

“Balancing the double-edged sword of technology within a modern university workplace”

AUTHORS	Liiza Gie Andre Slabbert Norbert Haydam
ARTICLE INFO	Liiza Gie, Andre Slabbert and Norbert Haydam (2017). Balancing the double-edged sword of technology within a modern university workplace. <i>Problems and Perspectives in Management</i> , 15(3), 425-437. doi: 10.21511/ppm.15(3-2).2017.10
DOI	http://dx.doi.org/10.21511/ppm.15(3-2).2017.10
RELEASED ON	Thursday, 07 December 2017
RECEIVED ON	Tuesday, 27 June 2017
ACCEPTED ON	Thursday, 26 October 2017
LICENSE	 This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License
JOURNAL	"Problems and Perspectives in Management"
ISSN PRINT	1727-7051
ISSN ONLINE	1810-5467
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

64



NUMBER OF FIGURES

5



NUMBER OF TABLES

1

© The author(s) 2025. This publication is an open access article.



BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10, Sumy,
40022, Ukraine

www.businessperspectives.org

Received on: 27th of June, 2017

Accepted on: 26th of October, 2017

© Liiza Gie, Andre Slabbert, Norbert Haydam, 2017

Liiza Gie, Doctor of Technologiae (Human Resource Management (HRM)), Head of Department: Human Resources Management, Cape Peninsula University of Technology (CPUT), South Africa.

Andre Slabbert, Professor, Research Manager: Faculty of Business, South Africa.

Norbert Haydam, Doctor, Senior Lecturer, Cape Peninsula University of Technology, South Africa.



This is an Open Access article, distributed under the terms of the [Creative Commons Attribution-Non-Commercial 4.0 International license](https://creativecommons.org/licenses/by-nc/4.0/), which permits re-use, distribution, and reproduction, provided the materials aren't used for commercial purposes and the original work is properly cited.

Liiza Gie (South Africa), Andre Slabbert (South Africa),
Norbert Haydam (South Africa)

BALANCING THE DOUBLE-EDGED SWORD OF TECHNOLOGY WITHIN A MODERN UNIVERSITY WORKPLACE

Abstract

Globalization has influenced the identity of universities worldwide to such an extent that they have become servants for economic growth by producing scientific knowledge and highly educated graduates. In a South African (SA) dispensation, the transformation of higher education (HE) focused on restructuring the system to meet the needs of a technology-orientated economy. The latter resulted in more specialized and complex university work that was reliant on technological devices for its completion. It is on this premise that the author investigated the extent to which technological devices as a 'job resource' kept SA University staff constantly connected to their work life.

This study was subject to a mixed methods research design whereby three data collection instruments were used to obtain both quantitative and qualitative data, which were combined via triangulation of factor analysis and theme identification. Purposive sampling included both academic and non-academic staff from a selected SA university. Stemming from the results, it became apparent that problematic merger issues led to inadequate workspaces, job resources and IT network. Consequently, staff were experiencing occupational stressors related to work overload and inadequate job resources, which perpetuated staffs' work-life transcending into their personal life, as they were constantly plugged into their technological devices to complete job tasks.

Keywords

technology, human capital, job resources, occupational stressors, and quality of work life and balance (QWLb)

JEL Classification

I15, I25, O15, O32

INTRODUCTION

The modern day workplace has evolved with the global socio-economic context from the Industrial Era (1650–1955) to the Information Era (1955–2030) (Ungerer, Herholdt, & Uys, 2006). The latter is characterized by globalization, technological advances and development of human capital intelligence (Maune, 2016). As organizations navigate the global business world to increase its competitive advantage, the importance of technology and human capital emerged as vital tools for sustainable economic growth. Technology, defined as "scientific knowledge used in practical ways in industry" (Oxford Advanced Learner's Dictionary, 2004) requires educated and highly-skilled people (human capital) (Khan, 2015) for its continued advancement.

Universities as institutions of higher learning are responsible for producing scientific knowledge and growing the pool of educated and highly-skilled people. The introduction of globalisation and technological advancement has resulted in a change in the way in which knowledge is constructed: it is now regarded as the ability to be innovative and/or add value to an existing product or service in the econo-

my (McKenna, 2012). Thus, universities output human capital who will continue to improve technology in order to remain economically competitive and relevant in a globalised market. It is evident that technology and human capital are interrelated which originates from universities as the incubator.

1. BACKGROUND TO THE STUDY

Dhobale (2009) reports that 21st century jobs have become more knowledge demanding, which may result in work overload, work pressure and job insecurity (Donaldson, 1993; Janice & Ho, 1997). In an attempt to hold onto their jobs, employees are spending more hours at work and on work-related activities as new technological devices such as laptops, BlackBerry, iPhone and Smart Phones blur the boundaries between work and personal life (Fittogether, 2004). The latter is posited in the assumption of a typical work day. It is assumed that a work day commences once the employee is at his/her desk but, in fact, the work day commences the moment the technological device, whether BlackBerry, iPhone or Smart Phone signals a new e-mail or text message from work. This is followed by travelling to work, attending meetings, conducting research, attending to briefings, catching up on what was not done yesterday...; and so it continues until, one morning, the person cannot get out of bed (Anon, 2011b). This notion is supported by Jaye (2010) who clarifies job stress as arising from minor events such as a faulty computer, slow network or non-stop ringing of telephones, to major events such as office politics, work overload and job insecurity. She cautions that consistent job stress, without a recovery period, causes chronic stress, resulting in burnout which could then become a debilitating disorder.

McKenna (2012) notes that the university is an integral part of society, as it is “both affected by and affects the ways in which society constructs itself”. She points out that the university has ever changing, dynamic relationships with society and the state, both of which are influenced by globalization. Therefore, it is not surprising that the university is being “...conceptualized in terms of its relationship to the economy”, where many view the role of higher education (HE) as the “primarily a servant for economic growth”. The globalized purpose of HE is to produce “work-ready graduates and patent-ready research” (McKenna, 2012).

