

The Impact of Technostress on Malaysia Educator's Performance in the Age of Covid-19

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Abstract: Covid-19 pandemic has an impact on many industries including education sector particularly higher institutions. The process of teaching and learning process must keep ongoing despite of the closing of the universities and college. All classes has been shifted to online platform from the face to face classroom. This rapid and wide-ranging change of online teaching approaches is closely related to stress levels of educators face. This is known as a technostress which is stress caused by rapid change in technology thus could impact educator's performance. This study aims to examine the relationship between technostress creators namely techno-overload, techno-complexity and techno-insecurity on the educator's performance during Covid 19. This study was a cross-sectional survey research design and implementing quantitative method by distributing questionnaires to educators who conduct online teaching. A total of 159 educators from private college and university in Johor Bahru were selected as sample using purposive sampling technique. The collection of data has been analyzed using SPSS software. The analysis used in the study was descriptive analysis and correlation analysis. The results of this study shown that there was a significant relationship between techno-overload, techno-complexity and techno-insecurity on performance among educators from private college and university in Johor Bahru during Covid 19. Hence, this study is important to enhance the understanding of educators on technostress creators and to provide them to come out with the strategies for effective use of ICT integration in teaching performance during Covid 19 outbreak.

Keywords: Technostress, Covid-19 Pandemic, Educators' Performance, Education

1. Introduction

Covid-19 is the biggest tragedy at the start of 2020 that gives a big impact on each people around the world. Most governments around the world have decided to temporarily close education institutions in an attempt to reduce Covid-19's spread. As of 30 September 2020, in reaction to the pandemic, nearly 1,077 billion students and educators are currently affected due to the closing of learning institutions (WHO, 2020). As a communication platform to replace face-to-face learning, the education sector in Malaysia has preferred to approach online learning or e-learning through technology and the Internet (Abdullah, 2020).

Because separate educational administrations have had to move the education system from face-to-face teaching to online teaching at the rate of Covid-19, the use of ICT has progressed from being just another methodological resource to the required solution to ensure that the teaching and learning process is not disrupted, thereby preventing the breakdown of education systems (Naresh, 2020). For this cause, the transformations that are happening are impacting the teaching field itself, while educational practitioners need to adapt to the current situation. The role of educators in the successful use of ICT resources in the teaching-learning phase following the COVID-19 crisis is crucial (Santisi, 2018).

Educators need to learn how to use the online learning tool because previously they use face-to-face teaching method before pandemic outbreak. The transition to the online style, however, has posed several problems with the teaching performance (Sahu, 2020). According to Cidral *et al.* (2018), employee productivity and the use of the e-learning method have an important performance indicators. This also supported by Tara (2020) that, it is important for educators to perform even during Covid-19, with the right technology and support system. However, according to Lawrence and Tar (2018), educators cannot be expected as productive as while using ICT as teaching platform they would have been before pandemic outbreak. Educators at higher learning institutions are required to spend more time and effort to adapt to these sudden change in learning and teaching methods and work requirement of using ICT and this could lead to increasing level of stress (Jena, 2015; Syvänen *et al.*, 2016).

The introduction of distance and online learning methods has had an impact on many areas of education in Malaysia, one of which is online learning (Wardana, 2020). As a result, it raises questions that cannot be answered definitively, such as when the pandemic will come to an end so that educational system can be re-opened. It has become necessary to conduct learning online rather than face-to-face, as is normally done in the classroom, as a result of this phenomenon. According to Christian *et al.* (2020), the Covid-19 pandemic may last for a long time and there is unpredictability of when it will come to end thus it will allow the production of stress which is known as technostress, among educators in teaching especially when conducting online class or any media applications.

