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► **To cite this version:**

Zainah Qasem, Ali Abdallah Alalwan, Zaid Mohammad Obeidat, Raeda Alqutob. The Effect of Technostressors on Universities Teaching Staff Work Performance During COVID19 Pandemic Lockdown. International Working Conference on Transfer and Diffusion of IT (TDIT), Dec 2020, Tiruchirappalli, India. pp.538-543, 10.1007/978-3-030-64861-9\_47 . hal-03744821

**HAL Id: hal-03744821**

**<https://inria.hal.science/hal-03744821>**

Submitted on 3 Aug 2022

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## **The Effect of Technostressors On Universities Teaching Staff Work Performance During COVID19 Pandemic Lockdown**

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**Abstract** the World Health Organization declared the COVID19 pandemic in March 2020 as one of the most rapid outbreaks in known human history (Groset al, 2020). To adapt to the new situation, universities around the world have activated online learning plans using information communication technology (ICT). The teaching staff had to adapt to using ICT rapidly and to turn their homes into a working station. Being bombarded with all the changes it is believed that like all workers using ICT teaching staff is suffering technostress coming from different techno stressors associated with the use of ICT during the complete lockdown. This paper is a call to start studying the effect of techno stressors on university teaching staff work performance. In this paper, we are suggesting a transactional model of stress as a theoretical background to understand the way teaching

Keywords: technostress, COVID19, work performance, transactional model of stress

### **1 Introduction**

The World Health Organization declared the COVID19 pandemic in March 2020 as one of the most rapid outbreaks in known human history (Groset al, 2020). To face this pandemic governments and countries around the world began to implement strict measures that amounted to complete lockdown. For example, Jordan was one of the

first countries to impose a countrywide round-the-clock curfew which started in March 2020 with no exact duration (Alsharif, 2020, Younes, 2020).

Despite the complete lockdown of all sectors, universities had to continue delivering their service and have moved from full on-campus learning to fully online learning.

Through using information communication technology (ICT) universities have been able to solve a large part of the crisis and to deliver education to students in isolation (Q.S, 2020).

The massive move to online learning forced thousands of university educators (teaching staff) to work from home and to adapt to using different online platforms, and to conduct an interactive education in a very short period (Q.S, 2020).

Although Using online platforms is not new to university educators especially teaching staff, the new situation forced teaching staff to use online platforms to perform major activities such as giving live lectures and managing discussion forums in a very short period. The teaching staff was also forced to increase their existence on social media platforms.

Using different online platforms and being available through social media has created an unfamiliar situation for teaching staff. For example, Under the new circumstance teaching staff are frequently interrupted by students' instant messages on official platforms and social media during and out of working hours. These factors imitate frequent interruptions and technology intrusiveness (Ayyagari et al. 2011; Tarafdar et al. 2011) which represents technostress creators and will lead to technostress- a state of stress caused by the use of ICT (Gaudioso et al, 2017)

Technostress at the workplace has been shown to negatively affect employees psychologically and physiologically which adds financial burdens to the company (Macik-Frey et al. 2007). However, very little is known about what type of techno stressors occur while working from home in university teaching context, the effect of induced technostress on teaching staffs' performance, and how teaching staff deal with resulted technostress. Hence, this conceptual paper comes to propose some prepositions to address the effect of the rapid adoption of online platforms by university educators on their performance.

In this paper, we are proposing a research direction based on the transactional model of stress that explains how to identify the positive or negative effect of technostress while working from home on university educators.

The following parts of this paper are organized as the following. First, we will explain the concept of technostress and techno stressors based on the related literature. The second part of the paper will present the transactional model of stress as a theoretical background followed by an introduction to the proposed conceptual model. Finally, we will suggest a methodology plan.

## **2 Literature review**

### **2.1 Technostress**

Research on technostress and related topics such as technostress creators, inhibitors, and outcomes arise to look at the other side of technology, the dark side. Contrary to

the prevailing research which views ICT as full of benefits, this part of the literature places most of its focus on the negative effect of ICT on individuals' mental and physical health (Tarafdar et al., 2010).