Bezuidenhout and Cilliers (2010) support the latter by stating that, in SA universities, academics are under considerable pressure to increase their national and international research publications, improve and increase postgraduate students supervision, while lecturing larger classes than before. In keeping with the demands of 21st century jobs, university staff are also plugged into technological devices in order to grow human capital and improve technology for sustainable economic growth.

The problem investigated in this article is the extent to which technology has become a double-edge sword in the modern university workplace. On the one hand, technological devices are considered a job resource that is supposed to make university work easier and faster to deliver its outputs. On the other hand, the instant nature of technology keeps employees constantly plugged into their technological devices, which blur the boundaries between work and personal life. The purpose of this article is to promote equilibrium between technological devices as a job resource and staff quality of work life and balance within the modern university workplace.

2. LITERATURE REVIEW

The notion of technology as a double-edge sword is addressed in the context of the modern university workplace, specifically in a transformative environment such as SA. This is followed by an overview of occupational stressors experienced by university staff and the extent to which their quality of work life and balance is eroded.

2.1. Modern university workplace in South Africa

The introduction of democracy in 1994 led the reform of SA higher education institutions (HEIs) with “national political juncture and the macro-economic policy” of the state that set out priori-

ties for transformation of higher education (HE) (Lange, 2012). Two of the four priorities will be discussed in this article for context. Firstly, the priority focused on effectiveness and efficiency of HEIs. The HE White Paper clarified that "...effectiveness was the achievement of the desired outcomes, and efficiency referred to the lack of duplication and waste" (Lange, 2012). These two indicators led to the restructuring of the HE system via mergers and incorporations. Secondly, the priority of reform focused on responsiveness and development. Responsiveness was defined as HE's ability to meet the needs of a technology-orientated economy, produce scientific knowledge via research and develop highly skilled graduates (human capital). Development was defined as HE's ability to contribute to the common good of society by building human capacity and providing lifelong learning opportunities (South Africa, DoE, 1997).

Singh (2012) builds on the works of Currie and Newson (1998) who maintain that globalization, both in "...economic imperatives, as well as an ideology", has resulted in a dramatic change of social life, including changing the "...traditional understandings of the identity of higher education". The impact of globalization and technological advancement was identified by Dhobale (2009) as the changing nature of the 21st century workplace. Therefore, it is not surprising that the HE environment is also undergoing restructuring, placing the focus on "economic costs and benefits of higher education".

The Information Era, although advancing socio-economic interests, is not without its negative consequences. Aikins (2010) is of the opinion that "...recession-driven downsizing, employer demands, job disenchantment, and modern communications technologies that keep employees plugged into their jobs both day and night" are contributing to employee turnover. Wilmont, Williams, Guest, and Amos (2010) addressed the issue of diminishing number of university staff in SA. Previous research conducted by Klaas (2007) reported that SA HE is facing an exodus of staff and struggling with retention strategies. Nompula (2007) further identified eight key staff retention factors namely: 'hard' organizational factors, 'soft' organizational factors, relational factors, leadership factors, economic factors, individual factors, personal devel-

opment factors, and job factors. For the purpose of this article, only 'hard' organizational factors and job factors will be explained:

- 'hard' organizational factors: structural characteristics (Homburg, Fassnacht, & Guenther, 2000) such as organogram of institution, level of bureaucracy, policies and procedures, efficient and user-friendly information systems and processes (Amos, Ristow, Ristow, & Pearse, 2008; Homburg et. al., 2000);
- job factors: nature of employees' work: challenging, clear job expectations, and job resources (Amos et al., 2008).

Nompula (2007) found that the top three ranking factors were leadership, personal development and 'hard' organizational factors. Furthermore, Wilmont et al's. (2010) research findings revealed that "Opportunity to innovate and improve systems ['hard' organisational factors]" was listed as the top ten individual retention statements. It can be deduced that university staff retention strategies require innovative and up-to-date information systems (Wilmont et al., 2010), which are considered to be a vital job resource.

Furthermore, as the focus of SA HE changes to meet the transformation priorities, it can be expected that the nature of university work and job expectations (job factors) have changed as well. This assumption is supported by Becher and Trowler (2001), Barkhuizen et al. (2004), Olivier et al. (2004), and Pienaar and Bester (2009) who indicated that academics are expected to teach, conduct research and be engaged in community service projects. In addition, academics are expected to fulfil administrative duties with limited administrative support. It is evident that "...academic work is becoming more specialised and complex" (McInnis, 2000; Gillespie et al., 2001). In keeping with job factors as a university staff retention element, the aspect of job resources is equally important. Pienaar and Bester (2009) point out that if job equipment and working conditions are lacking and unsatisfactory, it becomes a career obstacle that prompts university staff to look for better job opportunities.

In the modern university workplace where the

nature of work has become more specialized and complex, staff retention requires innovative and up-to-date information systems in order to produce the desired HE outcomes in terms of human capital and scientific knowledge.

2.2. Occupational stressors

According to the WHO (World Health Organization), work-related stress occurs when employees experience work or job demands and pressure which exceed their knowledge, skills and abilities to cope. Furthermore, work-related stress stems from “stress-related hazards at work” such as work content and work context. Work content is intrinsic to the job and includes, but is not limited to, job content, workload and pace, working hours, job control, and participation in decision-making, which affects the immediate working environment. Work context includes, but is not limited to, the employee’s career development and promotion opportunities, job status and compensation package, job role in the organization, interpersonal relationships, organizational structure, climate and culture, and the extent to which work-life balance is promoted and respected in the workplace (World Health Organisation).

The correlations between work content with job factors, and work context with ‘hard’ organizational factors as discussed in university staff retention should be noted. It seems probable that work-related stress hazards and university staff retention elements are closely related.

