

THE EFFECTS OF TECHNOSTRESS CREATORS AND ORGANIZATIONAL COMMITMENT AMONG SCHOOL TEACHERS

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Received: 12 November 2019

Accepted: 7 December 2019

Published: 26 December 2019

ABSTRACT

In the fast-paced world, information is retrieved and stored efficiently using IT technologies. Due to the constant change and advancement in technology, technostress has become a critical issue in many organizations especially for those who are IT illiterate. This scenario is especially true for school teachers in Malaysia where students' information is stored and retrieved using a database system and posted online for quick accessibility of files and student management. However, for those who are not IT-skilled, this type of work demand can influence both the employee's motivation and work commitment. School teachers in Malaysia are found to be overworked and most had to take home their work, especially in updating students' information. The changing work demands and the need to perform both teaching and administrative duties have resulted in teachers facing a stressful working environment. This is especially true for senior teachers, whose IT skill is often lagging compared to their younger counterparts; hence the term technostress is coined -- not only to teachers but to those who are lacking in IT-related skills. Teachers' commitment is of utmost importance to produce better workforce for the future. Hence, this study was conducted to examine both the relationship and the effects of techno-stress creators and organizational commitment among school teachers. This study was carried out at six schools in Selangor involving 173 school teachers. The findings revealed that two dimensions of techno-stress creators which were techno-uncertainty and techno-insecurity had positive and significant influence on organizational commitment while all other three elements of techno-stress creators which were techno-overload, techno-invasion and techno complexity did not predict teachers' organizational commitment. The

findings also revealed that certain amount of techno-stress can enhance the level of teachers' commitment.

KEYWORDS: *Technostress, Organizational Commitment, School Teachers*

INTRODUCTION

Today's workplace atmosphere is incredibly dynamic and has undergone fast changes as a result of technological innovation. Despite vast workplace changes and technological advancements, perhaps, the one criterion employers are looking for besides the possession of both soft and hard skills is their organizational commitment. Employees' organizational commitment is imperative and sought after to ensure the effectiveness of work flow and the overall organizational performance. Highly committed employees are definitely valuable assets to the organization. Ahmad, Amin and Ismail (2014) mentioned that committed employees have higher loyalty, higher work performance, lower work stress and are more willing to accept organizational change. According to Chan, Lau, Lim and Hogan (2008), positive outcomes of employees' organizational commitment include higher job satisfaction, lower turnover rate, minimized absenteeism and improved organizational citizenship behavior.

A similar scenario also occurs in the educational setting especially in schools. Having highly motivated and committed teachers are regarded as an advantage to school administrators where teachers work independently to meet organizational objectives. At the school level, teachers' commitment is empirically supported as one of the influential factors on school effectiveness, teacher satisfaction, teacher retention, ability to integrate new ideas into their own practice and future success of education and schooling. Meanwhile, at the student level, teacher commitment is found to have an impact on students' achievement and attitudes toward school as well as students' commitment (Thien, Razak & Ramayah, 2014). Many previous studies found that organizational commitment positively influenced organizational performance. Therefore, it is absolutely vital for school administrators to encourage commitment among their teachers by providing the platform to enhance teachers' skills especially IT-related skills to meet the demands of today's workforce.

PROBLEM STATEMENT

Several factors are reported to negatively influence employees' organizational commitment. Work-life imbalance, workplace environment, work interests and pressure, and topping all other factors is workplace stress. Ahmad et al., (2014) mentioned that generally, workplace stress was consistently found to negatively influence organizational commitment. The advancement of technology in recent times has contributed to stress created by the use of technology and has become the main issue in organizations especially among technology illiterate employees. This phenomenon is known as technostress. Due to technostress, employees may suffer from anxiety which includes symptoms like irritability, headaches, nightmares, insomnia, technological rejection, and technological resistance (Ragu-Nathan, Tarafdar, Ragu-Nathan & Tu, 2008).

