

Exploratory Study of the Impacts of New Technology Implementation on Burnout and Presenteeism

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Received: August 5, 2013

Accepted: September 13, 2013

Online Published: October 15, 2013

doi:10.5539/ijbm.v8n22p92

URL: <http://dx.doi.org/10.5539/ijbm.v8n22p92>

Abstract

Innovation improves organizational productivity and provides a competitive advantage. However, the implementation of new technology may have a negative effect on employees' health, which has received a limited attention in the literature. This exploratory study, based on documentary analysis, in-depth interview and observation, examines the effect of the implementation of Banner (a new administrative and information system) at a higher education institution on employees' mental health. Despite the effort invested by the institution to facilitate the implementation stage and the adoption of the new system, the findings report an increased job demand perception, stress, exhaustion, absenteeism, and presenteeism among users. Presenteeism and staff welfare are on opposite sides. An employee who turns up sick accentuates his illness and becomes less efficient. Indeed, sick presence increases sick absence and turnover. Employees who have worked for the organization for several years and those who are close to retirement should be given special attention. They seemingly feel more frustration because of the lack of support and recognition. Finally, the findings stress the role of social support at work to reduce the negative effects of the implementation of a new technology.

Keywords: new technology implementation, technology acceptance, burnout, presenteeism

1. Introduction

The work environment may have a positive effect on employees' satisfaction and well-being, resulting in a sense of fulfillment and job satisfaction. The workplace may also represent a source of physical and mental fatigue, inducing long-term negative consequences on health, such as stress and burnout. Employees exposed to technology are more susceptible than others to feel stress, emotional exhaustion, and psychological distress. The TAM (Technology Acceptance Model), developed by Davis (1989), specifies that the adoption of a new technology depends on two important factors: the perceived usefulness and the perceived usability. When employees perceive the technology as difficult to use and have less control over the technological tools at work, they are more prone to experience technology-related stress. The techno-stress refers to the fear of an inability to cope with technology (Wang, Shu & Tu, 2008). This "phobia" can increase psychological anxiety (Wang et al., 2008). The implementation of new technology is a transition and critical period that may have a detrimental effect on employees' physical and mental health, leading to burnout and even presenteeism.

The increase of presenteeism and absenteeism can be explained by the change in working conditions, especially the increased use of new technologies. The technological boom of the past three decades has created new demands and increased pressure on organizations, which impacted on employees' well-being. However, the literature has little studied the impact of technology on the mental health of workers (e.g., stress, anxiety, emotional exhaustion, and depersonalization), and presenteeism (i.e., showing up at work ill). Indeed, techno-stress (stress engendered by the use of new technologies) has been addressed theoretically, but few studies have empirically examined its consequences (Rajeswari & Anantharaman, 2003). This study examines the effect of technology implementation on burnout and presenteeism. Implementation is the "critical gateway between the decision to adopt the innovation and the routine use of the innovation within an organization" (Klein & Sorra, 1996, p.1057). This critical transition period may have detrimental effects on employees' well-being and organizational performance. This study reports on the implementation and use of a new administrative software application 'Banner' in a higher-education institution.

2. Literature Review

2.1 Burnout

Maslach, Jackson, and Leiter (1996) defined burnout as “a state of exhaustion in which one is cynical about the value of one’s occupation and doubtful of one’s capacity to perform”. Burnout is a multifaceted syndrome involving emotional exhaustion, depersonalization, and personal accomplishment. Emotional exhaustion denotes feelings of being emotionally drained and depleted; depersonalization (referred to as cynicism) denotes feelings of detachment from work; personal accomplishment refers to one’s feeling of capability and successful achievement at work (Maslach, 1982, 1983; Maslach & Jackson, 1986; Schaufeli & Greenglass, 2001). Burnout is a result of low levels of personal accomplishment, and high levels of emotional exhaustion and depersonalization (Maslach, 1993). Burnout (depersonalization and emotional exhaustion) and job demand are reciprocal (Demerouti, Le Blanc, Bakker, Schaufeli, & Hox, 2009). We can expect that the implementation of new technology will increase perceived job demand, leading to increased levels of emotional exhaustion and depersonalization, and reduced levels of personal accomplishment.

