

The Impact of Technostress on Organisational Commitment among Malaysian Academic Librarians

Ungku Norulkamar Ungku Ahmad

Salmiah Mohd Amin

Wan Khairuzzaman Wan Ismail

Universiti Teknologi Malaysia

Abstract

The technological revolution has undoubtedly brought along many changes in the workplace today. Although it has allowed work to be carried out faster and more efficient, many employees are not comfortable with the implementation of technology as it involves change and uncertainty. As a result, they experience additional stress known as technostress which may have negative consequences in the organisation. This conceptual paper highlights the issues of technostress and organisational commitment, particularly in the library setting. As empirical evidence on the influence of technostress on organisational commitment is still lacking, this paper proposes the methodology for examining the impact of technostress in organisational commitment among the Malaysian academic librarians.

Keywords: Technological stress, Organisational commitment, Malaysia, Academic libraries, Concept paper

Introduction

It is an undeniable fact that technology has become an integral part in today's society. Technological revolution in organisation has not only improved efficiency but also helps reduce the problem of boredom in the workplace (Vieitez, Carcia, & Rodriquez, 2001). The advancement of technology has also been a dominant force in improving and enhancing library services. The application of library automation has immensely improved the effectiveness of library activities such as acquisition, circulation, cataloguing, reference, and serials control (Bichteler, 1986; Murthy & Cholin, 2003). The ability of libraries to offer access to digital information regardless of location and time has given birth to the term "virtual library", "electronic library" or "digital library" (Gorman, 2001; Saunders, 1999).

Nevertheless, as technology is rapidly changing, it has caused a lot of employees to suffer from technostress. Previous literature indicated that one attribution of technological revolution in the workplace today was the rise of occupational stress (Gallie, 2005; Laff, 2006; Rosen & Weil, 2000). Basically, technostress is the general feeling of anxiety and the negative impact on thoughts, behaviours, attitudes, and body when a person is expected to deal with technology (Kupersmith, 1992; Weil & Rosen, 1997). The usage of computer integrated system, CD-ROMs and multiple databases, the Internet and World Wide Web, and the rapid change of information technology has also caused an enormous amount of strain on librarians (Bichteler, 1987; Davis-Millis, 1998; Kupersmith, 2006).

Occupational stress, regardless of what causes it, has been found to have negative influence on organisation. For instance, higher levels of stress have been associated with lower organisational commitment (Ketchand & Strawser, 2001; Lopopolo, 2002). In the past, studies on technostress among the librarians have been mainly focused on the levels of technostress experienced, the sources of technostress, the symptoms of technostress, and the coping strategies used to tackle the problem of technostress in the library (Bichteler, 1987; Champion, 1988; Harper, 2000; Kupersmith, 2006; Poole & Denny, 2001; Sami & Pangannaiah, 2006; Van Fleet & Wallace, 2003). Nevertheless, the repercussions of technostress on the librarians' commitment towards their organisations remain

to be investigated. Since the problem of technostress still persists in the library setting (Kupersmith, 2006; Nawe, 1995; Quinn, 2007; Sami & Pangannaiah, 2006; Spacey, Goulding, & Murray, 2003; Van Fleet & Wallace, 2003), this study intends to examine the impact of technostress on organisational commitment among the librarians in the Malaysian public higher learning institutions. In order to understand the phenomenon of technostress and its relationship with organisational commitment, the issues of technostress and organisational commitment particularly in the library setting are highlighted. Towards the end of this paper, the proposed methodology for examining the impact of technostress in organisational commitment among the Malaysian academic librarians is discussed.

Technostress

The term technostress was coined in 1984 by a clinical psychologist, Dr. Craig Brod (1984, p. 16):

Technostress is a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner. It manifests itself in two distinct but related ways: in the struggle to accept computer technology, and in the more specialized form of overidentification with computer technology.

Although Brod (1984) looked at technostress as a disease, other researchers considered it more as an inability to adapt to changes brought by technology. Davis-Milis (1998) identified technostress as a condition whereby a person has to adapt to new technology especially when there is inadequacy of the equipment, support, or the technology itself. Apart from that, according to Clark and Kalin (1996), the real definition of technostress is “resistance to change”. They claimed that technology is not the culprit because computer and technologies are just tools and stress is a natural reaction. Thus, they suggested that in order to manage technostress, it is the change that has to be managed not the technology. Their view was supported by Champion (1988) who stated that the information age was all about change, or to be more specific, response to “technochange”, not about technical components such as machines, programs, network, or fibre optics.