Findings from previous studies revealed that the major sources of stress in the workplace included but not restricted to the introduction, advancement and implementation of technology in the work place (Ragu-Nathan, Tarafdar, Ragu-Nathan & Tu, 2008, Okolo, Kamarudin and Ahmad (2018), and Brod, 1982). Moreover, in recent years, communication is fundamentally conducted through some form of technological involvement via smart phones, internet or online databases. The Ministry of Education Malaysia is not exempted from this phenomenon as millions of dollars were invested by the government to enhance technologies assumingly to make employees and teachers work faster in an organized fashion. Information is stored and retrieved in seconds. Communication is always fast; work is expected to be more organized and everything else is technologically assisted. Due to these technological investments, teachers are expected to work alongside with technology (Çoklar, Efilti, Şahin & Akçay, 2016) and will lead to technological stress. This will further stretch negative consequences to both teachers and schools who are expected to work faster with little human interaction or assistance other than the machine itself. Ranihusna, Wulansari, & Witiastuti (2015) concluded that technostress is a condition of physical and psychological discomfort caused by the interaction with technology. This discomfort was not selectively felt by technology ignorant or less technology savvy teachers, but also handled by those who are technologically savvy. The latter would face stressful situation due to the issues about internet technology advancement itself.

According to the National Union of the Teaching Profession (NUTP), there had been no improvement made to overcome the problem of slow online system and it was becoming gradually critical (to complete task assigned to teachers) thus the union has urged the Ministry of Education to quickly resolve the problem of internet accessibility faced by teachers nationwide (Bernama, 2015). Teachers wasted several hours daily and some even had to stay up late at night until 3 a.m., just to fill in the student data into the electronic system. This situation might become a problem to teachers who are facing a hard time adapting to technology or to embrace technology change. Thus, the so-called advancement in technology might be disadvantageous to teachers especially those who are not technologically savvy. Due to the rapid technological change, coupled with problems associated with technology itself, many experienced teachers may have lost their passion for teaching and opt to resign or retire early (Malaysian Digest, 2016). This will bring impact on teachers' commitment which would influence their teaching performance.

Currently, there are only a handful of comprehensive studies conducted on the relationship between technostress creators and organizational commitment. Evidence about technostress and commitment among Malaysian teachers are less extensive. Therefore, this research was conducted to address the problem of technostress and teachers' organizational commitment so that policy makers and school administrators alike can assist the teachers as well as to better understand this issue.

LITERATURE REVIEW

Technostress Creators

Technostress progressed with the increased use of business computing in the work place in the early 1980s. The term technostress was created by Brod (1982) who labeled it as a phenomenon that prompted stress when technology users experienced difficulty in using new technology. Technostress, according to Ragu-Nathan et al., (2008), can be described as a problem in adapting new technology due to an employee's inability to cope with or to become used to technology. Brod (1982) reported that technostress can be predicted when certain conditions existed. He asserted that the conditions were associated with age and technology experience of users and the perceived ability to accomplish tasks using technology given to users. Weil and Rosen (1997) defined technostress as any negative impact on attitudes, thoughts, behaviors, or body physiology that is caused either directly or indirectly by technology. As revealed by Tarafdar, Tu, Ragu-Nathan and Ragu-Nathan (2007), technostress creators can be demonstrated into five which are: techno-overload, techno-invasion, techno-complexity, techno-insecurity and techno-uncertainty. The five technostress areas as described by Ahmad, Amin and Ismail (2009) are: 1) Techno-overload which deals mainly with how the technology used by the respondents caused them to work faster, longer, or change their work habits and increase their workload; 2) Techno-invasion which deals with how the technology used in their work has encroached into their personal life; 3) Techno-complexity which deals with the perception of the users towards the complexity of the technology adopted and whether they feel that their skills now are adequate or otherwise; 4) Techno-insecurity which deals with whether or not the users feel that technology used is a threat to their job security; 5) Techno-uncertainty which deals with the constant change in technology that make the respondents feel uncertain.

