seven 5 points is explained below.

1 = Strongly Disagree
2 = Disagree
3 = Moderate
4 = Agree
5 = Strongly Agree

6.5 Sampling Technique

In this study we specifically include the academic and Non Academic staff of Government colleges, Private colleges and Management Institutes in our research. The hypothesis will be formed and tested using various methods like Mean, Standard Deviation, and F Test and One Way Anova.

7. Analysis and Interpretation

In this research we had collected data from Teaching and Non Teaching staff working in Government colleges, Government aided colleges and Management Institutes. The sample taken was from 300 employees from whom 200 employees are working at Teaching level and 100 at Non teaching level. Hypothesis was formed and analyzed using the software SPSS 21.

Hypothesis 1: There is a statistically significant relationship between technostress creators and Qualification

	QUALIFICATION	N	Mean	Std. Deviation	Std. Error
TECHNO OVERLOAD	Graduates	31	10.0968	3.40935	.61234
	Post Graduates	158	10.3354	3.32068	.26418
	Research Degree	109	10.7982	3.67872	.35236
	Others	1	14.0000	.	.
TECHNO INVASION	Graduates	31	32.2903	9.75429	1.75192
	Post Graduates	157	32.5987	12.32824	.98390
	Research Degree	109	34.3119	11.85616	1.13561
	Others	1	52.0000	.	.
TECHNO COMPLEXITY	Graduates	31	13.0000	3.44480	.61870
	Post Graduates	158	11.7152	3.27914	.26087
	Research Degree	109	11.9358	3.89272	.37285
	Others	1	11.0000	.	.

TECHNO INSECURITY	Graduates	31	9.7097	3.04624	.54712
	Post Graduates	158	9.0886	2.65027	.21084
	Research Degree	108	8.6481	3.05805	.29426
	Others	1	13.0000	.	.
TECHNO UNCERTAINITY	Graduates	31	9.2903	2.20897	.39674
	Post Graduates	158	8.9747	2.13538	.16988
	Research Degree	109	8.9450	2.34850	.22495
	Others	1	12.0000	.	.

ANOVA Table

		Sum of Squares	df	Mean Square	F	Sig.
TECHNO OVERLOAD	Between Groups	31.238	3	10.413	.867	.458
	Within Groups	3541.491	295	12.005		
TECHNO INVASION	Between Groups	569.603	3	189.868	1.337	.262
	Within Groups	41745.501	294	141.992		
TECHNO COMPLEXITY	Between Groups	43.647	3	14.549	1.166	.323
	Within Groups	3680.734	295	12.477		
TECHNO INSECURITY	Between Groups	46.210	3	15.403	1.901	.129
	Within Groups	2381.776	294	8.101		
TECHNO UNCERTAINITY	Between Groups	12.031	3	4.010	.811	.488
	Within Groups	1457.956	295	4.942		

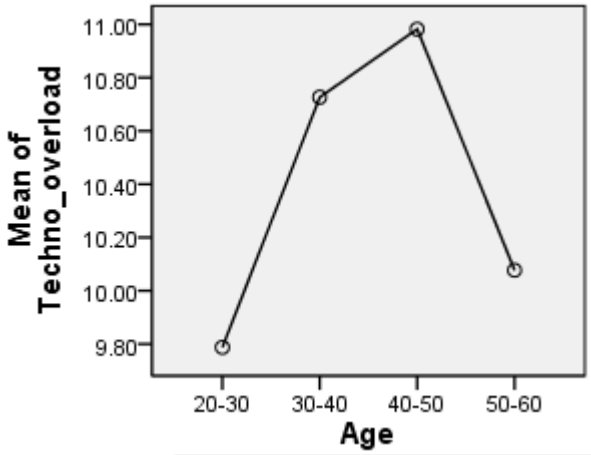
On the basis of Qualification, employees were categorized as Graduates(31), Post Graduate Degree holders (158), research Degree holders(109) and one with additional qualification(1) other than job specification. The one holding an extra qualification feel more Techno Invasion , Techno Overload ,Techno insecurity and Techno uncertainty followed by Employees holding a research degree, feeling more Techno overload (Mean 10.7982 Sd. Deviation 3.6787) and Techno Invasion (Mean 34.3119Sd. Deviation 11.85616) and employees having only a Graduate degree (mostly from engineering colleges) feel more Techno complexity (Mean13.0000 Sd. Deviation 3.44480), Techno insecurity (Mean9.7097 Sd. Deviation3.04624) and Techno uncertainty (Mean 9.2903 Std.Deviation 2.20897). Difference in means would be just due to chance as all the p values for all the variables were found more than .05 at 5% level of significance.