Tarafdar, Tu, Ragu-Nathan, and Ragu-Nathan (2007) described technostress as a problem of adaptation as a result of a person's inability to cope with or to get used to information and communication technologies (ICT). Additionally, they have identified five components of technostress, also known as technostress creators, which are:

1. **Techno-overload:** A situation where ICT users are forced to work faster and longer.
2. **Techno-invasion:** A situation where ICT users felt that they can be reached anytime or constantly "connected" which caused a blurring between work-related and personal contexts.
3. **Techno-complexity:** A situation where ICT users feel that their skills are inadequate due to the complexity related to ICT. As a consequence, they are forced to spend time and effort to learn and understand the various aspects of ICT.
4. **Techno-insecurity:** A situation where ICT users feel threatened that they will lose their job, either being replaced by the new ICT or by other people who are better in ICT compared to them.
5. **Techno-uncertainty:** A situation where ICT users feel uncertain and unsettled since ICT is continuously changing and need upgrading.

Other terms that were synonymous with technostress used by other researchers include technophobia, computerphobia, computer anxiety, and computer stress (Chua, Chen, & Wong, 1999; Durndell & Haag, 2002; Mustaffa, Yusof, & Saad, 2007). In addition, the term digital depression has also been used to identify the feeling of an employee when being overwhelmed by technology ("Digital depression' identified as new form of stress", May 2003).

Technostress in Libraries

Since the introduction of the internet, librarians were among the early adopters in educating users about the resources available on the internet. However, in the process of adapting to the increasingly complex technologies, more users and staff

have been experiencing physical and emotional stress (Saunders, 1999) which resulted in higher levels of absenteeism and turnover, higher cost for retraining new staff and increase in litigation costs related to workplace stress (Harper, 2000).

In general, Bichteler (1986) found that librarians welcome technology in their work setting as it enhanced and improved their work. Nonetheless, with the existence of technology, users expected instant availability of documents; became frustrated with small collection in the library; insisted on computer search when manual search would be better; and became overwhelmed with information when single term search led to too many citations. Thus, dealing with these users has caused the librarians to feel technostressed. In addition, although the usage of word processing did help them work faster, it pushed them to produce more while the lead time is shortened. Consequently, they felt it has caused excess work and put them under pressure to work faster.

Bichteler (1986) also discovered that as a result of library automation some librarians felt that their personalities had changed, in which they became more computer-oriented. They were easily irritated and impatient when dealing with unorganised or illogical people and found it hard to communicate with non-programmers. The pressure to use the equipment efficiently and to stay on schedule had reduced their opportunities for conversation and led them to isolate themselves from other people. Moreover, the librarians also felt frustrated when there is incompatibility between micros and mainframe, inaccessible and unhelpful sales representatives, lack of training, and inadequate time provided to practice what they have learned.

Technostress in libraries were also found to stem out from organisational factor. For example, inadequate staff and insufficient number of printers, terminals, and work stations which caused the librarians to share equipments was more likely to lead to frustration and avoidance (Kupersmith, 1992). Furthermore, in unsupportive climate where librarians perceived that their ideas were being ignored, their efforts going unnoticed, there were no rewards for professional development, or when the organisations' priorities were unclear, such factors would contribute to librarians being much less able to deal with technology and its demands (Kupersmith, 1992).

According to Harper (2000), there were two forms of technostress affecting librarians; the physical form and the psychological form. Complaints of headache, backstrain, eyestrain, repetitive strain injuries such as Carpal tunnel syndrome, and muscular dysfunctions were some of the physical forms of technostress. The psychological forms of technostress suffered by librarians included feeling drained, information overload, overidentify with technology, underwork, and doing routine jobs. In addition, the fear that computers were taking over their roles also led to feelings of job insecurity. There were also feelings of jealousy among librarians when their levels of technology competencies differed and resulted in the loss of motivation and team spirit. Spending so much time working with new technology also gave rise to feelings of job role uncertainty especially when librarians find themselves doing the job of systems librarians.