Research on organizational stress has highlighted the negative effect technostress partakes especially on job satisfaction, commitment and performance (Cooper et al., 2001). In addition, Lee and Ashford (1996) reiterated the implications of stressors (including technostress) that the higher the number of stressors, for example role conflict, workload and role stress, will yield to the greater affiliation with emotional exhaustion. School teachers who are not IT-savvy will require long hours to get their work done, and almost all of them will carry out the administrative duties at home or after school hours. This will eventually make teachers work long, after school hours or even during the weekends. Studies specifically on long working hours found the adverse impact on personal happiness, job satisfaction, workplace accidents, irritability, exhaustion, depression and interpersonal relationships (Giga et al., 2008). In addition, Wang, Shu and Tu (2008) argued that lack of enough time to complete tasks was a significant contributor to technostress. Other contributing factors were fear of destruction to the new technology by using it incorrectly; anxiety, ignorance or incompetence of users (Wang et al., 2008).

In a recent study, Okolo, Kamarudin and Ahmad (2018) found that technology is a double-edged sword because of its ability to induce stress among the users especially technostress. Technostress anxiety, according to Okolo et al., (2018) revealed a strain that is caused by the lack of knowledge of individuals to cope and adapt to the use of technologies. Ayyagari, Grover, & Purvis (2011) also reported that technostress is a type of uneasiness that initiates as a result of employees' inability to cope with the use of technology in a healthy

manner. Brod (1982) argued that technostress occurred when professionals moved from a stage of harmonious work-related tasks to a state of distress when trying to use technology. As a result, productivity levels fell, and the domino action of negative effects began to emerge. Hence, it is fair to say that technology is making things to get better and faster, only if the person using it has the skills to utilize it to maximize work performance.

Organizational Commitment

Meyer and Allen (1991) defined organizational commitment as a psychological state which characterizes the relationship of the employees to the organization and has implications on the employees' intention to remain or discontinue membership in the organization. They further described three distinct forms of commitment. The first dimension was affective commitment, defined as the positive feelings of employees towards the organization in terms of their identification, attachment and involvement. The second dimension was termed as continuance commitment and was defined as the degree of commitment that employees feel towards their organizations. Finally, the third dimension known as normative commitment is defined as the extent of obligations for the employees to stay with the organization.

METHODOLOGY

Research Design

This study used correlation research design in order to explore the relationships between variables. The sampling frame for this study was the school teachers from six conveniently selected schools in Selangor. Census survey is the sampling technique for this study as the whole population was used as respondents for this study. A total of 173 school teachers from the six selected schools have participated in this study. Reliability, descriptive and multiple regression analyses were used to analyze the data in order to answer the objectives of this study.

Research Instrument

The instrument used for this study was the questionnaire consisted of three sections and the measurement of items in Section 2 which was Technostress creators and Section 3 (Organizational Commitment) were based on a six-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). The first section consisted of respondents' profile such as respondents' gender, age, marital status and working experience. The second section consisted of five dimensions under Technostress creators which are techno-overload, techno-invasion, techno-uncertainty, techno-complexity, and techno-insecurity.

Technostress Creators scale developed by Tarafdar et al. (2007) was adapted to measure each dimension and this scale comprised of 23 items. The third section consisted of three dimensions under organizational commitment which are affective commitment, continuance commitment, and normative commitment. These dimensions were measured using Organizational Commitment scale developed by Allen and Meyer's (1990) and comprised of 24 items.

FINDINGS AND DISCUSSIONS

The total number of respondents involved in this study was 173 school teachers from six selected schools in the state of Selangor. Majority of respondents were female (n=129, 74.6%). The highest age group was 31-40 years old (n=73, 42.2%). It was also found that majority of the respondents were married (n=127, 73.4%), and most of the respondents had working experience above 9 years (n=93, 53.8%). Thus, this study can conclude that the majority of the respondents were married, female and fairly young and inexperienced teachers.