Research studies conducted by Gillespie et al. (2001), Bellamy, Morley, and Watty (2003), and Barkhuizen et al. (2004) agree that the academic profession is considered to be “...one of the most stressful careers” (Pienaar & Bester, 2009). In this regard, Barkhuizen and Rothmann (2005) identified various academic occupational stressors; however, for the purpose of this article, only work overload and inadequate job resources (Blix, Cruise, Mitchel, & Blix, 1994; Boyd & Wylie, 1994; Cross & Carroll, 1990; Daniels & Guppy, 1994; Doyle & Hind, 1998; Kinman, 1998) are relevant.

As discussed previously, 21st century jobs have become more knowledge demanding, resulting in

work overload and constantly being plugged into technological devices (Dhobale, 2009). These may be classified as work-related stress which stems from the following:

- a. Work overload: Owing to the changes in the nature of work and work processes, employees are required to complete more job tasks than there is time for in a typical work day and work week (Dubrin, 1994; Greenberg & Baron, 1995; Michie, 2002; Dubrin, 2004).
- b. Video display terminal (VDT) stress: It was acknowledged that the modern workplace strongly relies on technological devices to stay in constant communication: with work while employees are at home; and with family while they are at work. Reynolds (1989) and Dubrin (1994) caution that the Information Era could be adding a new source of job stress, namely video display terminal (VDT) stress which “... is an adverse physical and psychological reaction to prolonged work at a video display terminal” (Dubrin, 1994). The necessity to carry around BlackBerry, iPhone, Smart Phones, etc., 24 hours a day, 7 days a week increases the risk of VDT stress.

Modern day stress manifests itself in physiological and psychological ailments, which adversely affect employees’ performance and productivity. The notion is supported by Jaye (2010) who explains that when an individual is experiencing a stressful event, the body secretes adrenaline which helps one to cope with stress. Any stressful event should be followed by a relaxation period in order for the body to recover. If this does not occur, the stress hormone cortisol builds up in large quantities which, in turn, erodes the body’s immune system and makes one vulnerable to illnesses. In today’s fast-paced lifestyle with increasing work demands, this relaxation period is often neglected, or the timing too little to allow for real recovery, which results in a state of chronic stress.

Prolonged chronic stress, if left untreated, results in burnout or exhaustion (Maslach, 1982). Authors like Rothmann, Barkhuizen, and Tytherleigh (2008) expand upon earlier burnout research to include the relationship between job demand and job resources. They draw on the works of Schaufeli

and Enzmann (1998) who state that employees develop burnout as a result of high job demands and lack of job resources. Demerouti, Bakker, Nachreiner, and Schaufeli (2001) developed the Job Demands-Resources (JD-R) model, which identifies job demands and job resources as the two broad elements of any working environment. Rothmann et al. (2008) found that a lack of job resources gave rise to academics feelings of cynicism and exhaustion. It is inferred that academics experience burnout when their job demands increase (work overload), while the job resources remains the same, or are inadequate to meet the job demands.

Moreover, authors like Armour, Caffarella, Fuhrmann, and Wergin (1987), Blix et al. (1994), Gillespie et al. (2001), Winefield and Jarrett (2001) state that academic and non-academic staff share similar occupational stress and burnout factors, including but not limited to, work overload, time constraints, changing job roles, inadequate management, inadequate resources and funding. Both academic and non-academic staff reported that stress affected them both professionally and personally (Gillespie et al., 2001).

2.3. Quality of work life and balance

The construct quality of work life and balance (QWLB) is underpinned by the overlapping interpretations of quality of work life (QWL) and work-life balance (WLB). Precise definitions of QWL and WLB are difficult to pinpoint, as many researchers have focused on various factors or elements in these programs. Shamir and Salomon (1985) offer the most comprehensive description of QWL relevant to this article as an employee's well-being in the workplace and the degree to which their work experiences are positive, stress-free and fulfilling (Rose et al., 2006). Lockwood (HR Magazine, 2003) offers a simple definition of WLB as "...a state of equilibrium in which the demands of both a person's job and personal life are equal" (The Word Spy, 2002). The common denominators in both programs are work organization and work scheduling. As mentioned previously, technological devices keep employees plugged into their work, blurring the boundaries between work and personal life. Therefore, QWL and WLB cannot be

separated and are in fact interrelated, as employees' work life transcends into their personal life.

According to the Association of University Teachers (2003), work overload and poor quality of work-life balance are reported as academics' two biggest stressors. This notion is supported by research findings of Kinman (1998), Kinman and Jones (2003) who state that academics experience blurred boundaries between work and home. In the latter study, 67% of academics reported that current workload "...encroached more on their home lives" than before; and 72% were of the opinion that this negatively impacted on their families. A further alarming factor is that academics are suffering poor psychological well-being as a result of work overload and poor quality of work-life balance (Daniels & Guppy, 1994; Winefield et al., 2002; Kinman & Jones, 2003). Research conducted by Gillespie et al. (2001) indicates that two-thirds of their respondents were experiencing "...feelings of anxiety, depression, anger, irritability, helplessness and burnout". Furthermore, organizations are also affected by their 'burned out' staff and report "...reduced organizational efficiency and work-related problems such as employee turnover, low morale, poor quality of care or service, lowered productivity, absenteeism and interpersonal problems" (Rosse, Boss, Johnson, & Crown, 1991; Levert, Lucas, & Ortlepp, 2000; Coetzee & Rothmann, 2004).

The modern university workplace, specifically in SA, is characterized by more knowledge demanding and specialized work that requires more innovative and upgraded information systems. However, the foregoing has given rise to occupational stressors related to work overload, VDT stress and inadequate job resources that adversely impact on university staff QWLB.

3. RESEARCH DESIGN AND METHODOLOGY

The interpretive or phenomenological approach applied in this study allowed the researcher to understand the everyday life experiences (Babbie & Mouton, 2001; Neuman, 2003) of university staff. This research mixed case study (typically a qualitative research design) and quasi-experimental

(typically a quantitative research design) with triangulation mixed methods (mixing qualitative and quantitative data) to strengthen the inferences, eliminate bias and improve validity of data (De Vos et al., 2013).