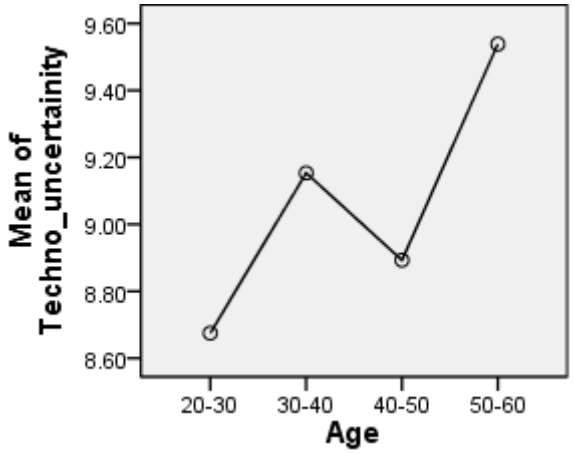
H2: There is a statistically significant relationship between technostress creators and age

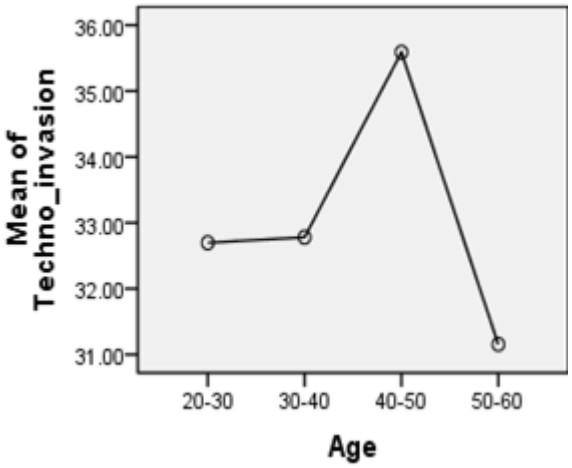
	AGE	N	Mean	Std. Deviation	Std. Error
TECHNO OVERLOAD	20-30	80	9.7875	3.64811	.40787
	30-40	150	10.7267	3.48515	.28456
	40-50	56	10.9821	3.09540	.41364
	50-60	13	10.0769	3.12147	.86574
TECHNO INVASION	20-30	79	32.6962	14.54027	1.63591
	30-40	150	32.7800	11.05803	.90288
	40-50	56	35.5893	10.53958	1.40841
	50-60	13	31.1538	9.54678	2.64780
TECHNO COMPLEXITY	20-30	80	11.4000	3.43327	.38385
	30-40	150	11.6733	3.29632	.26914
	40-50	56	12.7500	4.02379	.53770
	50-60	13	14.0769	3.42689	.95045
TECHNO INSECURITY	20-30	80	9.2875	3.17504	.35498
	30-40	149	9.0268	2.74095	.22455
	40-50	56	8.8036	2.81825	.37660
	50-60	13	8.0000	2.23607	.62017
TECHNO UNCERTAINITY	20-30	80	8.6750	2.36951	.26492
	30-40	150	9.1533	2.16667	.17691
	40-50	56	8.8929	2.12071	.28339
	50-60	13	9.5385	2.14536	.59502

