

The influence of job-related factors on work engagement of staff at the University of the Free State

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The management of the University was in need of information regarding work wellness of the employees of the University. Therefore a study was launched to investigate the influence of job-related factors on the work engagement of university staff. A convenience sample, comprising 708 academic and support staff members working in a higher education institution, was used. The Utrecht Work Engagement Scale and the Job Characteristics Scale were used as measuring instruments. Data was processed with the aid of hierarchical regression analyses. The results indicated a moderate to high level of work engagement amongst university staff. Job-related stressors experienced by participants included a high workload, poor remuneration, increased home-work interference, and insufficient physical resources. The variables included explained 45.17% of the variance in absorption, 39.28% of the variance in vigour, and 33.66% of the variance in dedication. This indicates that many other factors, apart from the work-related factors included in this study, play an important role in the determination of employees' work engagement.

Die invloed van werkverwante faktore op die werksbegeestering van personeel by die Universiteit van die Vrystaat

Die doel van hierdie ondersoek was om die invloed van werkverwante faktore op die werksbegeestering van universiteitspersoneel by die Universiteit van die Vrystaat te ondersoek. 'n Beskikbaarheidssteekproef bestaande uit 708 akademiese en ondersteuningspersoneellede wat by 'n tersiêre opleidingsinstansie werk is gebruik. Die Utrecht Werksbegeesteringskaal en Beroepskenmerkveraelys is as meetinstrumente gebruik. Data is met behulp van hiërargiese regressie-ontledings verwerk. Die resultate dui op die teenwoordigheid van 'n matige tot hoë vlak van werksbetrokkenheid by universiteitspersoneel. Die werksverwante stressore wat deelnemers ervaar het, was 'n hoë werkslading, swak vergoeding, verhoogde gesinswerkinmenging en onvoldoende fisiese hulpbronne. Die ingeslote veranderlikes het 45.17% van die variasie in absorpsie, 39.28% van die variasie in energie en 33.66% van toewyding verklaar. Hierdie is 'n aanduiding dat vele ander faktore, buiten die werksverwante faktore ingesluit in hierdie studie, 'n belangrike rol speel in die bepaling van werknemers se betrokkenheid.

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South Africa and its workforce have undergone dramatic changes since the emergence of the new democracy in 1994.¹ South African universities have been confronted with a series of complex changes, challenging their mandates, traditional practices, authority and organisational structures (Cross *et al* 2002: 175, Hugo 1998: 5). In particular, higher education (HE) institutions in South Africa are constantly undergoing a process of transformation, in an attempt to move away from inherited apartheid practices (Dlamini 1995: 39, Hugo 1998: 5). One of the main goals of the socio-political transformation that was implemented after the election of a democratic government was the upliftment of previously disadvantaged communities. Emphasis was placed on the acquisition of knowledge and education, with a view to creating opportunities for previously disadvantaged South Africans to attain personal and financial wealth, in order to eradicate the gap between the advantaged white and disadvantaged black communities.

In the attempt to move toward a democratic society, one of the focus areas of redress was the education system (Fourie 1999: 278, Cross *et al* 2002: 171). At an institutional level, this boiled down to the introduction of policies and mechanisms aimed at redressing the apartheid legacy on different levels and significantly increasing access to HE (Kraak 2000: 34). Thus, access barriers, such as financial support, the admission criteria and language policies of institutions, were changed to facilitate the development of students from disadvantaged communities. One of the global phenomena in the changing landscape of HE institutions is the tendency towards expansion, involving a movement away from smaller, elite systems to institutions of mass student numbers, resulting in rapid growth and expansion of the HE industry (Gilbert 2000: 31, Kistan 1999: 125, Kraak 2000: 34). This massification of student numbers has led to a dramatic increase in the student : staff ratio, causing increased workloads and work pressure for staff. Very few additional resources were invested to support this expected growth (Clark 2000: 10). The increase in the number of students was coupled with an increase in cultural diversity, presenting

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a further obstacle that staff were expected to deal with (Fourie & Alt 2000: 117). Many disadvantaged students who obtained access were not prepared for the demands of HE. Therefore, they required more intensive training and attention, thus adding to the pressure placed on university staff (Fourie 1999: 282).

In the case of Afrikaans-medium universities, including the University of the Free State (UFS) where this investigation was conducted, government pressure to change the medium of instruction, in order to increase access for non-Afrikaans-speaking black students, has increased since 1994 (Coetzee & Rothman 2004: 29). However, the UFS is the only traditionally Afrikaans university that is now parallel-medium. Consequently, the workload of lecturers has doubled, while limited resources are available to cope with the demands arising from the transformation in this institution.

Further problems have arisen as a result of the downsizing of the tertiary education industry in South Africa, such as the merging of historically black universities with historically white universities, as well as the merging of universities with technikons (Van den Berg 2005: 3). At the same time, the subsidisation of universities by the state has decreased significantly (Fourie & Alt 2000: 116). Changes in the HE system have created new demands which were not supported by the investment of sufficient resources, resulting in transformation fatigue (Coetzee & Rothman 2004: 29), a gradual erosion in pay, and job insecurity, as well as escalating stressors which are reflected in lower levels of job satisfaction and commitment (Brown 1996: 237, Kinman & Jones 2003: 22, Lacy & Sheehan 1997: 306). These problems are experienced by both academic and support staff in HE institutions.