The case study unit was University X, the largest university and the only one affected by SA HE mergers, in its province. Thus, University X had the necessary characteristics of a modern university workplace with regards to a transformative university environment and revised focus on economic benefits to society. The quasi-experimental comparison group pretest-posttest design was used specifically for the employee wellness intervention that is not part of this article. Three data collection instruments were applied namely (1) employee wellness questionnaire that produced the quantitative data; (2) focus group discussions and (3) wellness reflection journals that produced the qualitative data. Triangulation of data was facilitated by the 13 factors identified in questionnaire factor analysis, which was used as qualitative themes.

Purposive sampling was applied that included both academic and non-academic staff, as they shared similar workplace and occupational stressors (Gillespie et al., 2001) that best serve the purposes of this research (Monette et al., 2005; Grinnell & Unrau, 2008; De Vos et al., 2013). The target sample represented 22.4% of permanent academics and 20.4% of permanent non-academic

staff at University X. Forty-nine completed original survey questionnaires were received, which was sufficient to conduct basic statistical analysis (Grinnell & Williams, 1990). The quasi-experimental pretest-posttest consisted of 18 experimental group and 20 control group participants that were sufficient for a case study (Huysamen, 1991).

This article specifically focuses on technological devices as job resources; hence, only one employee wellness factor, namely wellness working environment, was extracted and discussed.

4. RESULTS AND DISCUSSION

The employee wellness factor, wellness working environment, consisted of eight questionnaire statements as illustrated below in Table 1, which are closely related to job factors (Amos et al., 2008) and work content (World Health Organisation). The Cronbach's alpha coefficient was 0.8918, which indicates high reliability of the results for this factor.

Triangulation mixed methods combined, with equal importance, both quantitative and qualitative data together for comparison and interpretation (De Vos et al., 2013). The quantitative data were summarized with descriptive statistics, while the qualitative data were reduced with theme identification synonymous to the employee wellness factors.

Table 1. Cronbach's alpha coefficient for employee wellness factor 2: wellness working environment

Factor 2 – wellness working environment				
No	Statements	Variable no.	Correlation with total	Cronbach's alpha coefficient
10	I have the ability to concentrate on my job tasks	Pre_Q10	0.4935	0.8944
19	Equipment necessary to perform my job functions are working and available for usage	Pre_Q19	0.6929	0.8764
21	I feel valued at work	Pre_Q21	0.7127	0.8744
24	I feel safe at work	Pre_Q24	0.6886	0.8770
26	I receive recognition for work well done	Pre_Q26	0.5500	0.8893
43	I work in a healthy environment with respect to clean air, water and indoor pollution	Pre_Q43	0.7104	0.8748
61	I have a work space that is fully equipped with a desk, chair, computer, telephone, air conditioning and adequate lighting	Pre_Q61	0.7096	0.8755
65	Equipment necessary to perform my job functions are available for usage	Pre_Q65	0.8183	0.8638
Cronbach's alpha coefficient for raw variables				0.8923
Cronbach's alpha coefficient for standardized variables				0.8918



Figure 1. Talents utilized

Addressing university job factors and the changing nature of work (job demands), two statements, one from engagement factor and another from wellness working environment is combined for analysis as shown in Figure 1 above.

Figure 2 illustrates that the majority of respondents (44.9 + 18.4 = 63.3%) reported that their current job utilized their strengths and talents, compared to 36.7% who did not experience this.

The majority of respondents at University X (95.5%) indicated that they had the ability to concentrate on their job tasks. Combining the above responses: utilization of talents and strengths, and ability to concentrate, it could be assumed that the majority of respondents were meeting their job demands at University X. Moreover, it seems probable that they experienced challenging work that met their expectations of work content (World Health Organization) in a transformative university work environment.

Job resources, a further feature of job factors (Amos et al., 2008), were analyzed in terms of the Job Demands-Resources (JD-R) model (Demerouti et al., 2001).

A substantial percentage of respondents (61.2%) concurred that they had a workspace that was fully equipped with a desk, chair, computer, telephone, air conditioning and adequate lighting, compared to 14.3% who disagreed and 24.5% who strongly disagreed (Figure 3). Focus group discussions with both control group and experimental group respondents revealed that academic and non-academic staff experienced similar workspace problems, which originated from the movement of staff from one campus to another after the merger. Firstly, administrative (non-academic) staff had an open plan office layout, whereas many academics were sharing offices, which resulted in both staff groups experiencing a lack of privacy. The lack of privacy negatively impacted on academics' consultations with students, as there was no confi-