Respondents' Profile

Table 1: Respondents' Profile

Demographic	Description	n	%
Gender	Male	44	25.4%
	Female	129	74.6%
Age	20 – 30 years old	53	30.6%
	31 – 40 years old	73	42.2%
	41 – 50 years old	38	22.0%
	51 years old and above	9	5.2%
Marital Status	Single	45	26.0%
	Married	127	73.4%
	Others	1	0.6%
Teaching Experience	1-2 years	21	12.1%
	3-4 years	26	15.0%
	5-6 years	14	8.1%
	7-8 years	19	11.0%
	Above 9 years	93	53.8%

Table 2 shows a positive, significant and medium relationship between technostress creators and organizational commitment based on the assumption by Cohen (1988). From the finding, it was clear that the higher the technostress creators in the school, the higher the commitment of teachers. This was supported by Ahmad, Amin and Ismail (2012) stated that none of the technostress creators was inversely correlated with organizational commitment.

The positive relationship between technostress creators and organizational commitment demonstrated that not all stress can be associated or regarded as a bad influence. Lazarus and Folkman (1984) proposed that cognitive response to stressors can also be a positive one based on the individual's resources and ability to cope. The school teachers in this study tend to react to stressors with positive emotions.

Therefore, the study verified that stress created by the usage of technology may not necessarily lower the level of teachers' commitment. A study by Umar and Hassan (2015) revealed that teachers perceived the implementation of ICT brings positive impact on teaching although time constraint might be the obstacle towards the adoption of technology into work habits.

Correlation between Technostress Creators and Organizational Commitment

Table 2: The Results of Correlation Analysis

Correlations			
		Technostress Creators	Organizational Commitment
Technostress Creators	Pearson Correlation	1	.306**
	Sig. (2-tailed)		.000
	N	173	173

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

The Influence of Technostress Creators towards Organizational Commitment

Table 3: The Results of Regression Analysis

Independent Variables	Standardized Coefficients	t	Sig.	Collinearity Statistics	
	Beta			Tolerance	VIF
Techno-overload	.107	1.305	.194	.694	1.441
Techno-invasion	-.067	-.794	.429	.653	1.530
Techno-complexity	-.058	-.683	.496	.660	1.514
Techno-insecurity	.199	2.478	.014	.727	1.375
Techno-uncertainty	.356	4.730	.000	.827	1.209
R Square	.217				
F	9.280				
Sig. of F value	.000				
Durbin Watson	1.675				

Table 3 shows multiple regression analysis between elements in technostress creators and organizational commitment. The result showed that the value for R² is .217, in which all independent variables which are techno-overload, techno-invasion, techno-complexity, techno-insecurity and techno-uncertainty explained 21.7% of the variance (R square) in organizational commitment, with Sig. of F value of .000. Besides, the value for Durbin Watson was 1.675 which in the range of 1.5 to 2.5 as fulfilling one of the accepted assumptions for bivariate and multivariate correlation analyses.

From the result of this analysis, it was found that techno-uncertainty was the most influential factor (or the greatest predictor) with the highest beta value ($\beta=.356$, $p<.05$). This finding is in line with the study conducted by Ahmad et al., (2012) who found techno-uncertainty predicted organizational commitment among academic librarian. However, after a careful examination of each of the variables under technostress creators, it was found that only two elements which were techno-insecurity and techno-uncertainty predicted organizational commitment among teachers. Okolo et al., (2018) reported that technostress had a significant effect on employee engagement (or commitment) and that working under stressful work conditions can lead to a decrease in employee organizational commitment. In essence, teachers who experienced stressful work conditions including technostress may have decreased commitment towards the schools they work for or may make errors in their work. Brod (1982) found that further unintended consequence of technostress was the reduction of information flow, which increased error rates.

School administrators must take into account on the changing technology introduced at schools which can be detrimental towards teachers' commitment. Administrators and the

Ministry of Education need to be more cautious in introducing new technologies into both teaching and learning process without taking into consideration the adverse effect of teachers who do not possess the skills needed to get the job completed effectively. In general, teachers' commitment was not swayed with technology as evident by the relationship between Technostress and organizational commitment found earlier. What is more important is to equip them with the necessary knowledge, skills and abilities to help them embrace technology. In one study, it was found teachers would feel motivated to undergo more training to embed technology in their work as they believed that the implementation of technology can bring positive impact in education (Nikian, Nor & Aziz, 2013).