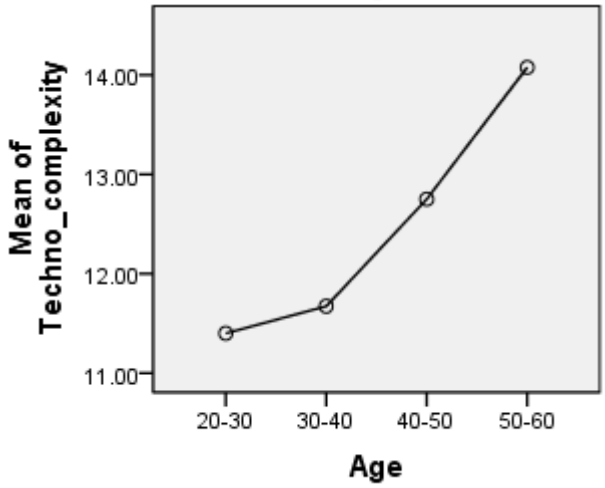
ANOVA Table

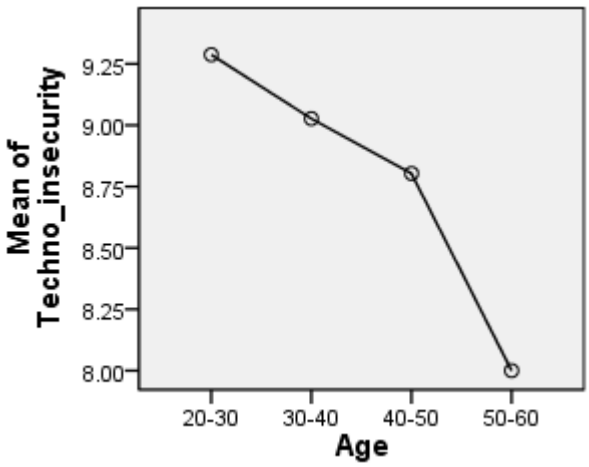
		Sum of Squares	df	Mean Square	F	Sig.
TECHNO OVERLOAD	Between Groups	63.656	3	21.219	1.786	.150
	Within Groups	3505.086	295	11.882		
TECHNO INVASION	Between Groups	420.560	3	140.187		
	Within Groups	41913.695	294	142.564	.983	.401
TECHNO COMPLEXITY	Between Groups	129.762	3	43.254	3.563	.015
	Within Groups	3581.616	295	12.141		
TECHNO INSECURITY	Between Groups	21.850	3	7.283		
	Within Groups	2405.119	294	8.181	.890	.446
TECHNO UNCERTAINITY	Between Groups	16.375	3	5.458	1.114	.344
	Within Groups	1445.611	295	4.900		











For studying the relationship between Techno stress creators and age, age was categorized into four groups naming 20-30 yrs (80 employees), 30-40 yrs (150 employees), 40-50 yrs (56 employees) and 50-60 yrs(13 employees). In all 299 employees responded. Mean, St Deviation and One Way Annova was computed to analyze the results. Study revealed that employees between the age group 40-50 feel more Techno Overload (Mean10.9821Std. Deviation 3.09540) and Techno Invasion (Mean35.58939 Std. Deviation 10.53958). Employees with Age group 50-60 feel more Techno Complexity (Mean Std. 14.0769 Deviation 3.42689) and Techno Uncertainty (Mean 9.5385Std. Deviation 2.14536) and the younger staff between the age group of 20-30 feel more Techno Insecurity (Mean9.7875 Std. Deviation 3.17504). Results of younger staff vary a lot with high St. Deviation for almost all the factors. Further, after applying One Way Annova it was found that p value for all the variables is insignificant. So, it can be said that difference in means are purely due to chance.

8. Conclusion

Technostress is the negative psychological relationship between people and technology. Employees working in various organizations experience technostress when they are not able to adapt to or cope with information technologies in a healthy, efficient and effective manner. With the advent of technology, employees are required to work faster as the information flows faster. So, it is evident from above that computer affects the work related environment and the individuals too who are working in that environment. Individual is not only related to stress form the use of computer but stress is also felt due to the use of other technologies in various day to day activities like mobile phones, I Pad, faxes and email he receives. In this study, to collect primary data the questionnaire will be developed to measure the techno stress creators among the Teaching and Non teaching staff working in Government colleges, Private colleges and Management Institutes. The questions will be measured by statements using 5 points of Likert Scale. The hypothesis will be formed and tested using various methods like Mean, Standard Deviation, and F Test and One Way Annova. Results revealed that there is no significant relationship between Techno stress creators and demographics (i. e Age and Designation).

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