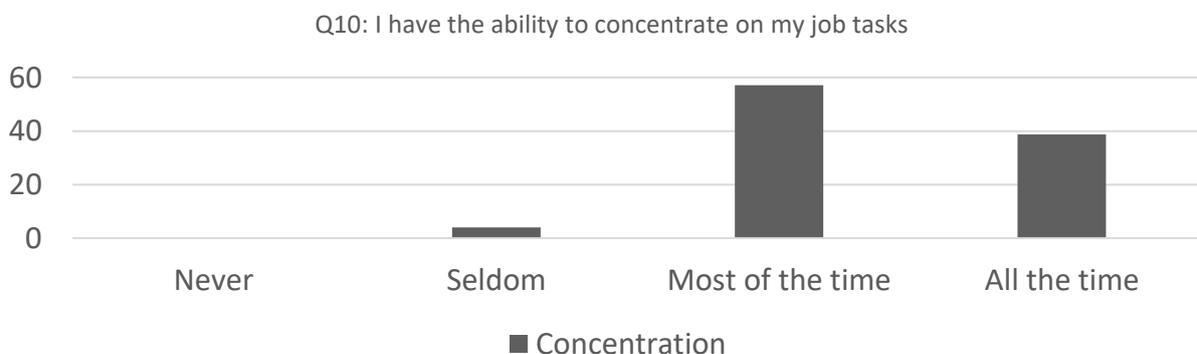


Figure 2. Concentration

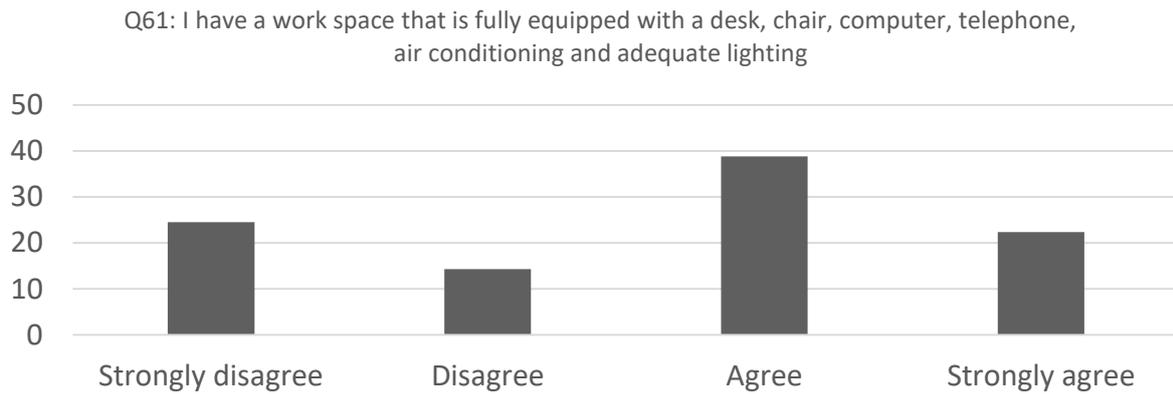


Figure 3. Workspace

dentiality for the students. Secondly, limited available space also meant limited storage facilities, which resulted in offices being stacked with boxes of students' exam papers and unwanted furniture placed in corridors. Lastly, office desks and chairs were not conducive for working long hours at the computer which resulted in staff experiencing back- and neck aches (physiological symptoms). Moreover, it was revealed that some staff had to organize their own office furniture and waited for up to six months for an office computer. Although the quantitative data reported that 61.2% of respondents had sufficient workspace, the qualitative data revealed that staff facilities were undesirable and not always available.

Figure 4 illustrates that the majority of respondents (69.4%) indicated that the equipment necessary to perform their job functions was not working and available for usage, compared to 30.6% who reported that they had functioning equipment available for their work. Focus group dis-

cussions clarified the four main aspects lacking in University X's job resources namely (1) classroom facilities, (2) teaching equipment, (3) printers and photocopy machines, and (4) Information Technology (IT) network. Firstly, classrooms were poorly laid out with limited space for students' group work activities; there were too few tables and chairs for students, poor lighting and no air conditioning. Secondly, owing to the lack of teaching equipment in classrooms, academics shared limited laptops and data projectors for teaching. This resulted in academics carrying portable equipment between buildings and they were often tired when they arrived for class. Thirdly, staff were sharing printing and photocopy machines which often did not work. Lastly, frequent network problems resulted in unreliable Internet and e-mail usage. Although staff logged calls with the IT department to address the printing, photocopying and network problems, often nothing happened and the problems were ignored owing to central delays.

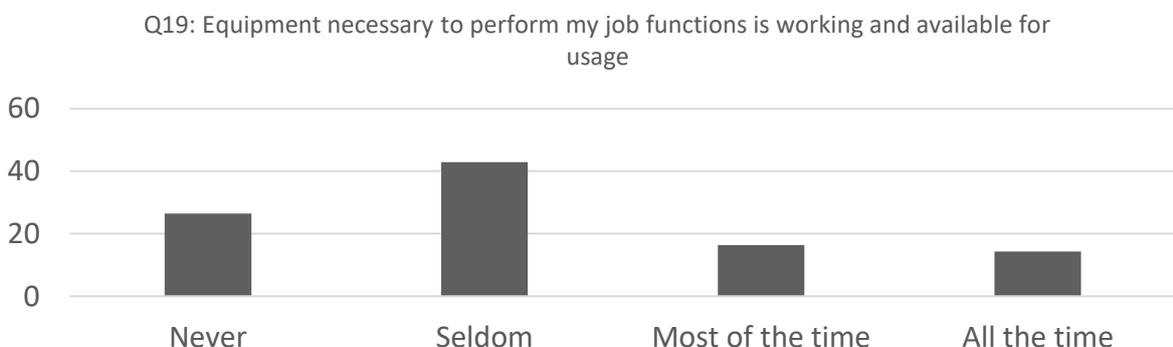


Figure 4. Working equipment

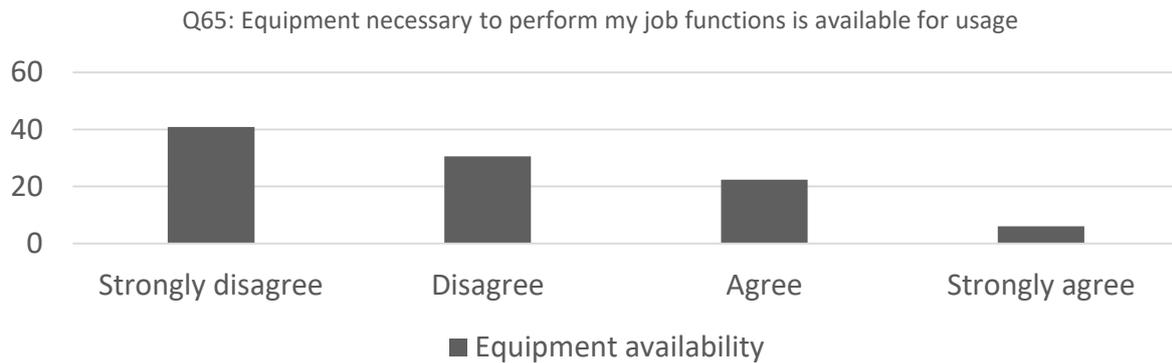


Figure 5. Equipment availability

The wellness reflection journal entries captured individual perceptions and attitudes regarding the lack of job resources at University X: there were too few (and small) classrooms with no teaching equipment, which resulted in academics sharing laptops and data projectors; often they had to walk long distances between classrooms and lecture theatres while carrying heavy loads, including equipment. There was only one printer and photocopy machine for 50 staff members on one floor, with no maintenance of the machine, and no spare paper that resulted in staff walking up and down various floors to find a working printer; an unreliable network resulted in an e-mail system and printers that were often not working owing to the lack of IT support. It was confirmed that staff generally “never expected anything to work” and tried to get work done before going to campus, mostly working from their home computer (as University X’s network was unreliable) and often paid for students’ printing and photocopies from their personal money, which resulted in some often being broke in the middle of the month. Furthermore, there were always deadlines which were difficult to meet owing to a lack of job resources, resulting in staff taking work home to complete with their own equipment, staff spent limited time in a non-working environment as a means to cope with the lack of resources, which often affected their emotions (psychological symptoms).