In Malaysia's tertiary education system, online teaching is still used as a platform of learning during pandemic outbreaks. Even though there are many benefits of online technology in education particularly during Covid-19 where it can help to contain from the virus spread, various studies has found that negative effect on stress were due to the excess usage of online technology or digitalization (Joo *et al.*, 2016). Numerous research have been conducted on the effect of stress on teaching (Al-Fudail and Peterson, 2004; Tarafdar, Pullins, and Ragu-Nathan, 2014; Pignata *et al.*, 2016). Additionally, working from home together with online teaching and learning may contribute to overloading of work that associated with achieving the aim of excessive online teaching through the use of ICT and balanced teaching performance might contribute to the development of technostress (Effiyanti and Sagala, 2018).

Educators believe that the technology they use at work causes longer work days and a fundamental shift in working patterns as a result of techno-overload (Ragu-Nathan *et al.*, 2010). This supports Califf and Brook (2020) finding that technology is greatly affecting and molding education, and, in particular, is fundamentally changing how educators perform their tasks. According to Suharti and Susanto (2014), techno-overload shapes individual technostress, and technical expertise influences job performance.

Besides, by using and learning new and different technology of learning and teaching lead to techno-complexity problem among educators whereby, Califf and Brook (2020) have highlighted that, as a result, techno-complexity is associated with an educator's misfit in terms of their ability to use technology to execute the work at hand, thus mismatch is then associated with a pressure that may affect their performance.

Additionally, some studies said that teaching online lead to techno-insecurity since it is they also discovered that it can be a result of a perceived lack of technological skill in comparison to peers, and that such feelings are associated with burnout. These views are particularly relevant in the context of teaching, given that teaching is a highly collaborative profession and that both students and teachers engaging in knowledge sharing (Banerjee *et al.*, 2017). However, the usage of ineffective information and communication systems might result in decreased job performance due to techno-insecurity (Tarafdar *et al.*, 2010).

Based on the current situation of Covid-19 and gap research above, this study attempts to complete the gap in prior studies that did not apply in Covid-19 pandemic situation that use distance and online teaching that could form technostress among educators. Therefore, this study intends to prove whether technostress creators namely Techno-overload, Techno-complexity and Techno-insecurity has significant relationship on educator's performance in online teaching during Covid-19.

The aim of this study to examine if there was significant relationship between technostress creators (techno-overload, techno-complexity and techno-insecurity) on performance among educators from private college and university in Johor Bahru.

2. Literature Review

2.1 Online Learning

In Malaysia, the effect of Covid-19 pandemic has hindered the ongoing learning at higher institutional. According to report by Abdullah (2020) this pandemic outbreak has provided an opportunity to improve online education for almost 5 million school students and 1.4 million of public and private university students all over Malaysia. All the physical classes from lower to higher level of education has shifted to online class. However, this major transition comes with huge challenges and obstacles. The process to online learning is time consuming to adapt but it is easy to set up. As educators may need more time to create their learning content so that the learning delivery is done effectively (Keswani *et al.*, 2020) as most educators would be facing technical problem and difficulty in adapting.

2.2 Educator's Performance

The term educator's performance is essentially a concept that is quite extensive in meaning because it is closely related to the behavior of individual in carrying out work that is their duty and responsibility in higher education. Ahmad and Rashid (2016) referred that behavior, level of knowledge, contribution of effort and external factors are associated educator's performance in carrying out the work. Existing performance in educational institutions will determine work productivity that will bring progress or setback for the organization. With the current of Covid-19 which allow all learning and teaching conducted through online platform has gave tremendous changed pattern in teaching among educators. Specifically it says, during Covid-19 pandemic has impact on educator's stress with a new adaptation of ICT which is known as technostress (Cao, 2020). The performance gap between educator's performance during physical class and online learning need to be identified and evaluated. Therefore, there is a need to improve performance of educators during online teaching in the educational system's organizational system continuously.