Lazarus defined Stress as a vast spectrum of problems that "stimuli producing stress reactions, the reactions themselves, and the various intervening processes" (Lazarus, 1966, p. 27). Technostress is one form of stress (Hudiburg, 1989) that was introduced by Craig Brod and defined as "a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner" (Brod, 1984, p. 16). Rosen (1997) has also introduced technostress as a direct or indirect effect of dealing with ICT on users' cognition, emotions, and thoughts.

With the development of technology and its penetration into the life of modern man, there was a need to further study technostress causes and impact in different fields such as organizations and working environment (Bradshaw and Zelano, 2013).

While Brod's definition of technostress implies negativity a more neutral definition was suggested by Lei and Nagi (2014) where they defined technostress as "as the state of mental or physiological stimulation caused by the ICT usage for work purpose, which is usually attributed to increasing work overload, accelerated tempo, and erosion of personal time, among others" (Lei and Nagi, 2014, p3). Being forced to work from home and to rapidly adopt different forms of ICT including the eLearning platform and social media for teaching is a new situation for university teaching staff. The effect of the latter is still unclear on the university educator's satisfaction and commitment. Hence, in this conceptual paper, we will adopt a lei and Nagi (2004) definition of technostress.

## **2.2 Techno stressors**

In this paper, we will focus on understanding the effect of technostress creators (techno stressors) associated with the rapid adoption of online learning ICT during the lockdown on university educator's (teaching staff) performance.

Techno stressors are the causes of technostress (Ayyagari et al., 2011) which presence and intensity form technostress (Gaudioso et al, 2017). There are some known techno stressors that are found in the workplace. For example, lack of experience with technology and lack of training were marked as the top caused by technostress (Ahmad and Amin, 2012). Tarafdar et al. (2019) suggested that some technologies are invasive in nature (e.g. instant messaging technologies), overloading (e.g. smartphones which allows work to overwhelm individuals through continuously communicating demands), described as fast-changing and insecure. Technologies with such characteristics were described as techno stressors.

Being forced to move to full online learning within a very short period is a new situation for university educators. Hence, we will assume that there is a possibility that university educators are facing all types of stressors.

## **2.3 Technostress in education**

The topic of technostress and the effect of techno stressors on variables such as workers' performance and satisfaction, is a fairly recent topic in the literature. Although

most studies focused mainly on the effect of techno stressors on workers in private and government organizations educators (Wang and Li, 2019), there is an urgent need to understand the impact of technology in the university education sector.

The large investments made by universities and higher education institutions in ICT and online learning platforms brings many benefits for universities and higher education institutions. These benefits include higher reachability and convenience. For example, students from all around the world can join these universities without the need to travel (Wang and Li, 2019). However, and similar to any other job where ICT is introduced to the working system, university educators are facing new challenges related to ICT at their workplace and are prone to technostress. Hence, there is a need to understand the effect of using ICT and online learning on the university teaching staff.

Previous studies on techno stressors' effect on university educators mainly revolved around two topics. first is the effect of techno stressors on the non-teaching staff of universities such as librarians. Secondly the effect of using ICT inside classrooms on the university teaching staff. Ahmad and Amin (2012) have examined the level of technostress among academic librarians in Malaysian public universities. In their study, Ahmad and Amin (2012) measured the level of existence of techno stressors among academic librarians. The results of their study showed that only techno-uncertainty was at a high level. This indicates that not all techno stressors will lead to negative outcomes. In a second study, Jena (2015) studied the effect of techno stressors job satisfaction among Pakistani university librarians. In his study, Jena (2015) reported a positive significant relationship between three techno stressors and job satisfaction among Pakistani university librarians.