Figure 5 illustrates that the majority of respondents (71.4%) indicated that the equipment necessary to perform their job functions was not available for usage. The qualitative data regarding working equipment revealed that academics shared limited laptops and data projectors within a department via a booking system. It was deduced that limited equipment may be booked out resulting in academics

going to lectures without any teaching equipment. Furthermore, the unreliable university IT network adversely affected e-mail and printing facilities that resulted in academics and non-academics taking work home to complete with their own equipment.

It was surmised that both academic and non-academic staff possessed the talents, strengths and concentration required to complete specialized and complex university work (McInnis, 2000; Gillespie et al., 2001). However, constant deadlines, unreliable network, internet and e-mail usage with limited working equipment had contributed to staff work overload as job tasks were often not completed in a work-day and taken home to finish with their own equipment. The lack of job resources had inadvertently contributed to work overload (Dubrin, 1994; Greenberg & Baron, 1995; Michie, 2002; Dubrin, 2004). Furthermore, university staffs’ prolonged exposure to technological devices in order to complete job tasks at work and at home, developed into VDT stress (Reynolds, 1989; Dubrin, 1994). This was evident in staff responses of experiencing back- and neck aches (physiological symptoms) owing to inadequate and unsatisfactory job resources, which also affected their emotions (psychological symptoms). The research results indicated that University X’s staff was experiencing work-related stress from work overload and VDT stress. This notion is supported by Jaye (2010) who clarified that job stress arises from work overload, faulty computer and slow network.

An unintended consequence of HE mergers was the problematic movement of staff from one campus to another that resulted in inadequate workspaces, job resources and IT network. The research results revealed that University X was struggling with

its 'hard' organizational factor: efficient and user-friendly information systems and processes (Amos et al., 2008; Homburg et al., 2000), as well as the job factor: job resources (Amos et al., 2008, p. 174). It was evident that the merger negatively affected University X's work environment as staff were experiencing occupational stressors related to work overload and inadequate job resources (Barkhuizen & Rothmann, 2005; Blix et al., 1994; Boyd & Wylie, 1994; Cross & Carroll, 1990; Daniels & Guppy, 1994; Doyle & Hind, 1998; Kinman, 1998). Moreover, it seemed probable that University X's staff was at risk of developing burnout owing to their work overload as the job resources were inadequate to meet the job demands (Schaufeli & Enzmann, 1998; Demerouti et al., 2001).

The work context at University X was also considered to be hazardous as staff work-life balance was neither promoted nor respected (World Health Organization). University X's staff reported that there were always deadlines which were difficult to meet owing to a lack of job resources, resulting in them taking work home to complete with their own equipment. The latter confirmed that staffs' work life transcend into their personal life as they were constantly plugged into their techno-

logical devices to complete job tasks. This is synonymous with the research findings of Kinman (1998) and Kinman and Jones (2003) who stated that academics reported that their current workload "...encroached more on their home lives" than before and blurred boundaries between work and home. Furthermore, the Association of University Teachers (2003) reported that work overload and poor quality of work-life balance were identified as academics' two biggest stressors. A further alarming factor is that these stressors resulted in academics suffering poor psychological well-being (Daniels & Guppy, 1994; Winefield et al., 2002; Kinman & Jones, 2003), which was congruent with University X as staff revealed their emotions were adversely affected by the lack of job resources. Taking into account that academic and non-academic staff share similar occupational stressors and burnout factors (work overload, inadequate resources) (Armour et al., 1987; Blix et al., 1994; Gillespie et al., 2001; Winefield & Jarrett, 2001) and both staff groupings participated in this research study, the results were generalized for both. It was deduced that University X staffs' quality of work life and balance was eroded owing to them being constantly plugged into their technological devices, at work and at home, in order to complete the job tasks.

CONCLUSION

It is acknowledged that the transformation of South African higher education (HE) resulted in the restructuring of institutions (HEI) via mergers in order to promote effectiveness and efficiency (Lange, 2012). Modern HEIs are required to respond to the technology-orientated economy by producing scientific knowledge via research and developing highly skilled graduates (human capital). Therefore, the modern university workplace requires work content and work context that underpins a productive working environment for both academic and non-academic staff. However, this research study found that University X was experiencing difficulties with regards to work content: job resources and work context: staff quality of work life and balance. If University X provides adequate job resources for their staff in order to complete their job tasks at work during the work day, it would reduce the amount of incomplete tasks staff take home, and in doing so, assist in restoring their quality of work life and balance.

In conclusion, this article set out to investigate the extent to which technology had become a double-edged sword in the modern university workplace. This research revealed that, if the supply of technological devices were disrupted and considered inadequate job resources, then it became an occupational stressor that stemmed from work overload and VDT stress. Furthermore, the side effects of inadequate job resources transcended to staffs' home life as incomplete job tasks were done at home with their own equipment; thus, prolonging the exposure to technological devices (VDT stress). It was surmised that the technological devices which was meant to support and improve work content, was in actual fact, killing staff quality of work life and balance. Finding equilibrium between technological devices and quality of work life and balance lies within the sufficient supply and utilization thereof at work and at home.