2.3 Technostress

The "dark side" of technology is synonymous with a recent research on technology-induced tension, known as technostress (Tams *et al.*, 2018; Salanova, Llorens, and Cifre, 2013; Tarafdar, Tu and Ragu-Nathan, 2011). Technostress is widely studied by investigating the effect of three techno-creators on stress and on the efficiency of the workplace in finance institutions and education sectors (Galluch *et al.*, 2015; Ragu-Nathan *et al.*, 2008; Tarafdar *et al.*, 2007).

(a) *Technostress on Educator's Performance*

The Covid-19 pandemic also impacted the teaching-learning process. Over the time, it can disrupt teaching performance and it begins with educators feel discomfort and struggle that could lead to stress when need to adapt teaching approaches to online platform quickly and thoroughly. The stress that caused by the use of ICT is identified as technostress.

Technostress is happened when educators unable to deal with new ICTs that evolve and change rapidly in the job setting. Among the observable sign of technostress are when employee unable to focus on single problem at one time, frustration, lack of control and irritability (Ibrahim *et al.*, 2007). ICT is present in teaching and learning as a part of revolution. In higher institution, it is unquestionable that ICT brings advantages in teaching and learning. However, in order to enhance teaching performance, educators are expected work with convenience, to accomplish more work and try innovative and creative idea with using technology in online teaching (Li and Wang, 2020).

Having said that, in order to have ICT integration to continuously improve, educators need to increase the workload, the role of educators become unclear with ICT and update skill in ICT usage (Jena, 2015). In the usage of technology, the term technostress applies to stress (Al-Fudail and Mellar, 2008). Media for information and communication technology, including social media, mobile apps, and mobile computing devices, for example. Technostress is not only could impact on educators' health, but in more complex interrelation, it may cause problem in management of education institution (Joo *et al.*, 2016).

(b) *Creators of Technostress*

The three technostress creators include techno-overload, techno complexity and techno-insecurity (Tarafdar *et al.*, 2007). Techno-overload refers to a situation in which educators are encouraged to work faster as a result of the use of linked ICTs anytime and wherever possible (Li and Wang, 2020). Techno-overload is when educators are stimulate to work harder and longer because the increase of workloads. According to Olaniyi and Akinlolu (2014) educators who are experiencing of work fatigue and pressure, also will result in work performance and other health problems. However, workload has a positive effect on educator's performance. There is more work to be done, work that must be completed in a short period of time, changing working habits, increased workload due to complexity, less free time, and contact with work among the indicators used to assess Techno-overload in this study (Li and Wang, 2020). Thus, the following hypothesis can be formulated:

H1: Techno-overload positively affects educator's performance.

Techno-complexity is refer as a circumstance in which the complexity of information and communications technology (ICT) increases the difficulty of educators since they are obliged to upgrade their skills and understand technologies that are always changing (Li and Wang, 2020). The indicators used to determine Techno-complexity are difficult to comprehend and utilize successfully, and there is uncertainty about using technology effectiveness in education. They also require extensive expertise and experience to operate properly, as well as a significant amount of time and effort. Teaching and learning processes with the use of ICT become more complicated than conventional methods where face-to-face in class occurs (Shedletsky and Aitken, 2001).

When it comes to the integration of information and communication technology (ICT) into the teaching and learning process, there are numerous complex issues to consider. Educators must be familiar with the media or applications that will be used, but the settings and instructional time that will be shared with the media or application itself must also be taken into account. It might result in confusing, overburdened, worried, and stressed of educators roles (Skaalvik, 2017). In the long run, this can affect work performance (Jena, 2015). Thus, the following hypothesis can be formulated:

H2: Techno-complexity positively affects educator's performance

Techno-insecurity is a term used to describe a situation in which educators are concerned about the existence of information and communication technology (ICT) because they believe that it may replace the job of educators in teaching, which could have an impact on work performance (Li and Wang, 2020). Furthermore, techno-insecurity is also defined as a disruption of regular work habits, threats to the workplace, updating skillsets to prevent being replaced, peers as a threat, and the fear of being replaced by peers, all of which are indicators of technological insecurity. Teaching insecurity is frequently impacted by seemingly insignificant factors such as confidence in computer-assisted instruction, anxiety in computer-assisted instruction, and experience in administering instructional programmes (Vannatta and Fordham, 2004). Thus, the following hypothesis can be formulated:

H3: Techno-insecurity positively affects educator's performance

2.5 Framework of Study

In order to assess whether they have a significant relationship to the dependent variable, the conceptual structure model suggested that all independent variables be evaluated as shown in Figure 1. Techno-overload, techno-complexity and techno-insecurity were the independent variables analyzed as they would affect the performance of the educators in the age Covid-19 pandemic.

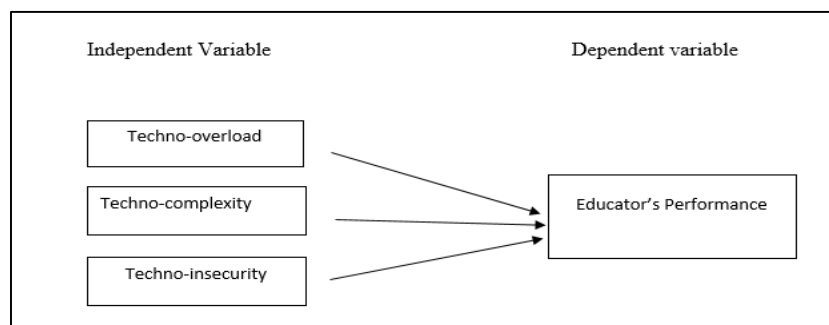


Figure 1: Conceptual Framework

3. Research Methodology

Apuke (2017) states that research is carried out to test theories using quantitative methods and to test the importance and insignificance of the variables used. In this analysis, quantitative methods of was used. Data was gathered between March until June 2021, the time period when all educators were instructed to work using online teaching. The data was gathered using a questionnaire collection.

3.1 Research Design

This study is a quantitative study that uses statistical data analysis. In identifying the relationship between independent variables (Techno-overload, Techno-complexity and Techno-insecurity) to the dependent variable (Educator's performance), this study is a descriptive cross sectional that involves

the collection of information from sample of population during Covid-19 outbreak when educators use ICT as teaching platform.

Respondents consisted of educators who work at private higher institution in Johor Bahru area and questionnaires were distributed via link of Google form. The study area was chosen because Johor Bahru was the capital and largest city in Johor with a population of 1.643 million in the census of 2020 based on reports from Department of Statistics Malaysia (2020). In order to determine the size of the sample, the researcher have selected seven private college and universities in Johor Bahru, with population of 270 educators whereas, the sample size using Krejice and Morgan (1970) was 159 educators.

Since this study have a small population, purposive sampling techniques were used where all the total population from seven private college and universities in Johor Bahru were chosen. The unit of analysis that involved was teaching staff at private higher institution in Johor Bahru who conduct class through online teaching during Covid-19. A total of 159 educators participated in the survey. The data were analyzed using Statistical Package for Social Science (SPSS) version 21 for descriptive analysis and correlation analysis.

The research instrument used in this study was one set of questionnaire. The questionnaire was adopted from Fuglseth and Sjørebø (2014), Marchiori *et al.* (2019), Ragu-Nathan *et al.* (2008), and Tarafdar *et al.* (2010) and adapted into Malaysian context. The questionnaire consists of two parts: Part A, Part B and Part C. Part A consists of demographic questions to determine the sample's gender, age, marital status and length of service using multiple choice answers. In Part B, consist of 3 section of variables (Techno-overload, Techno-complexity and Techno-insecurity) and Part C consist of educator's performance. Both Part B and Part C used similar likert scale that has been adapted using the scale proposed by Ragu Nathan *et al.* (2018) that uses Likert Scale or 5-point Likert, which is 1 strongly disagree (SD), 2 disagree (D), 3 Neutral (I), 4 agree (A), 5 strongly agree (SA).

