

The Influence of Techno Stress and Organizational-is Related Support on User Satisfaction in Government Organizations: A Proposed Model and Literature Review

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Abstract: Empirical evidence on the issue of satisfaction towards certain computer applications or systems has guided organizations in the implementation process of information systems (IS). What is more important, findings of the previous studies in the IS field have proved that user satisfaction is one dimension of IS success and needs to be carefully managed during the implementation process. Consequently, organizations are increasingly concerned about ensuring that employees have gained satisfaction about the IS that they use. Organizations also need to investigate user opinions about the system, and where its faults lie. Though there are a great number of studies on IS, little attention has been given to the influence of technostress and organizational IS-related support on IS success in government organizations of Malaysia. This paper contributes to the IS Malaysian literature pertaining to EHRM. Based on the review of literature on EHRM, user satisfaction, technostress, and organizational IS-related support, a model is presented as are two main hypotheses that will be tested in the future. The results of the research will provide useful insights in the EHRM area, particularly to the HRMIS implementation in government organizations of Malaysia.

Keywords: EHRM, technostress, IS-support, user satisfaction, HRMIS, Malaysia

1. Introduction

The application of electronic human resource management (EHRM) has been growing, and this trend is expected to continue in the near future. The use of EHRM in organizations is to ensure smooth operation of HRM practices, strategies and policies. Many studies have proven that EHRM provides benefits to HR functions, employees and organizations as a whole. For instance, EHRM can reduce human resource transaction costs by up to 75% and regain costs associated with the technology in less than two years (Bell, Lee, & Yeung, 2006). In addition, Noe, Hollenbeck, Gerhart and Wright (2008, p. 47), highlighted the implications of EHRM for HRM practices as these: employees in geographically dispersed locations can work together in virtual teams using video, e-mail, and the Internet (analysis and design of work); job openings can be posted online; candidates can apply for jobs online (recruiting); online learning can bring training to employees anywhere, anytime (training); online simulations, including tests, videos, and e-mail, can measure job candidates' ability to deal with real-life business challenges (selection); and employees can review salary and bonus information and seek information about and enrol in benefit plans (compensation and benefits). Moreover, EHRM facilitates better management of the all-important competitive edge, especially for the activities of thinking, idea generating, and customer-serving human resources (Shilpa & Gopal, 2011). Nowadays, organizations are increasingly concerned about ensuring that employees are satisfied with the IS that they use, as satisfaction is considered to be surrogate for IS success (Baroudi, Olson, & Ives, 1986; Gudigantala, Song, & Jones, 2011; Igbaria & Nachman, 1990; Ives, Olson, & Baroudi, 1983; Sabherwal, Teyaraj, & Chowa, 2006). Without employees' satisfaction, smoothly running an organization is not possible (Gupta & Saxen, 2011). To improve satisfaction, organizations must investigate the opinion of the users about the system, and where its faults lie. To date, few attempts have been made to capture the overall user evaluation for IS, along with the antecedent factors that form satisfaction (i.e., Aggelidis & Chatzoglou, 2012; Bhattacharjee, 2001; Dastgir & Mortezaie, 2012; DeLone & McLean, 1992; Gudigantala et al., 2011; Larsen, 2009; McKinney, Yoon, & Zahedi, 2002; Nadkarni & Gupta, 2007; Oliver & Richard, 1980; Tarafdar, Tu, & Ragu-Nathan, 2011; Venkatesh, Morris, Davis, & Davis, 2003). Much more effort must be made, especially by the practitioners, scholars and researchers, to probe the issue of system success, particularly user satisfaction in EHRM. As a starting point, this research adapted a model developed by Tarafdar, Tu, Ragu-Nathan, and Ragu-Nathan (2011) that examined the influence of stress conditions and organizational mechanisms on job outcomes. The model is based on the Transaction Theory of Stress by Lazarus (as cited by Tarafdar, et al., 2011).