ACKNOWLEDGEMENT

The financial assistance of the National Research Foundation towards this research is acknowledged. Opinions expressed in this thesis and the conclusions arrived at, are those of the researcher, and are not necessarily to be attributed to the National Research Foundation.

REFERENCES

- Aikins, D. (2010). The modern workforce. *People Dynamics*, 16, January.
- Amos, T. L., Ristow, A., Ristow, L., & Pearce, N. J. (2008). *Human Resource Management* (3rd ed.). Cape Town: Juta and Co. Ltd., pp. 174-175.
- Anonymous. (2011b). *Stress: how much more can we take?* Sunday Times: Business Times Money & Careers, 5, November 13.
- Armour, R. A., Caffarella, R. S., Fuhrmann, B. S., & Wergin, J. F. (1987). Academic burnout: Faculty responsibility and institutional climate. *New Directions for Teaching and Learning*, 29, 3-11.
- Association of University Teachers (2003). Survey of members. London: AUT.
- Babbie, E., & Mouton, J. (2001). *The practice of social research*. Cape Town: Oxford University Press, 28 p.
- Barkhuizen, E. N., Rothmann, S., & Tytherleigh, M. Y. (2004). Burnout of academic staff in a higher education institutions. Paper presented at the 2nd South African Wellness Conference. Potchefstroom, March 2004.
- Barkhuizen, N., & Rothmann, S. (2005). *Occupational stress of academic staff in South African higher education institutions* (Unpublished Ph.D. thesis, North-West University, Potchefstroom), pp. 84-87.
- Becher, T., & Trowler, P. R. (2001). *Academic tribes and territories* (2nd ed.). Buckingham: SRHE & Open University Press.
- Bellamy, S., Morley, C., & Watty, K. (2003). Why business academics remain in Australian Universities despite deteriorating working conditions and reduced job satisfaction: an intellectual puzzle. *Journal of Higher Education Policy and Management*, 25, 13-28.
- Bezuidenhout, A., & Cilliers, F. V. N. (2010). Burnout, work engagement and sense of coherence in female academics in higher education institutions in South Africa. *SA Journal of Industrial Psychology / SA Tydskrif vir Bedryfsielkunde*, 36(1), 10.
- Blix, A. G., Cruise, R. J., Mitchell, B. M., & Blix, G. G. (1994). Occupational stress among university teachers. *Educational Research*, 36, 157-169.
- Boyd, S., & Wylie, C. (1994). Workload and stress in New Zealand Universities. Wellington: New Zealand Council for Educational Research and the Association of University staff of New Zealand.
- Coetzee, S. E., & Rothmann, S. (2004). An adapted model of burnout for employees at a higher education institution in South Africa. *SA Journal of Industrial Psychology / SA Tydskrif vir Bedryfsielkunde*, 30(3), 29-40.
- Cross, G., & Carroll, D. (1990). *Goodwill under stress: morale in UK universities*. London: Association of University Teachers.
- Currie, J., & Newson, J. (1998). *Universities and globalization: critical perspectives*. Thousand Oaks, CA: Sage.
- Daniels, K., & Guppy, A. (1994). An exploratory study of stress in a British university. *Higher Education Quarterly*, 48, 135-144.
- De Vos, A. S., Strydom, H., Fouché, C. B., & Delpont, C. S. L. (2013). *Research at grass roots for the social sciences and human service professionals* (4th ed.). Pretoria, South Africa: Van Schaik Publishers, pp. 435-436.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands – resourced model of burnout. *Journal of Applied Psychology*, 86, 499-512.
- Dhobale, R. S. (2009). Stress management training: a boon to employee wellness! *The Icfai University Journal of Soft Skills*, 3(1), 39-44.
- Donaldson, S. I. (1993). Effects of lifestyle and stress on the employee and organization: implications for promoting health at work. *Anxiety, stress, and coping: An International Journal*, 6(3), 155-177.
- Doyle, C., & Hind, P. (1998). Occupational stress, burnout and jobs status in female academics. *Gender, Work and Organizations*, 5, 67-82.
- Dubrin, A. J. (1994). *Applying psychology: individual and organizational effectiveness* (4th ed.). Englewoods Cliff, NJ: Prentice Hall, pp. 180-184.
- Dubrin, A. J. (2004). *Human Relations: Interpersonal, Job – oriented skills* (8th ed.). Upper Saddle River, NJ: Pearson Prentice Hall, pp. 318-320.
- Fittogether (2004). Workplace Wellness Toolkit. Retrieved from <http://www.fittogethernc.org/WorkplaceWellnessAbout.aspx#62> (accessed on June 25, 2010).
- Gillespie, N. A., Walsh, M., Winefield, A. H., Dua, S. J., & Stough, C. (2001). Occupational stress in universities: staff perceptions of the causes,