An online survey by Kupersmith (2006) confirmed that technostress existed in the library setting. In fact, more than half of the librarian surveyed (59%) felt that stress had increased in the past five years and almost two third of the respondents believed that the problem was somewhat serious. It was also revealed by the study that the leading causes of technostress in the library were information overload, networking problem, security issues and computer hardware, and ergonomics. Nevertheless, this finding somewhat contradicted with the findings of Poole and Denny (2001). A state-wide survey of community college library revealed that a majority of the librarians there felt that technology had neither increased nor decreased their amount of workplace stress. This may be due to the strong state-wide training available to the community college library personnel. A majority (82%) of the respondents agreed that the quality of the training provided was moderately good to excellent. This goes to show the importance of training in alleviating technostress.

The development of internet and electronic networked resources encouraged the development of new services such as digital libraries. However, this might pose a great challenge since the internet was also seen as a threat as it created a lot of uncertainty (Melchionda, 2007). Although there would be some who were optimistic and proactive, there were others who feel threatened and resistant since they have no idea how to manage, work in, and survive in this new environment. In addition, the internet was also causing a sense of job insecurity. Some librarians feared that they would no longer be needed as library users would be able to use the internet without their help. Some librarians also felt threatened by

those who were more flexible, smarter, and better trained in technologies. The transition from automation to digitization meant that librarians had to acquire new skills and competencies and be educated in new technologies, which in turn added a further burden and stress to them (Melchionda, 2007).

Previous studies on technostress in libraries had been concentrating on the sources and consequences of technostress. Studies on the correlation of technostress in the library setting with other aspects of organisational behaviour are still lacking. Alongside knowing the source and the impact of technostress on employees, it is also essential to investigate whether or not technostress affect other aspects of employee's behaviour in the organisation, such as organisational commitment.

Organisational Commitment

Committed employees can be described as those who have high involvement with their organisations and very much like to remain part of the organisations. Having committed employees is advantageous to organisation as they are less likely to resign or to be absent, and are more willing to share and make sacrifices for the sake of their organisations (Greenberg, 2005). In addition, individuals who exhibited higher commitment to their organisations were also found to have higher loyalty and lower work stress (Muthuveloo & Rose, 2005), higher performance (Boshoff & Mels, 1994), and were much more willing to accept organisational change (Vakola & Nikolaou, 2005).

Mowday, Steers, and Porter (1979) defined organisational commitment as the extent to which an employee identified with and is involved in his particular organisation. This definition pointed out three basic components of organisational commitment: (a) strong belief and acceptance of the organisation's goals and values (identification), (b) willingness to exert a considerable amount of effort on behalf of the organisation (involvement), and (c) strong desire to remain in the organisation (loyalty).

Organisational commitment is typically conceived as individual's psychological bond to the organisation he is attached to (O'Reilly, 1989). This includes a sense of job involvement, loyalty, and belief in the values uphold by the organisation. O'Reilly (1989) cited three stages of commitment. The first stage, known as the compliance stage, is the lowest level of commitment whereby a person accepts the influence of others just because he wants to receive something in return, such as pay. The second stage is the identification stage. In this stage, a person accepts the influence of others so as to maintain a satisfying relationship which in turn makes him feel proud belonging to a certain organisation. The highest level of commitment occurs in the last stage, the internalisation stage, in which a person finds the values of the organisation to be congruent with his personal values and intrinsically rewarding.

According to Meyer and Allen (1991), organisational commitment is a psychological state which characterises the relationship of the employees to the organisation and has implications on the employees' decision to remain or continue membership in the organisation. They further described three distinct forms of commitment which are:

- Affective commitment which reflects the strength of the employees' emotional attachment to, identification with, and involvement in the organisation
- Continuance commitment which can be described as the employees' awareness of the cost of leaving the organisation
- Normative commitment which refers to the employees' feeling of obligation to remain in the organisation

In terms of organisational commitment among librarians, McCormick (2000) posited that librarians' level of organisational commitment is significantly influenced by career stages, type of library work setting, and number of dependents. Furthermore, more committed and satisfied librarians have been found in libraries that support participatory management, open communication, and opportunities for achievement (Burd, 2003). As far as the Malaysian setting is concerned, even though Karim and Noor (2006) claimed that Allen and Meyer's Organisational Commitment scale was applicable to Malaysian academic libraries, the study did not discuss the level of organisational commitment of these librarians.