HRMIS in Malaysia and Issues: In Malaysian government organizations, EHRM is known as the human resource management information system (HRMIS). HRMIS is one of the seven flagship efforts under the umbrella of electronic government (EG) projects. It is an effort to provide public servants with an integrated system for human resource information management. Furthermore, the HRMIS project is implemented in tandem with the government's vision for using information and communication technology (ICT) to transform the operations of human resource processes and subsequently propel the country into the era of the knowledge worker and the knowledge-based economy (Eia, 2004, p. 6). Phase 1 of the project was scheduled to begin on 12 April 1999 and be completed on 30 September 2004. To date, the application of HRMIS remains in the rollout process for most government agencies with the value-added enhancements from time to time. However, due to the unfavourable responses of users towards the systems, HRMIS2 an upgraded and improved version of HRMIS, has been introduced. Based on a survey conducted on HRMIS2, more than 50 percent of the HRMIS2 users remain unsatisfied with the system. Are there any unforeseen factors that have contributed to the situation? As mentioned by Aladwani (2003) Au, Ngai, and Cheng (2002), and Guimaraes and Igbaria (1997), system factors, user's situational factors (or behavioural factors), and social factors or organizational factors have significant impacts on user satisfaction. Furthermore, Au and Ngai (2008) mentioned that several studies claimed that most systems fail to fulfil their articulated objectives and outcomes, not because they do not have technical requirements, but because psychological and organizational issues were not well tackled during the development and implementation stages. Furthermore, several studies have investigated HRMIS from various contexts and issues (MAMPU, 2011; McPherson & Ramli, 2004; Mohd Azman, 2011; Noraswati, 2011; Norshita, Halimah, & Tengku Mohammad, 2010). A few of them tried to investigate the issue of satisfaction among users towards HRMIS. However, no study reported on the influence of technostress and organizational IS-related support on user satisfaction towards HRMIS in government organizations.

Research Objective: Therefore, the main objective of the study is to examine the influence of technostress and organizational IS-related support on user satisfaction towards HRMIS in the public sector. The contributions of the study include a theoretical contribution to IS success literature, a contribution to the field of EHRM or HRIS, and a contribution about the influence of technostress and organizational support factors on user satisfaction. The outcome of the research could be used to assist in the implementation of EHRM in organizations, particularly HRMIS in government organizations. A research model is proposed using factors identified from the literature review.

2. Literature Review

Electronic Human Resource Management (EHRM): EHRM is often used interchangeably with human resource information system (HRIS), human resource management system (HRMS), and virtual human resource (HR). Ruel, Bondarouk and Looise (2004) define EHRM as a way of implementing HRM strategies, policies, and practices in organizations through the conscious and directed support of and with the full use of web technology based channels. Moreover, the technology is also referred to as an application of IT for both networking and supporting at least two individual or collective actors in their shared performing of HRM activities (Strohmeier, 2007). In addition, EHRM is referred to as the administrative support of the human resource function in organizations by using Internet technology (Voermans & Veldhoven, 2007). Bondarouk and Ruel (2009) claimed that E-HRM researchers have not standardized a definition of E-HRM. They put forward a new E-HRM definition, which represents a consensus-based understanding of E-HRM. They defined E-HRM as 'an umbrella term covering all possible integration mechanisms and contents between HRM and technologies aiming at creating value within and across organizations for targeted employees and management' (p. 507). The definition of EHRM by Bondarouk and Ruel (2009) will be adopted for the purpose of the study. Several studies have contributed to the knowledge about the effects of E-HRM on various areas. To name a few, E-HRM towards HRM effectiveness (Bondarouk & Ruel, 2005, 2009; Ruel, Bondarouk, & Velde, 2007; Sanayei & Mirzaei, 2008); attitude towards using E-HRM (Voermans & Veldhoven, 2007; Yusliza & Ramayah, 2011; Yusliza, Ramayah, & Haslindar, 2011); employee satisfaction towards EHRM (Gupta & Saxena, 2011); impact of EHRM on professional competence in HRM (Bell et al., 2006); and adoption of EHRM (Olivas-Lujan, Ramirez, & Zapata-Cantu, 2007; Strohmeier & Kabst, 2009).