3.2 Data Collection

Data collection for this study was obtained from primary data and secondary data where the method used was detailed. The primary method was data from survey questionnaire regarding on technostress and work performance that been distributed to the respondents of the study. While secondary data uses the educational journals by accessing online journals on the web links of Google Scholar, Scopus, ScienceDirect, Emerald Insight, and UTHM journal portals. During the distribution of questionnaire forms, all respondents who answered this question were deemed to agree to participate in the study and also agreed to the researcher to use the questionnaire for the study.

3.3 Data Analysis

Descriptive analysis and correlation analysis were used to analyze techno-overload, techno-complexity and techno-insecurity among educators from private college and university in Johor Bahru. Data was entered and analyzed in SPSS software. Meanwhile, correlation analysis is a technique for finding relationships between the two variables. The following were the procedures researcher used in the data processing and analysis as in Table 1.

Table 1: Data Processing and Analysis

1	Data cleansing (ensuring that the data is accurate and complete)
2	Tabulation of raw data for ease of analysis
3	The one-sample Shapiro-Wilk test is used to determine the normality of the data.
4	Hypothesis testing based on the results of the normality test, such as the Pearson correlation test for normally distributed data or the Spearman correlation test for non-normally distributed data, depending on the findings of the normality test.

4. Results and Discussion

This chapter explains the findings from research conducted through all activities that have been done to achieve the overall objective of the study. This analysis is carried out using the Statistical Packages for Social Sciences (SPSS) version 20. The results of the analyzed data are described in this chapter.

4.1 Response Rate

The questionnaire link was distributed to educators who work at private college and universities in Johor Bahru through Google form. Until June 2021, researcher managed to collect all 159 respondents as per in the sample size. Thus, the response rate in this research are 100%.

4.2 Demographic Analysis

In this section, the background of respondents will be explained from demographic information which are gender, age group, marital status and length of service. The findings from the research served as the basis and conclusion was justified from the findings. Hence, the data analysis conducted including demographic analysis, descriptive analysis, and correlation analysis. Descriptive analysis from frequencies method and percentage are used to analyse the background of respondents.

Table 2 displays the respondent demographic. As illustrated in Table 2, there were 112 (70.4%) female respondents and 47 (26.6%) male respondents. In other words, there were more females who participated in the study. There was a larger number of participants in the age range of 36-40 at 34.6%. All age ranges were represented in the demographic. However, there was only one respondent from the age range 50+ at 8.8%. The highest number of respondents participating were married with 89 (56.0%) respondents. Only 52 (3.6%) respondents were single 52 (32.7%) and 18 (11.3%) were others status. As for the length of service, the huge number of participants has 4-6(27.7%) working experience and least number of participant who has more than 20 years of working experience (8.8%).

Table 2: Demographic Analysis

Variables	Category	Frequency (<i>f</i>)	Percentage (%)
Gender	Male	47	26.6
	Female	112	70.4
Age	25-30 years old	32	20.1
	31-35 years old	35	22.0
	36-40 years old	36	22.6
	41-45 years old	23	14.5
	45-50 years old	19	11.9
	Above 50 years old	14	8.8
Marital Status	Single	52	32.7
	Married	89	56.0
	Others	18	11.3
Length of Service	1-3 years	18	11.3
	4-6 years	44	27.7
	7-10 years	43	27.0
	11-15 years	21	13.2
	16-20 years	19	11.9
	More than 20 years	14	8.8

4.3 Reliability Test

The draft 24 items were collected from 159 subjects of the sample and computed the internal consistency reliability of Cronbach alpha value. Internal consistency is a reliability measurement technique to measure the internal relationship between each item of the scales. All items showed acceptable levels of reliability as can be seen in Table 3. Based on the result obtained, all the Cronbach's Alpha value of the variables is greater than 0.70 indicating reliability of the data. None of the items were deleted in the test, as the reliability of inter-item was high.