Consequences and Correlates of Organisational Commitment

A more committed employee is said to be less likely to experience burnout (Freeborn, 1997). Previous empirical studies revealed that organisational commitment would be able to predict employee's absenteeism, performance, turnover, and other behaviours (Mathieu & Zajac, 1990). In addition, the impact of organisational commitment was also found to be consistent in different parts of the world. For example, Siu (2003) confirmed that organisational commitment is positively related to job performance among employees in Hong Kong.

It should be noted that different types of commitment would result in different work-related behaviour outcomes. For example, among the three Meyer and Allen (1991) components of commitment, affective commitment has generally been found to have more positive consequences for both the employees and the organization. Affective commitment has been found to have a positive relationship with job performance, though the relationship is weak (Allen & Meyer, 1996; Mathieu & Zajac, 1990). In addition, it was also found to have negative relationship, albeit weak, to absenteeism and lateness, but a stronger negative relationship to turnover (Allen & Meyer, 1996; Mathieu & Zajac, 1990).

Interestingly, even though all the three components of commitment were negatively correlated with turnover, only affective commitment was found to be negatively related with absenteeism while normative and continuance commitment had a positive relationship with absenteeism. Furthermore, the relationship between continuance commitment and desirable work behaviour was also inconclusive, either unrelated or negatively related (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Overall, these findings suggested that affective commitment might provide better benefit to the organisation.

Numerous studies had also looked into the relationship of various variables with organisational commitment. According to Ketchand and Strawser (2001), organisational commitment had been identified to have significant relationships with job satisfaction, job involvement, stress, occupational commitment, and motivation. Among these variables, past research had consistently proved that

there was a strong positive relationship between organisational commitment and job satisfaction (Ketchand & Strawser, 2001; Leong, Furnham, & Cooper, 1996; Mathieu & Zajac, 1990; Wu & Norman, 2006; Young, Worchel, & Woehr, 1998). Meyer, Stanley, Herscovitch, and Topolnytsky (2002) also argued that affective commitment had strong correlations with job involvement, occupational commitment, and had the strongest correlation with overall job satisfaction. Moreover, the levels of commitment among the librarians had been found to significantly correlate with career development stage, types of library work setting, and number of dependents (McCormick, 2000) and with their work values (Burd, 2003).

A number of studies had also focussed specifically on the relationship between organisational commitment and job stress (Boshoff & Mels, 1994; Dale & Fox, 2008; Lee & Jamil, 2003; Lopopolo, 2002; Mathieu & Zajac, 1990; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Omolara, 2008; Tu, Ragu-Nathan, & Ragu-Nathan, 2001; Vakola & Nikolaou, 2005). According to Omolara (2008), employees with low level of stress were more committed to achieving organisational goals and reported higher level of commitment towards the organisation. However, his study did not identify the specific stressors that correlated with organisational behaviour, unlike the findings of Dale and Fox (2008), Tu, Ragu-Nathan and Ragu-Nathan (2001), Jamal (1990), Lopopolo (2002), Lee and Jamil (2003) and Boshof and Mels (1994).

The studies of Dale and Fox (2008), Lopopolo (2002), Tu, Ragu-Nathan and Ragu-Nathan (2001), and Jamal (1990) all concluded that two type of role stressors, namely role ambiguity and role conflict, were negatively related to organisational commitment. Focusing on role conflict and role clarity, Lee and Jamil (2003) also argued that role conflict was negatively related to organisational commitment while a positive relationship existed between role clarity and organisational commitment. On the contrary, Boshoff and Mels (1994) only found a significant inverse relationship between organisational commitment and conflict but failed to find significant correlation between organisational commitment and role ambiguity. While these studies were conducted across professions and geographical locations, they were still mainly limited to the stressors of role conflict and role ambiguity and did not focus on the different types of organisational commitment.

As far as technostress is concerned, only one recent study was found to investigate the influence of technostress on organisational commitment. In this study which was conducted among the end users of Information and Communication Technologies (ICT), the existence of technostress creators were found to lead to a decline in job satisfaction which in turn led to a decrease in organisational and continuance commitment while technostress inhibitors led to the opposite trend (Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008). Nevertheless, this study did not show a direct relationship between technostress and organisational commitment. Suffice to say that empirical evidence on the phenomenon of technostress and its influence on organisational commitment is still lacking.