Lin and wang (2020) explored the relationship between specific technostress inhibitors, techno stressors, and strains on university teachers' work performance in higher education. The main focus of this study was on the ICT used in classrooms. The results of this study showed that some techno stressors (work performance, techno-complexity, and techno-insecurity) had a negative significant influence on performance while other techno stressors (techno-overload) have a significant positive effect on performance. The empirical results of these studies indicate that techno stressors have both positive and negative effects on work performance.

The lack of studies that clarify the potential type of techno stressors, and the effect of each techno stressor on teaching staff work performance in the time of lockdown, brings a gap in the literature that we will try to bridge in this study.

### **3 Theoretical background and propositions**

The way techno stressors are processed differs from one person to another. Hence, the outcome of techno stressors varies among individuals, while it might bring positive outcomes to some individuals it might bring negative outcomes among others (Newton and McIntosh, 2010).

To explain this variation in outcomes we will use the transactional model of stress. The transactional model of stress assumes that stress is a result of an imbalance between

demands and resources (Lazarus and Folkman, 1984). When a person is faced with a stressor that surpasses his or her abilities or resources, the individual will appraise the nature of the stress and determine his or her interactions with the identified stressors (Lei and Ngai, 2014).

The transactional model of stress consists of two stages of the appraisal. The first stage is assessed by the level of which the stressor will bring harm to the individual and cause stress. If the individual believes that the stressor will potentially cause harm a secondary appraisal will take place (Lazarus and Folkman, 1984). In this stage, the individual will compare the stressor against his ability to cope with it. Hence, we propose the following propositions

Proposition 1: effect of various techno stressors on university teaching staff work performance is mediated by perceived technostress

Proposition 2: unmanageable technostress will weaken the relationship between techno stressors and teaching staff performance

Proposition 3: manageable technostress will strengthen the relationship between techno stressors and teaching staff performance

#### **4 Proposed Research Methodology**

This research aims to study the effect of techno stressors on the work performance of university educators during the time of compulsory online learning shift and delivering a full curriculum from home. Therefore, the sample of this study will be the university teaching staff who participated in the shift to online teaching during the time of the COVID 19 pandemic. A mixed-method strategy is recommended for this research. The first part of this study will aim at understanding what types of techno stressors university educators are exposed to. To collect this data, we are proposing qualitative research. A one to one interview will be conducted with an adequate number of university teaching staff to collect different techno stressors. The second part of this research will be qualitative survey-based research. This research aim is to measure the effect and to determine the direction of the relationship between the proposed techno stressors and work performance among university educators.

#### **5 Research outcome**

This research is coming at the time of COVID 19, which continues to affect university education dramatically. As online learning might continue until the

pandemic is contained it is becoming more important to understand its effect on teaching staff. Similar to any job that relays on ITC it is expected that teaching staff will be faced with techno stressors and will suffer from technostress. Therefore, it is very important to understand the effect of developed technostress on teaching staff performance. This research is expected to enrich the literature of technostress by investigating new types of techno stressors and technostress in university education domain, and to provide universities' management with an insight to what type of techno stressors teaching staff will face, and how they are coping with it. The outcomes of this research is expected to help universities' management in creating training and support plan to overcome the effect of techno stressors.