Table 3: Reliability Test

Variables	Cronbach's Alpha	No. of items
TC Techno-overload	0.815	5
TC Techno-complexity	0.812	6
TI Techno-insecurity	0.835	5
EP Educator's Performance	0.939	4

The Cronbach's Alpha for Techno-overload (TO) was 0.815 which indicated the reliability level of techno-overload is high. Following, the Cronbach's Alpha of Techno-complexity (TC) was 0.812 which shown the independent variable has a high reliability test. Techno-insecurity (TI) has a high reliability test which is 0.835 and it indicated a high level of reliability. Lastly, from the table shows the level of reliability for educator's performance (EP) which was 0.939. In a nutshell, all the variables have a high level of reliability.

4.4 Descriptive Analysis of Mean for Each Variables

(a) Analysis of Mean of Techno-overload

Table 4 shows the mean score and the standard deviation of the influential variables which was techno-overload (TO) among respondents. Based on the table, the highest mean score is 3.65 which is TO4, “I am forced to change my work habits to adapt to new technologies in teaching”. Next is TO2 shows moderate level of mean score which is 3.00 which is, “I am forced by technology to do more work than I can handle”. Followed by, TO5 the same mean score of 3.00 which contributing to, “I am forced by technology to work much faster”. On the other hand, TO1 indicates a moderate level of mean which is, “I am forced by technology to work with very tight time schedules”, with score 2.87. Lastly, TO3 is a moderate level of mean which is, “I have a higher workload because of increased technology complexity” with score 2.69.

Table 4: Techno-overload

No. Item	Mean	Standard Deviation	Level
TO1	2.87	1.091	Moderate
TO2	3.00	1.147	Moderate
TO3	2.69	1.130	Moderate
TO4	3.65	1.038	Moderate
TO5	3.00	1.147	Moderate
Sum of Mean	3.04	1.147	Moderate

(b) Analysis of Mean of Techno-complexity

Based on Table 5, the highest level of mean is TO6 with the mean score of 3.65, which is “I find others know more about this technology than I do”. Next is, TC6 shows the second highest level of mean with 3.35, which is, “The high complexity of ICT causes me to doubt its usefulness and practicality in education”. Followed by, TC5 with 3.29, “I often find it too complex for me to understand and use new technology” with indicates moderate level of mean. TC2 shows a moderate level of mean with mean score 3.00 which is, “I need a long time to understand and use new technologies”. Next is TC3 with the moderate score mean of 2.69 which is “I do not find enough time to study and upgrade my technology skills”. Finally, TC1 also shows the moderate mean score which is 2.87, “I do not know enough about this technology to handle it satisfactorily”.

Table 5: Techno-Complexity

No. Item	Mean	Standard Deviation	Level
TC1	2.87	1.091	Moderate
TC2	3.00	1.147	Moderate
TC3	2.69	1.130	Moderate
TC4	3.65	1.038	Moderate
TC5	3.29	1.230	Moderate
TC6	3.35	1.243	Moderate
Sum of Mean	3.14	1.130	Moderate

(c) Analysis of Mean of Techno-insecurity

Based on the Table 6, TI2 and TI5 has the same moderate of mean score of 3.00 which is “I have to constantly update my skills to avoid being replaced” and “I feel there is less sharing of knowledge among coworkers for fear of being replaced” respectively. Besides that, TI1 and TI4 also have a similar moderate mean score of 2.87 which indicates “I do not share my knowledge with my coworkers for fear of being replaced” and “I feel constant threats to my job security due to the introduction of continually emerging new ICT in my university” respectively. Lastly is TI3 shows a moderate level of mean with 2.69 which is, “I am threatened by coworkers with newer technology skills”.