- consequences and moderators of stress. *Work & Stress*, 15, 53-72.
27. Greenberg, J., & Baron, R. A. (1995). *Behavior in organizations: understanding and managing the human side of work* (5th ed.). Trenton, NJ: Prentice Hall, 250 p.
 28. Grinnell, R. M., & Unrau, Y. A. (2008). *Social work research and evaluation: foundations of evidence-based practice*. New York: Oxford University Press, 153 p.
 29. Grinnell, R. M., & Williams, M. (1990). *Research in social work: a primer*. Itasca, IL: Peacock, 127 p.
 30. Homburg, C., Fassnacht, M., & Guenther, C. (2000). The role of soft factors in implementing a service-orientated strategy in industrial marketing companies (Unpublished ISBM report 18). Mannheim: University of Mannheim.
 31. Huysamen, G. K. (1991). Steekproefgroottes in plaaslik gepubliseerde psigologiese navorsing [Sample sizes in locally published psychology research]. *Suid-Afrikaanse Tydskrif vir Sielkunde*, 21(3), 183-190.
 32. Janice, T. S., & Ho, C. (1997). Corporate wellness programmes in Singapore: effect on stress, satisfaction and absenteeism. *Journal of Managerial Psychology*, 12(3), 177-189.
 33. Jaye, J. (2010). Identify and address job stress. *HR Future*, 43 p., March.
 34. Khan, M. T. (2015). Development of Human Capital through Institution of Islamic Waqf. *International Journal of Information, Business and Management*, 7(3), 36-50.
 35. Kinman, G. (1998). *Pressure points: a survey into the causes and consequences of occupational stress in the UK academics and related staff*. London: Association of University Teachers.
 36. Kinman, G., & Jones, F. (2003). Running up and down the escalator: stressors and strains in UK academics. *Quality in Higher Education*, 9, 21-38.
 37. Klaas, N. P. (2007). *Factors influencing the retention of nurses in the rural health facilities of the Eastern Cape Province* (Unpublished Master's thesis. Pretoria: University of South Africa).
 38. Lange, L. (2012). The public purposes of the university: a historical view, 1995–2010. In Leibowitz, B. (Ed), *Higher education for the public good: views from the south* (pp. 45-57). Stellenbosch: Tretham Books in association with Sun Media.
 39. Levert, T., Lucas, M., & Ortlepp, K. (2000). Burnout in psychiatric nurses: contributions of the work environment and a sense of coherence. *South African Journal of Psychology*, 30, 36-43.
 40. Lockwood, N. R. (2003). Work / life balance: challenges and solutions – 2003 Research Quarterly. *HR Magazine*, June. Retrieved from http://findarticles.com/p/articles/mi_m3495/is_6_48/ai_1029468781 (accessed on September 6, 2010).
 41. Maslach, C. (1982). *Burnout: the cost of caring*. Englewood Cliffs, NJ: Prentice Hall.
 42. Maune, A. (2016). Human capital intelligence and economic development. *Problems and Perspectives in Management*, 14(3), 564-574. [https://doi.org/10.21511/ppm.14\(3-2\).2016.13](https://doi.org/10.21511/ppm.14(3-2).2016.13)
 43. McInnis, C. (2000). Changing academic work roles: the everyday realities challenging quality in teaching. *Quality in Higher Education*, 6, 143-152.
 44. McKenna, S. (2012). Interrogating the academic project. In Quinn, L. (Ed.), *Re-imagining academic staff development: spaces for disruption* (pp. 15-26). Stellenbosch: Sun Media.
 45. Michie, S. (2002). Causes and management of stress at work. *Occup Environ Med*, 59, 67-72.
 46. Monette, D. R., Sullivan, T. J., & De Jong, C. R. (2005). *Applied social research: a tool for the human services* (6th ed.). Australia: Thomson Brooks/Cole, 184 p.
 47. Neuman, W. L. (2003). *Social research methods: qualitative and quantitative approaches* (5th ed.). Boston: Allyn & Bacon, 75 p.
 48. Nompula, T. I. (2007). *An exploratory investigation of the factors that influence the retention of knowledge workers at the national energy regulator of South Africa* (Unpublished Masters in Business Administration thesis). Grahamstown: Rhodes Investec Business School, 71 p.
 49. Olivier, M. A. J., Venter, D. J. H., & De Lange, N. (2004). Emotional intelligence of academics. Paper presented at the 2nd South African Wellness Conference, Potchefstroom, March 2004.
 50. Oxford Advanced Learner's Dictionary (6th ed.). (2004). Oxford: Oxford University Press, 1230 p.
 51. Pienaar, C., & Bester, C. (2009). Addressing career obstacles within a changing higher education work environment: perspectives of academics. *South African Journal of Psychology*, 39(3), 376-385. Retrieved from <http://sap.sagepub.com/content/39/3/376> (accessed on October 9, 2013).
 52. Rose, R. C., Beh, L., Uli, J., & Idris, K. (2006). Quality of work life: implications of career dimensions. *Journal of Social Sciences*, 2(2), 61-67.
 53. Rosse, J. G., Boss, R. W., Johnson, A. E., & Crown, D. F. (1991). Conceptualizing the role of self-esteem in the burnout process. *Group and Organization Studies*, 16, 197-204.
 54. Rothmann, S., Barkhuizen, N., & Tytherleigh, M. Y. (2008). Model of work-related ill health of academic staff in a South African higher education institution. *South African Journal of Higher Education*, 22(2), 404-422.
 55. Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study and practice: a critical analysis*. London: Taylor and Francis.
 56. Shamir, B., & Salomon, I. (1985). Work-at-home and the quality of working life. *Academic Management*, 10, 455-464.
 57. Singh, M. (2012). Re-inserting the 'public good' into higher education

- transformation. In Leibowitz, B. (ed), *Higher education for the public good: views from the south* (pp. 1-15). Stellenbosch: Trentham Books in association with Sun Media.
58. South Africa. Department of Education. (1997). *White Paper 3. A programme for the transformation of higher education*. Pretoria: Government Printer.
59. The Word Spy (2002). Work-life-balance. Retrieved from <http://www.wordspy.com/words/work-lifebalance.asp> (accessed on January 30, 2003).
60. Ungerer, M., Herholdt, J., & Uys, K. (2006). *Leveraging knowledge-based assets – The new value equation to create competitive advantage*. Johannesburg, South Africa: Knowledge Resources, 13 p.
61. Wilmont, C., Williams, B., Guest, J., & Amos, T. (2010). The factors that influence the retention of academics at a tertiary education institution: an exploratory study (pp. 1-22). *Proceedings of the 22nd Annual Conference of the Southern Africa Institute of Management Scientists, Mpekwani, 12-15 September 2010*.
62. Winefield, A. H., & Jarrett, R. J. (2001). Occupational stress in university staff. *International Journal of Stress Management*, 8, 285-298.
63. Winefield, A. H., Gillespie, N., Stough, C., Dua, J., & Hapuararchi, J. (2002). *Occupational stress in Australian universities: a national survey*. Melbourne, Australia: National Tertiary Education Union.
64. World Health Organization (n.d.). Occupational health: Stress at the workplace. Retrieved from http://www.who.int/occupational_health/topics/stressatwp/en/ (accessed on August 19, 2013).