Techno-insecurity is another element that needs to be addressed by school administrators and the Ministry of Education. Technology can be extremely helpful in making our lives easier, but the security aspect of technology must be made a priority. This study revealed that despite the fancy effects technology can bring, security is an element that worries the teachers. Techno-security, as found in this study affected teachers' organizational commitment.

It can be concluded that rapid changes in technology makes teachers more motivated to explore and learn on the tools of technology as they believed it would bring positive impact to teaching and learning provided that they are ready with the necessary skills to assist them in their daily duties. However, it worth mentioning that the security aspect of both the technology itself and the users must be made a priority concern because it can lead to mistrust among users, in this case, the teachers.

CONCLUSIONS

In the context of technostress creators and organizational commitment, the results revealed that there was a positive, significant and medium relationship between these variables. This shows that certain factors in Technostress (Techno-overload, Techno-invasion and Techno-complexity) did not affect teachers' organizational commitment. Therefore, this study demonstrates that certain techno-stress created by the usage of technology did not negatively affect organizational commitment. However, two other factors which were techno-uncertainty and techno-security did influence teachers' organizational commitment. Ragu-Nathan et al. (2008) also found that both techno-insecurity and techno-uncertainty had a negative relationship with job satisfaction and caused technostress among professionals. Okolo et al., (2018) suggested that "despite all the advantages associated to the use of technology in workplaces, technology can induce stress in the lives of employees which can affect employee's engagement" (p. 525).

Trafaldar et al., (2007) reported that organizations that invested in technology would want a higher return on investment in the form of reduced operational cost, significant operational efficiencies, and competitiveness. However, Trafaldar et al., (2007) also warned that these intensive technological systems caused negative repercussions for the employees who used technology as part of their job functions. Generally, younger people may have higher levels of positive attitudes towards technology and may experience lower levels of technostress because of their positive attitudes (Sahin and Çoklar, 2009). To decrease the effects of technostress creators, Ragu-Nathan et al., (2008) suggested three areas as important and necessary to confine technostress which were: 1) high levels of technical support 2) high levels of technology literacy and 3) high levels of employee involvement in the implementation of the new technology.

As such, whether one likes it or not, in order to reduce stress among teachers, it is very important for school administrators to get teachers to be involved in the implementation of new technology by assisting them to acquire the skills needed to perform their job effectively and efficiently.

It is recommended for future studies to consider a cross-sectional study by comparing between urban and rural schools to identify the differences between teachers' level of technostress and commitment. An interesting study might look at different geographical factors, age, type of schools and perhaps gender that may influence technostress creators and organizational commitment. Other than that, the differences of primary and secondary schools also can be put into consideration for future studies. It is suggested that in the future, researchers may consider increasing the sample size to enhance the consistency of results of similar studies. As this study only focused on teachers in selected schools in Selangor, the results cannot be generalized to all school teachers in Malaysia due to different geographical location and teachers' background. Bigger sample size and wider representation of school teachers can expand the findings of the study.

ACKNOWLEDGMENT

The authors would like to thank the Research Management Institute (RMI) and the Faculty of Business and Management, UiTM Selangor, Malaysia for funding this research project through the BESTARI Perdana Grant (600-IRMI/DANA 5/3/BESTARI (P) (030/2018)).

REFERENCES

- Ahmad, U. N. U., Amin, S. M., & Ismail, W. K. W. (2009). The impact of technostress on organizational commitment among Malaysian academic librarians. *Singapore Journal of Library and Information Management*, 38, 103-23.
- Ahmad, U. N. U., Amin, S. M., & Ismail, W. K. W. (2012). The relationship between technostress creators and organisational commitment among academic librarians. *Procedia-Social and Behavioral Sciences*, 40, 182-186.
- Ahmad, U. N. U., Amin, S. M., & Ismail, W. K. W. (2014). Moderating effect of Technostress inhibitors on the relationship between Technostress creators and organisational commitment. *Sains Humanika*, 67(1).
- Allen, N. J. & Meyer, J.P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63, 32-42.
- Ayyagari, R., Grover, V., and Purvis, R. (2011). Technostress: Technological Antecedents and Implications. *MIS Quarterly*, 35(4), 831-858.