Although the subject of organisational commitment has been studied for more than 30 years (for example, the organisational commitment questionnaire (OCQ) was developed by Porter in the 1970s (Mowday, 1998)), the importance of understanding the concept of organisational commitment should not be downplayed. With the rapid changes, especially the technological revolution that is taking place in organisations today, there is a big possibility that organisational commitment is influenced by factors that have yet to be uncovered.

Hypotheses Development

Technology can create stress due to several factors. As a tool for efficiency and productivity improvement, technology has the capability to increase the pace of work that allows employees to produce more in a shorter time. However, technology can also cause some employees to experience an increase in their workload and to feel pressured to work faster, a phenomenon known as techno-overload (Bichteler, 1986; Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008). In addition, the ability of technology to connect employees with their work anywhere and at anytime has resulted in techno-invasion whereby employees feel that their personal lives are being invaded by the technology (Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008). As a result, they feel that they have to sacrifice their personal and family time and spend more time on their work, even outside the office.

The implementation of technology in the workplace has also created techno-insecurity, a feeling of job insecurity which has led to an increase in anxiety and stress (Melchionda, 2007; Vieitez, Carcia, & Rodriguez, 2001). In addition, the rapid change in technology besides creating techno-uncertainty, also means that technology end-users always need to learn new things and upgrade their skills, which resulted in techno-complexity (Harper, 2000). According to Ragu-Nathan, Tarafdar, Ragu-Nathan, and Tu (2008) techno-overload, techno-invasion, techno-insecurity, techno-complexity, and techno-uncertainty are among the sources of technostress, known as technostress creators. Since stress may inversely influence commitment, it is hypothesised that:

Ha: There is a negative correlation between technostress creators and organisational commitment

Methodology

In order to examine the impact of technostress in organisational commitment among the Malaysian academic librarians, this study will utilise the survey method. Level of technostress among the respondents will be measured using the Technostress Creators scale developed by Tarafdar, Tu, Ragu-Nathan and Ragu-Nathan (2007) which consists of five technostress creators:

1. Techno-overload which deals mainly with how the technology used by the respondents cause them to work faster, 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-insecurity which deals with whether or not the respondents feel the technology used is a threat to their job security.
4. Techno-uncertainty which deals with the constant changes in the technology used.

5. Techno-complexity which deals with the perception of the respondents towards the complexity of the technology used and whether they feel that their skills now are adequate or otherwise.

Meyer's and Allen's (1997) Organisational Commitment scale will be employed in measuring the respondent's level of organisational commitment. The scale will consist of items measuring:

1. Affective commitment which deals with how attached the respondent is to their organisation.
2. Continuance commitment which deals with the respondents believe on the cost of leaving their organisations now.
3. Normative commitment which deals with the degree of obligation the respondents feel to stay with in their organisations.

Respondents for this study will consist of librarians from the public higher learning institutions in Malaysia. Since these libraries are well equipped with the latest technology to better serve their clients, it is assumed that the librarians in these institutions are also experiencing some levels of technostress. In addition, studies on technostress in Malaysia were found not only to be limited but have been conducted only on academicians and managers (Ibrahim, 2007; Mustaffa, 2007).

Currently, there are 20 public institutions of higher learning in Malaysia. For the purpose of this study, cluster sampling will be employed whereby only libraries in the public higher learning institutions that have been set up more than 10 years will be chosen. This is because they are more established and have higher involvement in library automation. These libraries are:

1. Perpustakaan Sultanah Zanariah, Universiti Teknologi Malaysia
2. Library of International Islamic University Malaysia
3. Perpustakaan Hamzah Sendut, Universiti Sains Malaysia
4. Perpustakaan Universiti Malaya
5. Perpustakaan Sultanah Bahiyah, Universiti Utara Malaysia
6. Perpustakaan Sultan Abdul Samad, Universiti Putra Malaysia

7. Perpustakaan UKM, Universiti Kebangsaan Malaysi
8. Perpustakaan Universiti Teknologi MARA
9. Perpustakaan Universiti Malaysia Sarawak
10. Perpustakaan Universiti Malaysia Sabah

Librarians in this study will be defined according to the librarian service scheme as classified by the Jabatan Perkhidmatan Awam Malaysia. Thus, library personnel with Grade S41 to Grade S54 will be included in the sampling of this study (Skim Perkhidmatan Pustakawan, 2006). A sampling frame will be obtained from the libraries' web page. Since the size of population differs from one library to another, proportionate stratified random sampling will be used to ensure a proportional representation of every organisation.