Table 6: Techno-Insecurity

No. Item	Mean	Standard deviation	Level
TI1	2.87	1.091	Moderate
TI2	3.00	1.147	Moderate
TI3	2.69	1.130	Moderate
TI4	2.87	1.091	Moderate
TI5	3.00	1.147	Moderate
Sum of Mean	2.89	1.147	Moderate

4.5 Relationship between Techno-overload, Techno-complexity, Techno-insecurity and Educator's Performance

The one-sample Shapiro-Wilk analysis test was used to determine the distribution of the data. The total score data were not normally distributed ($p < 0.05$). The correlation analysis was carried out to test the significant between techno-overload, techno-complexity, techno-insecurity and educator's performance was analyzed using the Spearman correlation test because the data were not normally distributed. This test was conducted to measure and identify the strength of relationship between techno-overload, techno-complexity, techno-insecurity and educator's performance. According to Guilford's rule of thumb, the Spearman correlation coefficient (r) can be used to determine the degree, size magnitude, and strength of a relationship. The strength of the relationship between a dependent variable and an independent variable was therefore determined using this method. According to Guilford, the strength of the relationship is displayed in Table 7.

Table 7: The Strength of the Relationship

Correlation Coefficient Value, r	Correlation of Strength
$r < 0.20$	Very weak
$0.20 < r < 0.40$	Weak
$0.40 < r < 0.70$	Medium
$0.70 < r < 0.90$	Strong
$0.90 < r$	Very strong

Source: Guilford (1956)

The following Table 8 shows the correlation between Techno-overload and Educator's Performance. Significant value of the elements is less than 0.01. There is a low relationship between the techno-overload and educator's performance ($r = 0.339$, $p < 0.01$). Techno-overload is significantly affects educator's performance, thus H1 is accepted.

Table 8: Correlation of Techno-overload and Educator's Performance

		TO	EP
TO	Correlation Coefficient	1.000	.339**
	Sig. (2-tailed)	.	.000
	N	159	159
	Correlation Coefficient	.339**	1.000
EP	Sig. (2-tailed)	.000	.
	N	159	159

** . Correlation is significant at the 0.01 level (2-tailed).

Table 9 indicates that the correlation coefficient between techno-complexity and educator's performance ($r = 0.538$, $p < 0.01$). There is moderate relationship between techno-complexity and educator's performance. Techno-complexity significantly affects educator's performance, thus H2 is accepted.

Table 9: Correlation of Techno-complexity and Educator's Performance

		TC	EP
TC	Correlation Coefficient	1.000	.538**
	Sig. (2-tailed)	.	.000
	N	159	159
	Correlation Coefficient	.538**	1.000
EP	Sig. (2-tailed)	.000	.
	N	159	159

** . Correlation is significant at the 0.01 level (2-tailed).

Table 10 indicates that the correlation coefficient between techno-insecurity and educator's performance is ($r = 0.253$, $p < 0.01$). Thus, there is a low relationship between techno-insecurity and educator's performance. Therefore, educator who experience techno-insecurity have a low relationship on their performance. Techno-insecurity significantly affects educator's performance, thus H3 is accepted.

Table 10: Correlation of Techno-insecurity and Educator's Performance

		TI	EP
TI	Correlation Coefficient	1.000	.253**
	Sig. (2-tailed)	.	.001
	N	159	159
	Correlation Coefficient	.253**	1.000
EP	Sig. (2-tailed)	.001	.
	N	159	159

** . Correlation is significant at the 0.01 level (2-tailed).

5. Discussion and Conclusion

In this research, an effort has been made to identify the relationship between techno-overload, techno-complexity and techno-insecurity towards educator's performance. This section summarizes all the findings obtained from the study. The conclusions are based on the objectives and questions presented in Chapter 1. In addition, this chapter also describes some limitation and recommendation, as well as guidelines for future studies are also outlined.