User Satisfaction: There have been several definitions offered for satisfaction. Bailey and Pearson (1983) and Wixom and Todd (2005) define satisfaction in a given situation as the sum of one's feeling and attitudes toward a variety of factors affecting the situation. More precisely, Oliver (1993) summarized the definition of satisfaction as the individual's emotional state following a certain experience. In the IS context, satisfaction is referred to as the recipient's reaction to the use of the output of an IS (Irani et al., 2012). In addition, end-user satisfaction is referred to as the IS end-user's overall affective and cognitive evaluation of the pleasurable level of consumption-related fulfillment experienced with the IS (Aggelidis & Chatzoglou, 2012). In the present study, user satisfaction refers to the affective attitude towards a specific computer application by someone who interacts with the application directly (Doll & Torkzadeh, 1988) by combining two roles: primary and secondary user roles. The measures of user satisfaction have appeared in much IS research. The studies represent a variety of measures and settings. What is more important, various factors have been identified to have an impact on end-user satisfaction. Notably, the role for user satisfaction has been tested as a dependent variable (Aggelidis & Chatzoglou, 2012; Au et al., 2002; Dastgir & Mortezaie, 2012; Gudigantala et al., 2011; Karimi, Somers, & Gupta, 2004; Larsen, 2009; Nadkarni & Gupta, 2007; Oliver & Richard, 1980); an independent variable (Cho, Cheng, & Hung, 2009); and as a mediator to other variables (Bhattacharjee, 2001; McGill & Klobas, 2008; Schaupp, 2010; Wixom & Todd, 2005). To date, only a few studies have investigated the relationships between technostress, organizational IS-related support and user satisfaction, particularly in EHRM field (i.e., Tarafdar, et al., 2011). However, the study was conducted in United States among 233 end users of information communication of technology (ICT), and most of them worked at operational levels in middle-management positions in public sector. The findings of the study indicated that factors creating technostress reduced the satisfaction of individuals with ICT. On the other hand, organizational IS-related support was reported to have increased the level of user satisfaction towards ICT. In Malaysia, a few studies have investigated satisfaction among users towards EHRM (MAMPU, 2011; McPherson & Ramli, 2004; Mohd Azman, 2011; Noraswati, 2011). However, these studies examined users' satisfaction from different contexts. More efforts are needed, especially from the academics and practitioners, to probe deeply into the issue of EHRM.