The hypothesis will be tested using multiple regression analysis as it will involve multivariate analysis (Hair, Anderson, Tatham, & Black, 1998; Punch, 2005). Specifically, stepwise regression approach will be utilised. By utilising multiple regressions analysis, the overall predictive power of the independent variables can be maximised. In addition, the predictive power of each independent variable to the variate can be ascertained. Hence, for this study, the regression model will be:

$$OC = a + b_1TO + b_2TIV + b_3TU + b_4TC + b_5TIS + e$$

Where:

OC = Organisational Commitment

TO = Techno-overload

TIV = Techno-invasion

TU = Techno-uncertainty

TC = Techno-complexity

TIS = Techno-insecurity

Conclusion

Previous findings have shown that among the major causes of workplace stress in today's environment is the introduction and implementation of technology. Since workplace stress has normally resulted in negative consequences to individuals and organisations, an investigation on the influence of technostress on organisational commitment is fundamental. Among those who have been heavily affected by technostress are librarians. Thus, this paper proposes a study on the impact of technostress on organisational commitment among librarians working in the libraries of Malaysian public higher learning institutions. The findings of this study will generate new knowledge and provide fresh insights that may be fruitful to organisations in dealing with the problem of technostress. Knowing how technostress affect librarians will enable public higher learning institutions libraries to plan appropriate mechanisms in managing stress due to technology and maintain a high level of organisational commitment among the librarians.

References

- Allen, N. J., & Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. *Journal of Vocational Behavior*, 49, 252-276.
- Bichteler, J. (1986). Human aspects of high tech in special libraries. *Special Libraries Association*, 77 (3), 121-128.
- Bichteler, J. (1987). Technostress in libraries: Causes, effects and solutions. *Electronic Library*, 5 (5), 282-287.
- Boshoff, C., & Mels, G. (1994). A Causal model to evaluate the relationships among supervision, role stress, organizational commitment and internal service quality. *European Journal of Marketing*, 29 (2), 23-42.
- Brod, C. (1984). *Technostress: The human cost of the computer revolution*. Reading: Addison-Wesley.
- Burd, B. (2003). *Work values of academic librarians: Exploring the relationships between values, job satisfaction, commitment and intent to leave*. Paper

presented at the ACRL Eleventh National Conference, 10-13 April, Charlotte, NC. Retrieved from <http://www.ala.org/ala/mgrps/divs/acrl/events/pdf/burd.PDF>

- Champion, S. (1988, November). Technostress: Technology's toll. *School Library Journal*, 48-51.
- Chua, S. L., Chen, D. T., & Wong, A. F. L. (1999). Computer anxiety and its correlates: A Meta-analysis. *Computers in Human Behavior*, 15 (5), 609-623.
- Clark, K., & Kalin, S. (1996, August). Technostressed out? How to cope in the digital age. *Library Journal*, 30-32.
- Dale, K., & Fox, M. L. (2008). Leadership style and organizational commitment: Mediating effect of role stress. *Journal of Managerial Issues*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-34281367_ITM
- Davis-Millis, N. (1998). *Technostress and the organization: A manager's guide to survival in the information age*. Paper presented at the 67th Annual Meeting of the Music Library Association, 14 February, Boston, Massachusetts. Retrieved from <http://web.mit.edu/ninadm/www/mla.htm>
- 'Digital depression' identified as new form of stress. (2003, May). Management Services, Retrieved from http://findarticles.com/p/articles/mi_qa5428/is_200305/ai_n21331012
- Durndell, A., & Haag, Z. (2002). Computer self-efficacy, computer anxiety, attitudes towards the Internet and reported experience with the Internet, by gender, in an East European sample. *Computers in Human Behavior*, 18, 521-535.
- Gallie, D. (2005). Work pressure in Europe 1996-2001: Trends and determinants. *British Journal of Industrial Relations*, 43 (3), 351-375.
- Gorman, M. (2001). Technostress and library values. *Library Journal*, 124 (7), 48-50.
- Greenberg, J. (2005). *Managing behavior in organizations*, 4th ed. Upper Saddle River, NJ: Pearson.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis*, 5th ed. New Jersey: Prentice Hall.