2.2 Presenteeism

Presenteeism is an emerging phenomenon that was introduced in the literature by the end of the 1990s (Johns, 2010). Presenteeism is “the phenomenon of employees staying at work when they should be off sick” (Demerouti et al., 2009, p. 50). Sick presence may have a detrimental effect on employees’ mental health (Kivimäki et al., 2005) and represents a risk factor for future sick absence (Aronsson, Gustafsson, & Dallner, 2000; Bergström, Bodin, Hagberg, Aronsson, & Josephson, 2009). Caverley, Gunningham, Barton, & MacGregor (2007) reported five top reasons that employees give for sick presence: having no back-ups in their work department, heavy workload (i.e., large volume of workload to be handled on a daily basis), the need to meet deadlines, work commitments (meetings), and self-perception of not feeling so bad to come to work.

For several years, organizations have been engaged in managing absenteeism through various methods to enhance the presence at work. However, recent studies show that a large number of employees come to work while having physical or psychological problems that undermine their performance at work (Aronsson et al., 2000; Demerouti et al., 2009; Hansen & Andersen, 2008). For instance, Hansen and Andersen (2008) reported that 73% of employees have at least one episode of sick presence over a one year. Aronsson et al. (2000) reported that occupations that provide direct services to people such as the education sector, and care and welfare sector, have a substantially high risk of being prone to presenteeism. Several studies point out that presenteeism costs more than absenteeism (Goetzel et al., 2004; Caverley et al., 2007). Goetzel et al. (2004) estimated presenteeism costs to approximately US\$255 per employee per year. The short and long term costs of presenteeism are underestimated as they are difficult to assess (lack of productivity, temporary replacement, low-service performance, and recruitment and training of a new employee).

Presenteeism may become worse in the context of the implementation of a new technology that is accompanied by an increased perceived workload and a certain degree of reluctance to its adoption (i.e., low-perceived usefulness and difficulties related to its use). Presenteeism gives rise to feelings of burnout because of insufficient recovery (Demerouti et al., 2009). In turn, burnout leads to an accumulation of the workload and decreases the energy to cope, causing a more accentuated presenteeism (Demerouti et al., 2009).

3. Method

This research examines the implementation of Banner in a Canadian higher-education institution. Banner is an administrative software application. Banner is a highly-integrated system that maintains and queries students’ (and alumni’) data. Since the implementation of Banner, studies agents and advisors report a dramatic increase in their workload. Several employees expressed high dissatisfaction with the use of this software that does not respond to their expectations and needs. As a result, these employees report relatively less enthusiasm, and high levels of stress and fatigue. Indeed, sick absenteeism increased in the months following the implementation of the new system. The implementation of the Banner system is seemingly accompanied by burnout (e.g., stress and emotional exhaustion) and presenteeism among users (agents and advisors).

For this study, we used several types of data. First, a documentary analysis based on the comments reported by Banner users in an independent study conducted a few months following the implementation of the new software; second, an in-depth interview of approximately one hour and a half long was conducted with one user (studies agent). The guideline for the depth interview included several topics such as workload, perceptions and use of Banner, social support at work, well-being/burnout, and presenteeism/absenteeism; third, one hour of non-participant observation of the interviewee’s work environment (e.g., job demand, task handling, and social

interaction at work).

4. Results

New technologies' perception is an organizational factor that highly explains (negatively) burnout and presenteeism. In particular, the data analysis shows that users expressed different degrees of reluctance (e.g., avoidance and unenthusiastic use) in adopting the new management system (Banner) during its implementation stage. The complexity of use of the Banner software negatively influenced its acceptance. Employees who were accustomed to using the previous system were more reluctant and reported an avoidance attitude toward Banner. They perceived a higher job demand because of the increased technology complexity. Faced with new complicated software, employees mentioned that they perceived themselves as not being able to properly meet the students' requests (i.e., reduced personal accomplishment) and to promptly provide follow-up. Agents and advisors felt that they couldn't perform their tasks as well as they once could, they have to handle a heavy workload and work fast enough in order to complete work on time. This resulted in frustration and exhaustion. One user reported that she became skeptical about her efficacy at work. The users reported the following comments:

"...Yes, frustrated, I think it would be the right word... it is never easy when you implement a new system... you are familiar with something else..."