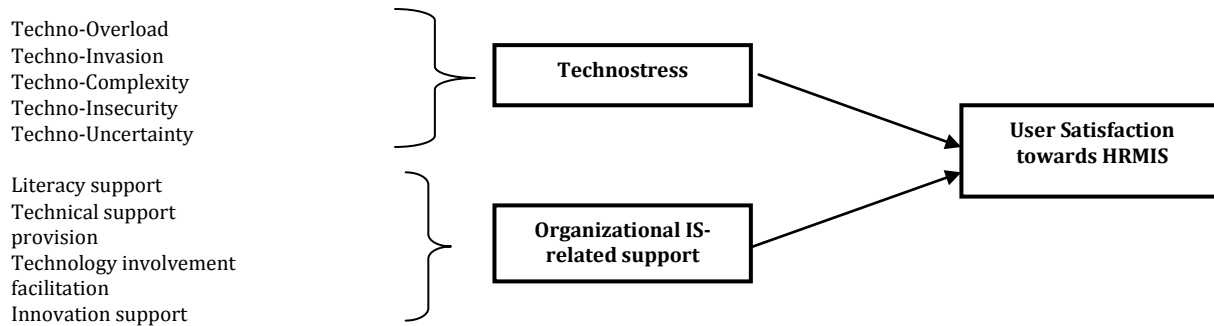
Technostress: Technostress is an any negative effect on human attitudes, thoughts, behavior, and psychology that directly or indirectly results from the use of computer-based ICTs (Tu et al., 2005). Wang et al. (2008) noted that Craig Brod defined the term technostress as "a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner". Then, Weil and Rosen expanded and presented a new definition of technostress as "any negative impact on attitudes, thoughts, behaviors or psychology caused directly or indirectly by technology". Wang et al. (2008) summarized and noted that technostress was a "reflection of one's discomposure, fear, tenseness and anxiety when one is learning and using computer technology directly or indirectly, that ultimately ends in psychological and emotional repulsion and prevents one from further learning or using computer technology". Tarafdar et al. (2007) said that there were five conditions that end users deal with as a result of their using the technology. These conditions were identified as stressors associated with the use of technology, namely, techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty. Techno-overload refers to situations in which managers tend to communicate more information than is necessary and receive more information than they can effectively process and use effectively. Due to techno-invasions, users feel that they are never free of technology. They think that they are always under supervision and their lives have been invaded. With regard to techno-complexity, users have to spend more time learning how to use ICT. Sometimes they feel that the variety of applications and functions are intimidating and do not understand how and why they need to use these applications and their functions. Due to techno-uncertainty, systems are always in upgrading and maintaining processes that require users to learn regularly how to work with the new applications. These constant changes will make users unsatisfied with the systems. Techno-insecurity refers to situations in which users feel threatened about losing their jobs either to other people who have better knowledge and skills of the technology or to automation impacts from new technology. Furthermore, existing studies have validated, investigated and interpreted the phenomenon of technostress in various fields (Ayyagari et al., 2011; Bradshaw & Zelano, 2013; Lee et al., 2012; Ragu-Nathan, et al., 2008; Raja Zirwatul Aida, Azlina, & Siti Balqis, 2007; Salanova et al., 2012; Sami, 2006; Shepherd, 2004; Tarafdar, et al., 2011; Tarafdar et al., 2007; Tarafdar, et al., 2011; Tu et al., 2005; Ungku Norulkamar et al., 2009; Wang & Shu, 2008; Wang et al., 2008). However, relatively few studies in

information system (IS) literature provide evidence on the influence of technostress on user satisfaction towards certain computer systems applications.

Organizational IS-related Support: In the present study, organizational IS-related support consists of literacy facilitation, technical support provision, technology involvement, and innovation support. Tarafdar, et al. (2011, pp. 118-119) have referred to these four organizational IS-related supports as inhibiting mechanisms of technostress which, at the same time, increase satisfaction towards IS. Literacy facilitation refers to the “mechanisms that educate through sharing of IS-related knowledge”. Training and documentation are two examples that can be used by an organization to increase IS related awareness. The technical support provision is defined as the “assistance and technical support provided to professionals in the context of their use of IS”. For instance, a quick-response and effective help desk can help users in using and becoming familiar with the system. Technology involvement facilitation describes “mechanisms that keep professionals involved in information system adoption and development”. The involvement of users in the planning and implementing processes will help them to be familiar with a new system and reduce the techno-complexity, enhancing satisfaction. Innovation support describes “mechanisms that encourage professionals to experiment and learn”. This mechanism requires management to take several actions such as, promoting supportive relationships among employees, facilitating communication and discussion, encouraging new ideas and providing incentives for learning. All the actions might help users to be more innovative and explorative in using the IS. Various studies have examined the effect of organizational support related to IS on user satisfaction and implementation of IS (Doll, 1985; Dong et al., 2009; Hartwick & Barki, 1994; Jarvenpaa & Ives, 1991; Lee et al., 2009; Mahmood et al., 2000; Mark et al., 2012; Ragu-Nathan, et al., 2008; Rouibah et al., 2009; Sabherwal, et al., 2006; Sanchez-Franco, 2009; Tarafdar, et al., 2011; Thong et al., 1996).

The Proposed Research Framework and Hypotheses: The research framework of the present study is adapted from the work of Tarafdar, et al. (2011), as show in Figure 1 below. Figure 1 depicts that technostress and organizational IS-related support influence user satisfaction towards HRMIS.