- Harper, S. (2000). Managing technostress in UK Libraries: A realistic guide. *Ariadne*. Retrieved January 25, 2008 from <http://www.ariadne.ac.uk/issue25/technostress/intro.html>.
- Ibrahim, R. Z. A. R., Bakar, A. A. & Nor, S. B. M. (2007). Techno stress: A study among academic and non-academic staff. In Dainoff, M. J. (Ed.) *Ergonomics and health aspect of work with computers*. Berlin: Springer.
- Jamal, M. (1990). Relationship of job stress and Type-A behavior to employees' job satisfaction, organizational commitment, psychosomatic health problems, and turnover motivation. *Human Relations*, 43 (8), 727-738.
- Karim, N. H. A., & Noor, N. H. N. M. (2006). Evaluating the psychometric properties of Allen and Meyer's Organizational Commitment Scale: A cross culture application among Malaysian academic librarians. *Malaysian Journal of Library & Information Science*, 11 (1), 89-101.
- Ketchand, A., & Strawser, J. R. (2001). Multiple dimensions of organizational commitment: Implications for future accounting research. *Behavioral Research in Accounting*. Retrieved October 7, 2008 from http://www.accessmylibrary.com/coms2/summary_0286-10651365_ITM
- Kupersmith, J. (1992). Technostress and the reference librarian. *Reference Services Review*, 20, 7-14.
- Kupersmith, J. (2006). Library technostress survey result. Retrieved October 7, 2008 from <http://www.jkup.net/tstress-survey-2003.html>
- Laff, M. (2006). Got stress? *T+D*, 60 (7), 31-36.
- Lee, B. H., & Jamil, M. (2003). An empirical study of organizational commitment: A multi-level approach. *Journal of Behavioral and Applied Management*, 4 (3), 176-189.
- Leong, C. S., Furnham, A., & Cooper, C. L. (1996). The moderating effect of organizational commitment on the occupational stress outcome relationship. *Human Relations*, 49 (10), 1345-1363.
- Lopopolo, R. B. (2002). The relationship of role-related variables of job satisfaction and commitment to the organization in a restructured hospital environment. *Physical Therapy*, 82 (10), 984-999.
- Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108 (2), 171-194.

- McCormick, C. (2000). *A study of the job attitudes (Job satisfaction, organizational commitment, and career commitment) and career adaptability of the members of the library and information science profession*. Retrieved August 13, 2008, from <http://www.vla.org/Programs/MLAVLAsummary.htm>
- Melchionda, M. G. (2007). Librarians in the age of the Internet: Their attitudes and roles. *New Library World*, 108 (3/4), 123-140.
- Meyer, J. P., & Allen, N. J. (1991). A Three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1, 61-89.
- Meyer, J. P., & Allen, N. J. (1997). *Commitment in the workplace: Theory, research and application*. Thousand Oaks, CA: Sage.
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A Meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, 61, 20-52.
- Mowday, R. T. (1998). Reflections on the study and relevance of organizational commitment. *Human Resource Management Review*, 8 (4), 387-401.
- Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The Measurement of organizational commitment. *Journal of Vocational Behavior*, 14 (2), 224-247.
- Murthy, T. A. V., & Cholin, V. S. (2003). *Library automation*. Retrieved December 19, 2008, from http://dspace.inflibnet.ac.in/bitstream/1994/170/3/03cali_1.pdf
- Mustaffa, C. S., Yusof, R., & Saad, A. R. M. (2007). *Technophobia and individual characteristics: Understanding computer-related technostress among Malaysian employees*. Paper presented at the 5th International Conference on Communication and Mass Media, May 21-22, Athens, Greece.
- Muthuveloo, R., & Rose, R. C. (2005). Antecedents and outcomes of organisational commitment among Malaysian engineers. *American Journal of Applied Sciences*, 2 (6), 1095 - 1100.
- Nawe, J. (1995). Work-related stress among the library and information workforce. *Library Review*, 44 (6), 30-37.