"...I am frustrated of not being able to do my job properly and not being able to offer students a high standard of service quality due to an inefficient system..."

It should be noted however that users who developed skills and knowledge using the new system (Banner) found it more useful compared to the previous system. The interviewee reported the following comment:

"Like other colleagues, in the beginning I was critical toward the Banner system; but after use, I would not change it, I found it well done..."

The adoption of new technology associated with a higher level of job demand led to a high degree of effort invested in meeting clients' (students) requests. This situation increases the probability that employees attended work ill to avoid performance decrement. They may have felt pressure to attend, despite a risk of being counter-productive. This pressure to show up at work ill could cause a deterioration of employees' physical and mental health. Few employees mentioned that they had experienced burnout but turned up ill at work (sick presence). In fact, sick presence and burnout are reciprocal. Employees indicated that they felt a persistent fatigue due to an increased workload. They had the feeling of being emotionally drained, especially during the first weeks following the implementation of Banner. The users reported the following comments:

"My burnout is mainly related to the implementation of Banner".

"I always avoid taking sick absence because of the high workload".

"I feel very tired. For the first time in my life, I'm afraid to do a burnout".

"We love our work... but we feel completely depleted to be effective at work".

"I felt abandoned... I cannot complete my tasks as usual... and responding to students request due to difficulties with using Banner... Banner is impractical and complicated..."

According to the interviewee, a few employees retired –or had the intention to–because they were not ready to apprehend the new system. They were convinced that they need a long time to learn how to use it effectively. These employees were themselves forced to modify their work habits to adapt to the Banner system.

"Several colleagues were using the previous software for more than 20 years. The adoption of Banner was not unanimous. Then, there are many who retired because they do not want to learn the new software...".

Employees who were reluctant toward this new system experienced difficult moments inside and outside of work. One employee reported a deterioration of her physical and mental health such as heartburn and fatigue. She said she was getting demotivated at work.

"Because of Banner, I suffered from heartburn, fatigue, stress, lack of motivation, frustration... I was away for a month (pneumonia) due to high fatigue..."

The interviewee indicated that a social environment of mutual assistance and friendship was maintained between colleagues in her division. She adds that her director (hierarchical superior) recognized the commitment of the employees. She stressed the respectful bidirectional communication and exchange between employees and hierarchical superiors. The good relationship with the director (supervisor, team leader, director of operations) nurtured a collaborative working environment, and promoted the sense of team cooperation and respect among

colleagues, and between colleagues and directors. This supportive social environment at work reduced the psychological demand and the level of stress experienced at work. The Director's support was also an important buffer of the negative effects of the use of the new technology. Those who perceived less support from the organization felt overwhelmed with their job demand and were more prone to presenteeism. The interviewee emphasized the importance of social interactions with colleagues and her director's (supervisor) supportive attitude. She felt no pressure from colleagues about the decision to show up ill at work. Expecting her colleagues to replace her with tasks during her absence, she preferred to stay at home to recover instead of showing up ill at work. Indeed, the absence of insecurity at work comforted her decision to stay at home when she did not feel well (i.e., sick absence instead of sick presence). The favorable social work environment was confirmed by the observation exercise. The observed employee interacted several times with her colleagues. They were helping each other with different work-related tasks. During the observation, I heard several times the words "thank you", "perfect", or "ok, I would do it without a problem". Indeed, the observed employee received assistance from her colleagues on how to retrieve some information from the Banner system. Finally, I would note that it is a friendly team-working environment.

Conversely, another Banner user reported that sometimes she came to work ill because they lacked resources in her small division. She was indisposed to take a sick leave because she would have faced a backlog of tasks when she returned to work.