Figure 1: Proposed research framework



Previous studies have mentioned that technology is one factor that causes stress in the work place (Cooper, Dewe, & O’Driscoll, 2001). The continuous changes and advancement of ICTs in the workplace have brought a new phenomenon known as technostress (Ragu-Nathan et al., 2008). According to Ragu-Nathan et al., technostress exists when an individual experiences problems with adaptation of ICTs and is unable to cope with or get used to the technologies in a healthy manner. The components of technostress consist of techno-overload, techno-invasion, techno-complexity, techno-insecurity and techno-uncertainty (Ragu-Nathan, et al., 2008). Based on the five conditions of technostress, managers tend to communicate more information than is necessary and receive more information than they can process and use effectively. As a result, they are unable to identify that which is actually useful information. Thus, this situation leads them to dissatisfaction with the content and outputs of the systems they use. This situation is referred to techno-overload. Techno-invasions mean that users feel that they are never free of technology, and they think that they are always under supervision and their lives has been invaded. They feel the blurring of boundaries between the home and the workplace, making them unsatisfied with the applications they are using. With regard to techno-complexity, users have to spend more time learning how to use ICT. Sometimes they feel that the variety of applications and functions are intimidating and do not understand how and why they need to use it. Furthermore, if the system is still unstable and the technical support is not always available when needed, users feel that systems are not friendly, timely, or accurate. As a result, dissatisfaction and frustration will exist. Due to techno-uncertainty, systems are always in upgrading and maintaining processes that require users to learn regularly how to work with new applications. These constant changes make users unsatisfied with the systems. Finally, users can feel threatened about losing their jobs, due to inability to adapt with the work processes relating to new ICT. Thus, users have negative assessments about system user-friendliness and adequacy of computer knowledge, leading to dissatisfaction with the system used. The findings of the study by Ragu-Nathan, et al (2008) indicated that factors that creating technostress reduce the satisfaction of individuals with the ICT. In other words, significant relationships exist between both variables.

Several studies have confirmed that these situations have brought a significant negative impact on work outcomes such as job satisfaction, organizational commitment, innovation, productivity, and performance (Lee et al., 2012; Sami, 2006; Tarafdar, et al., 2011; Tarafdar et al., 2007; Tu et al., 2005; Ungku Norulkamar et al., 2009; Wang et al., 2008). In fact, a few studies have identified a negative effect on end-user satisfaction (Tarafdar, Tu, & Ragu-Nathan, 2011; Tarafdar, Tu, Ragu-Nathan, et al., 2011). Many of the previous studies have reported a positive relationship between organizational support and user satisfaction. However, a few studies have presented inconsistency evidence to support the relationship between the variables (Dong et al., 2009; Hwang & Schmidt, 2011; Mark et al., 2012). Therefore, further investigation should be conducted to confirm the relationship between organizational support and user

satisfaction. Moreover, a study conducted by Ragu-Nathan et al. (2008) has developed and validated a new instrument and terms of organizational support or inhibiting mechanisms, namely, literacy support, technical support provision, technology involvement facilitation and innovation support. They suggest that future studies should further investigate the instrument on a larger scale. The effect of technostress and organizational IS-related support in an individual's satisfaction is an issue that has so far not been addressed adequately. Therefore, a continuous effort should be taken to identify the effects of technostress and organizational IS-related support at the workplace. Based on the above discussions, the following hypotheses are thus proposed in this study.

- H1: Technostress (techno-overload, techno-invasion, techno-complexity, techno-uncertainty, techno-insecurity) is negatively related to user satisfaction.
- H2: Organizational IS-related support (literacy support, technical support provision, technology involvement facilitation and innovation support) is positively related to user satisfaction.

3. Conclusion

In this paper, we present an overview of EHRM, technostress, organizational IS-related support, and user satisfaction. In addition, a compilation of previous studies about related variables in this study are also presented. Based on the arguments, two main hypotheses have been proposed to be related with user satisfaction. The results from the present's research model will provide useful insights in the EHRM area. The findings also can be used as a guide in understanding the phenomenon of technostress and organizational IS-related support, particularly in the EHRM implementation in government organizations of Malaysia.

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