- O'Reilly, C. (1989). Corporations, culture and commitment: Motivation and social control in organizations. *California Management Review*, 31 (4).
- Omolara, B. E. (2008). *Influence of work related stress on organizational commitment at Olabisi Onabanjo University Ago Iwoye Ogun State Nigeria*. Paper presented at the 2008 EABR & TLC Conference Proceedings, Rothenburg, Germany.
- Poole, C. E., & Denny, E. (2001, November). Technological change in the workplace: A statewide survey of community college library and learning resources personnel. *College & Research Libraries*, 503-515.
- Punch, K. F. (2005). *Introduction to social research: Quantitative and qualitative approaches*, 2nd ed. London: Sage.
- Quinn, B. A. (2007). Overcoming technostress in reference services to adult learners. *Libraries Faculty Research, Texas Tech University (eScholarship Repository)*, 1-23. Retrieved from http://esr.li.ttu.edu/lib_fac_research/19
- 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.
- Rosen, L. D., & Weil, M. M. (2000). Results of our 49-month study of business attitudes show clerical/support staff, managers and executives using more technology at work and at home and becoming more hesitant toward new technology. *Byte Back, LLC and Human-Ware, LLC*, 1-16. Retrieved from <http://www.technostress.com/busstudy2000.htm>
- Sami, L. K., & Pangannaiah, K. B. (2006). "Technostress": A Literature survey on the effect of information technology on library users. *Library Review*, 55, 429-439. Retrieved from <http://www.emeraldinsight.com/0024-2535.htm>
- Saunders, L. M. (1999). The Human element in the virtual library. *Library Trends*, 47 (4), 771-789.
- Siu, O.L. (2003). Job stress and job performance among employees in Hong Kong: The role of Chinese work values and organizational commitment. *International Journal of Psychology*, 38 (6), 337-347.
- Skim Perkhidmatan Pustakawan*. (2006). Retrieved from <http://www.jpa.gov.my/pekeliling/pp05/bil34/LampA1.pdf>

- Spacey, R., Goulding, A., & Murray, I. (2003). ICT and change in UK public libraries: Does training matter? *Library Management*, 24, 61-69. Retrieved from <http://www.emeraldinsight.com/0143-5124>
- Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of Information Management Systems*, 24, 1, 301-328. Retrieved from http://www.jmis-web.org/articles/v24_n1_p301/index.html
- Tu, Q., Ragu-Nathan, B., & Ragu-Nathan, T. S. (2001). A Path analytic study of the antecedents of organizational commitment of IS managers. *Information Resources Management Journal*, 14 (3), 27-36.
- Vakola, M., & Nikolaou, I. (2005). Attitudes towards organizational change: What is the role of employees' stress and commitment? *Employee Relations*, 27 (2), 160-174.
- Van Fleet, C., & Wallace, D. P. (2003). Virtual libraries - real threats: Technostress and virtual reference. *Reference & User Services Quarterly*, 42 (3), 188-191.
- Vieitez, J. C., Carcia, A. D. L. T., & Rodriguez, M. T. V. (2001). Perception of job security in a process of technological change: Its influence on psychological well-being. *Behaviour & Information Technology*, 20 (3), 213-223.
- Weil, M. M., & Rosen, L. D. (1997). *Technostress: Coping with technology @Work @Home @Play*: New York: Wiley.
- Wu, L., & Norman, I. J. (2006). An investigation of job satisfaction, organizational commitment and role conflict and ambiguity in a sample of Chinese undergraduate nursing students. *Nurse Education Today*, 26, 304-314.
- Young, B. S., Worchel, S., & Woehr, D. J. (1998). Organizational commitment among public service employees. *Public Personnel Management*, 27 (3), 339-348.

About the Authors

Ungku Norulkamar Ungku Ahmad, Senior Lecturer, Dept of Management,
Faculty of Management and HRD, Universiti Teknologi Malaysia, Malaysia

Email: ungkunor@yahoo.com

Salmiah Mohd Amin, Head, Dept of Management, Faculty of Management and
HRD, Universiti Teknologi Malaysia, Malaysia

Email: salmiahamin@yahoo.com

Wan Khairuzzaman Wan Ismail, Associate Professor, International Business
School, UTM International Campus, Malaysia

Email: m-wkhair@utm.my