Another important issue was the employees' commitment to work. Most employees were highly-engaged in their work, which may explain, in part the sick presence occurrence. The employees still attended work while ill because they wanted to complete their tasks within the deadlines. Those for whom work is very important will attend work even when they feel sick. However, the relationship between commitment and presenteeism is not always true. For instance, one user mentioned that she likes her work, she is deeply involved and committed, but does not practice presenteeism. A further analysis of the data shows that this is explained by the nature of her relationship towards work. She underlines an important issue: even though she loves her work and the interaction with co-workers, she does not live to work. Her family is still her priority over work.

"I work to live... I do not live to work... My family really goes above all".

5. Conclusion and Discussion

This study shows that the implementation of a new technology in an organization can have negative effects on the employees' physical and mental health, job satisfaction/commitment, and productivity. When employees are over-loaded (e.g., working under pressure and responding to many students' requests at the same time), they become exhausted mentally and physically (i.e., feeling of burnout). If they work while they are sick because they are afraid to accumulate tasks during their absence, they could accentuate the symptoms of burnout, causing the loss-spiral (Demerouti et al., 2009). Sick presence is associated with migraines, fatigue, sleeplessness, tension headaches, depression, stomach aches, and asthma/breathing difficulties (Caverley et al., 2007; Demerouti et al., 2009; Goetzel et al., 2004). Its consequences are obvious: an accentuated burnout (high job demand and less energy to cope with it), absenteeism, and turnover.

Research on sick presence has become increasingly widespread over the last fifteen years (Aronsson & Gustafsson, 2005; Hansen & Andersen, 2008; Johns, 2010). However, the current knowledge on presenteeism is limited (Deremouti et al., 2009) and very scanty (Hansen & Andersen, 2008). This research contributes to the existing literature by evaluating the presenteeism phenomenon in a particular context (i.e., implementation of a new technology). This research, through the analysis of the interview's transcript, observation and documentary analysis, clearly demonstrates that the introduction of a new technology cause negative effects on employees' mental health and their commitment at work. This exploratory study supports the Caverley et al. (2007) findings showing that presenteeism is related to increased job demand and decreased supervisors support, trust in co-workers, job security, and job satisfaction. In the present study, the findings stress the importance of social support at work in reducing the negative effects of technology. Co-workers' support and the hierarchical superior's recognition decrease the psychological demand at work, the risk of mental health problems, thereby reducing presenteeism. This add support to Hansen and Andersen (2008) findings that employees who receive a high degree of social support at work will likely be absent rather than turn up ill at work.

Future research is encouraged to use longitudinal studies to evaluate the effect of new technologies on job demand, burnout, and presenteeism during and after the implementation of a new technology. In fact, the negative effects of a new technology diminish over time as employees become familiar with it.

Organizations have invested human and financial resources in the establishment of various programs intended to reduce absenteeism (Deremouti et al., 2009). However, they have ignored a more costly phenomenon that is

presenteeism. The reduction of presenteeism may become an organizational source of competitive advantage. This research would therefore help to raise awareness among practitioners (public and private organizations) to the reality of this phenomenon and develop mechanisms to reduce the level of presenteeism with the early identification of patterns. The organization must develop mechanisms that allow for the assessment of the mental health of employees and the prevention of presenteeism. Presenteeism must not remain a taboo phenomenon. As underlined by this research, employees who feel sick physically or mentally must be supported to prevent presenteeism and its adverse effects on the workers' health and productivity, and also the organization's survival.

Finally, the results of this study would alert organizations to the actual effect of the implementation of new technologies on the mental health of workers and their productivity. The introduction of a new technology in an organization must be structured. It is natural to predict a reduction in performance and in the execution level during the implementation. Organizations must consider some adjustment mechanisms to accompany employees in this complex process. Innovation improves organizational profitability, productivity, employees' morale and customer service standards, and provides a competitive advantage (Klein & Sorra, 1996). To reach these benefits, the implementation process must be accompanied by technical and human support. The implementation should be done gradually in order to facilitate employees' adaptation. Supervisors and managers must be aware of the importance of accompanying users, encouraging and supporting them in using the new skills and knowledge (i.e., how to effectively use the new technology) acquired in training (Kontoghiorghes, 2001).

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