- Brod, C. (1982). Managing technostress: Optimizing the use of computer technology. *Personnel Journal*, 61(10), 753-757. Retrieved from <http://www.workinfo.com/free/links/hrmpublic.html>
- Chan, W. Y., Lau, S., Lim, S., & Hogan, D. (2008). Organizational and personal predictors of teacher commitment: The mediating role of teacher efficacy and identification with school. *American Educational Research Journal*, 45(3), 597-630.
- Cohen, R. K. (1988). Qualitative methods in psychology: A power primer. *Psychological Bulletin*, 112(1), 155-159.
- Çoklar, A. N., Efiltili, E., Şahin, Y. L., & Akçay, A. (2016). Determining the reasons of technostress experienced by teachers: a qualitative study. *Turkish Online Journal of Qualitative Inquiry*, 7(2), 71-96.
- Cooper, C.L., Dewe, P.J. and O'Driscoll, M.P. (2001), *Organisational Stress: A Review and Critique of Theory, Research and Application*, Sage, Newbury Park, CA.
- Giga, S.I., Jain, A.K. and Cooper, C.L. (2008), "State-of-science review - working longer: hours of work and health", A Science Review for the Foresight Project on Mental Capital and Mental Wellbeing. Report for the UK Government Office for Science, available at: www.foresight.gov.uk/Mental%20Capital/SR-C7_MCW.pdf.
- Lazarus, R. S. & Folkman, S. (1984). *Stress, Appraisal and Coping*. Springer, New York.
- Lee, R.T. and Ashford, B.E. (1996), "A meta analytic examination of the correlates of the three dimensions of job burnout", *Journal of Applied Psychology*, 81, 123-133.
- Meyer J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human resource management review*, 1(1), 61-89.
- Nikian, S., Nor, F. M., & Aziz, M. A. (2013). Malaysian teachers' perception of applying technology in the classroom. *Procedia-Social and Behavioral Sciences*, 103, 621-627.
- Okolo, D, Kamarudin, S, and Ahmad, U. N. (2018). An Exploration of the Relationship between Technostress, Employee Engagement and Job Design from the Nigerian Banking Employee's Perspective. *Management Dynamics in the Knowledge Economy*, 6(4), 511-530. DOI:10.25019/MDKE/6.4.01
- Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information Systems Research*, 19(4), 417-433.
- Ranihusna, D., Wulansari, N. A., & Witiastuti, R. S. (2015). Reduction effect of technostress with role of perceived organizational support. *International Journal of Applied Business and Economic Research*, Vol. 13, No. 7: 5159-5171.

- Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems*, 24(1), 301-328.
- Sahin, Y. L., & Çoklar, A. N. (2009). Social networking users' views on technology and the determination of technostress levels. *Procedia - Social and Behavioral Sciences*, 1, 1437-1442. doi:10.1016/j.sbspro.2009.01.253
- Thien, L. M., Razak, N. A., & Ramayah, T. (2014). Validating teacher commitment scale using a Malaysian sample. *Sage open*, 4(2), 2158244014536744.
- Umar, I. N., & Hassan, A. S. A. (2015). Malaysian teachers' levels of ICT integration and its perceived impact on teaching and learning. *Procedia-Social and Behavioral Sciences*, 197.
- Weil, M. M., & Rosen, L. D. (1997). *Technostress: Coping with technology @ work @ home @ play*. Wiley.
- Wang, K., Shu, Q., & Tu, Q. (2008). Technostress under different organizational environments: An empirical investigation. *Computers in Human Behavior*, 24, 3002-3013. doi:10.1016/j.chb.2008.05.007