### References

- Ahmad, U.N.U. and Amin, S.M., 2012. The dimensions of technostress among academic librarians. *Procedia-Social and Behavioral Sciences*, 65, pp.266-271.
- Al-Ansari, M.A. and Alshare, K., 2019. The Impact of Technostress Components on the Employees Satisfaction and Perceived Performance: The Case of Qatar. *Journal of Global Information Management (JGIM)*, 27(3), pp.65-86.
- Alsharif, O. Al-Monitor. Jordan eases lockdown, focuses on opening economy. (online) (12.5.2020) available at :<https://www.almonitor.com/pulse/originals/2020/04/jorda-coronavirus-ease-lockdown-economy-aqaba-.html>
- Ayyagari, R., Grover, V., and Purvis, R. 2011. "Technostress: Technological Antecedents and Implications," *MIS Quarterly* (35:4), pp. 831-858.
- Bradshaw, R. and Zelano, J.A., 2013. Exploring themes of technostress for end users working with hardware and software technology. *Retrieved on July*.
- Gaudioso, F., Turel, O. and Galimberti, C., 2017. The mediating roles of strain facets and coping strategies in translating techno-stressors into adverse job outcomes. *Computers in Human Behavior*, 69, pp.189-196.
- Gros, C., Valenti, R., Valenti, K. and Gros, D., 2020. Strategies for controlling the medical and socio-economic costs of the Corona pandemic. *arXiv preprint arXiv:2004.00493*.
- Hudiburg, R.A., 1989. Psychology of computer use: VII. Measuring technostress: Computer-related stress. *Psychological Reports*, 64(3), pp.767-772.
- Jena, R.K., 2015. Technostress in ICT enabled collaborative learning environment: An empirical study among Indian academician. *Computers in Human Behavior*, 51, pp.1116-1123.

Khan, A., Rehman, H. and Rehman, D.S.U., 2016. An empirical analysis of correlation between technostress and job satisfaction: A case of KPK, Pakistan. *Pakistan Journal of Information Management and Libraries*, 14.

Lazarus R.S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

Lei, C.F. and Ngai, E.W., 2014. The double-edged nature of technostress on work performance: A research model and research agenda.

LAZARUS, R. S. (1966) *Psychological stress and the coping process*. New York: McGraw-Hill. LEE, R. (1970) *Social attitudes and the computer revolution*. *Public Opinion Quarterly*, 34, 53- 61

Li, L. and Wang, X., 2020. Technostress inhibitors and creators and their impacts on university teachers' work performance in higher education. *Cognition, Technology & Work*, pp.1-16.

Locke, E.A. (1976). The nature and causes of job satisfaction. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp.1297-1349). Chicago: Rand McNally.

Macik-Frey, M., Quick, J. C., and Nelson, D. L. 2007. *Advances in occupational health: From a stressful*

*beginning to a positive future*. *Journal of Management*, 33, 809-840.

Newton, A.T. and McIntosh, D.N., 2010. Specific religious beliefs in a cognitive appraisal model of stress and coping. *International Journal for the Psychology of Religion*, 20(1), pp.39-58.

Q.S 2020 How Universities are Embracing Online Learning During the Coronavirus outbreak (online) (12.5.2020) available at : <https://www.qs.com/how-universities-are-embracing-online-learning-during-the-coronavirus-outbreak/>

Somvir, S.K. and Kaushik, S., 2012. Job satisfaction among library professionals in Haryana state. *International Journal of scientific and research Publications*, 2(5), pp.1-4.

Tarafdar, M., Tu, Q., & Ragu-Nathan, T. S. (2010). Impact of technostress on end user

satisfaction and performance. *Journal of Management Information Systems*, 27, 303-334.

doi:10.2753/MIS0742-1222270311

Tarafdar, M., Tu, Q., Ragu-Nathan, T. S., and Ragu-Nathan, B. S. 2011. "Crossing to the Dark Side:

Examining Creators, Outcomes, and Inhibitors Of Technostress," *Communications of the ACM* (54:9), pp. 113-120.

Tarafdar, M., Cooper, C.L. and Stich, J.F., 2019. The technostress trifecta-techno eustress, techno distress and design: Theoretical directions and an agenda for research. *Information Systems Journal*, 29(1), pp.6-42.

Younis, Ali. 2020. Aljazeera. Round-the-clock curfew in Jordan to battle coronavirus outbreak <https://www.aljazeera.com/news/2020/03/jordan-announces-clock-curfew-coronavirus-outbreak-200320184824472.html>

Wang, X. and Li, B., 2019. Technostress among Teachers in Higher Education: An Investigation from Multidimensional Person-Environment Misfit. *Frontiers in psychology*, 10, p.1