5.1 Discussion of the research findings

According to the findings, techno-complexity has a moderate relationship on educator performance. These findings are consistent with Cheah, Bellavitis, and Muscio's (2020) studies. This research uses techno-complexity to assess financial performance among workers at public research institutions and private enterprises, where techno-complexity is defined as a collection of challenges associated with managing, comprehending, decoding, and integrating investment.

Similarly, this finding differs from that of Islam, Talukder, and Hu (2011) and Seong Tak and Park (2016). Although this study explains the effects indirectly, it demonstrates conclusively that technostress associated with techno-complexity has no direct influence on performance, particularly in terms of job productivity and satisfaction. It is possible with the formation of work-life conflict interventions.

Based to the results, there is a low relationship between educator performance and techno-overload. Surprisingly, techno-overload was discovered to have a positive effect on the work performance of university educators, rather than a negative effect. This surprising outcome was consistent with Hung *et al.* (2015), who discovered that techno-overload improved individuals' performance. This could be a result of the fine balance between technostress and the benefits provided by ICT.

While the diversity of ICT functions and applications, as well as the information created by them, might overwhelm university educators, they also significantly facilitate their job and increase their efficiency. Techno-overload, on the other hand, should be kept at a minimum. Excessive overload caused by ICT use that exceeds the recommended level is nevertheless likely to have a detrimental effect on people's work performance (Karr-Wisniewski and Lu, 2010).

According to the results of statistical analysis, there is a low relationship between techno-insecurity and work performance. Concerns about the techno-insecurity associated with employing online teaching technology have been a factor in this study, as the Covid-19 pandemic situation is regarded to have been executed in mass.

This evidence is similar with Sareen's (2019) research. Additionally, this study found that men are more insecure when it comes to employing technology at the teaching level compared to non-teaching level jobs. These findings corroborate the work of Zainun, Johari, and Adnan (2020). This study demonstrates how techno-insecurity is viewed as a shift that has a significant impact on job performance. From the finding, it can be concluded that each technostress creators has a different outcome when assessing from different working sectors.

5.2 Limitation of Study and Recommendation

The following limitations apply to the interpretations of this study's findings: First, because to the cross-sectional design of this study, causal links between particular technostress creators and job performance are difficult to establish. A longitudinal method may be used in future study to evaluate possible causal links between these variables.

Second, given the limited research on technostress in higher education, this study offered only early insights into the links between various technostress generators and their effects on the job performance of university educators. Future research could be carried out to confirm these findings across a broader sample of higher education institutions representing a range of contexts and cultures in order to gain a more complete grasp of the issue of technostress.

And thirdly, the population for this study was limited to educators from private college and university in Johor Bahru. Survey responses were based on the perceptions of 159 educators in the Johor Bahru. The implications of solely studying educators from one location may not allow for widespread popularity. Future research could study more varied audiences, utilize more accurate media usage measures and evaluate additional contextual antecedents (e.g. rural or urban area, theory or practical learning), types of information received, attitudes and advantages from ICT usage.

5.3 Conclusion

The objective of this study was to examine the relationship between techno-overload, techno-complexity and techno-insecurity on educator's performance. The results indicated the methodological relevance of measuring technostress among educators. This assumption is validated by the findings of the questionnaire's reliability analysis, which is an important information that enables for further research fulfilment.

This study gives a completely different view on various technostress creators and their impact on the Covid-19 job performance of university educators. Since academicians at higher education institutions are frequently well-educated, they are more likely to embrace the use of ICT in their job if given with adequate understanding of utilizing ICT. It shows that inability to minimize individual technostress can outweigh predicted performance increases.

In a nutshell, despite these limitations, the findings of this study provide evidence-based support for policymakers, information and communications technology (ICT) providers, and other higher education stakeholders in developing strategies for effective ICT integration into university learning and teaching by taking into account the technostress experienced by university and college educators when using ICT in their work environments. Because university educators are the primary implementers of institutions' digitalization agendas, it is critical for the success of digitalizing higher education to ensure that educators' performance is maintained while they adjust to changes in their ICT jobs.

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