Universities play a vital role in the creation of knowledge for future skills development and the social and educational upliftment of South Africans, as well as community service. According to Coetzee & Rothman (2004: 29), academics are indispensable to societal life, since they are responsible for educating most leaders of societies, as well as for conducting scientific research and furthering knowledge. Gilbert (2000: 33) emphasises the fact that HE institutions require stable and productive support systems, since such systems are vitally

important in order to ensure the country's sustainable economic, social and political reconstruction and development. Since the administrators, lecturers (Seldin 1991: 18) and support staff (cf Alexy 1991: 33) are the driving force of HE institutions, it is important to promote their well-being (Sackney *et al* 2000: 51). In order to ensure that HE will succeed in making a valuable contribution to the reconstruction and development of South Africa, it is of crucial importance to look after the staff employed at tertiary education institutions — for they are the “human capital” that will make it possible to achieve service delivery to all stakeholders, including students, government and the community (Coetzee & Rothman 2004: 29). The aim of this article is to investigate the level of work engagement (as a dimension of work-related well-being) among staff, and to explore certain factors contributing to the work engagement of staff at a tertiary education institution.

1. Aims of the study

1.1 Work engagement

Recently, the concept of work engagement has been introduced as the opposite pole of job burnout (Maslach *et al* 2001: 399). “Burnout” is a metaphor that is commonly used to describe a state or process of mental exhaustion that results from chronic job stress (Schaufeli & Enzmann 1998: 28). Burnout is, more specifically, a multi-dimensional construct consisting of (emotional) exhaustion, cynicism (or depersonalisation) and reduced professional efficacy (Maslach *et al* 1996: 4). More seriously, the devastating effects of burnout on academics, such as declining mental and physical health (Tytherleigh 2003: 102) and deterioration in teaching and research performance (Dick 1992: 341), hold serious repercussions for education, as academic careers are becoming less attractive. Work engagement, as the antipode of burnout, is characterised by three dimensions, namely vigour, dedication and absorption (Schaufeli *et al* 2002: 74). Vigour is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence, even in the face of difficulties. Dedication is characterised by a

sense of significance, enthusiasm, inspiration, pride and challenge, in relation to one's job. Finally, absorption is characterised by the quality of being totally and happily immersed in one's work, to the extent that it is difficult to detach oneself from it.

Different approaches to the conceptualisation of work engagement have developed, culminating in two quite different schools of thought with regard to the relationship between burnout and work engagement. Maslach & Leiter (1997: 34), for example, define engagement as the opposite end of the three burnout dimensions, in terms of energy, involvement and a sense of efficacy. Schaufeli *et al* (2002: 73), in contrast, conceptualise engagement in terms of its own inherent qualities — rather than as an opposite to burnout — and define it as a persistent, positive motivational state of fulfilment in employees that is characterised by vigour, dedication and absorption. Thus, regardless of the definition used, the specificities of engagement lie in the combination of high energy (vigour), strong involvement (dedication) and efficacy. According to Schaufeli *et al* (2002: 73), absorption most likely plays a somewhat less central role in the engagement concept. Engagement (especially absorption) comes close to what has been called “flow”, a term used by Csikszentmihalyi (1990: 10) to refer to a state of optimal experience that is characterised by focused attention, a clear unison of mind and body, effortless concentration, complete control, loss of self-consciousness, distortion of time and intrinsic enjoyment. Therefore, engagement leads to human benefits for the individual experiencing it. Furthermore, these individual outcomes also frequently rebound positively on organisations. Organisational benefits gained from employee engagement have been known to include greater achievement of individual work goals, ie productivity (Schaufeli & Bakker 2004: 295), customer satisfaction and profitability.

Universities in South Africa could greatly benefit from having work-engaged employees. This would be likely to result in higher output from academics who, in turn, would be more creative, energised and willing to work harder, owing to their personal energy and commitment. In this regard, Schaufeli *et al* (2001: 423) describe the following eight characteristics of engaged employees: they take

initiative and self-direct their lives; they generate their own positive feedback and so encourage themselves; they are also engaged outside of their employment; their values and norms are in agreement with those of the organisation for which they work; they do become fatigued but it is intrinsically linked to an overall sense of satisfaction; they may also become “burnt out,” but are able to extricate themselves from the situation; they are not enslaved to their job, and they tend to also pursue outside interests.

Several theories and models have been developed to explain the effects of work-related factors on burnout and work engagement, including the Job Demands-Resources (JD-R) model (Demerouti *et al* 2001: 499). Job demands are those physical, psychological, social, or organisational aspects of the job that require sustained physical and/or psychological (cognitive or emotional) effort, and which are therefore associated with certain physiological and psychological consequences, or “costs,” such as burnout. Job resources refer to those physical, psychological, social and/or organisational job aspects that are necessary, firstly to achieve work goals, secondly to reduce job demands and lessen physiological and psychological costs, and thirdly to stimulate personal growth and development (including training, positive feedback, remuneration) (Demerouti *et al* 2001: 500). The Job Demands-Resources (JD-R) model assumes that two different underlying psychological processes play a role in determining either burnout or work engagement: an effort-driven process in which excessive job demands lead to exhaustion (burnout); and a motivation-driven process, in which sufficient resources lead to work engagement (Demerouti *et al* 2001: 500). Thus, the presence of sufficient resources plays a role in creating energised and vitalised staff. The proponents of this model also assume that burnout develops irrespective of the type of occupation, when job demands are high and resources limited.

1.2 Factors influencing work engagement in HE

Rafferty & Griffin (2006: 1154) state that stress should be seen as a transaction in terms of which stress arises when the demands of a particular encounter are about to exceed the resources available, thereby threatening well-being. This is evident in HE institutions, as the

increase in workloads, new trends in teaching and learning (Blackmore 2001: 353, Kraak 2000: 34), changes in the marketplace (Blackmore 2001: 355) and globalisation (Brown 1999: 242) have certainly impacted on the well-being of employees. In concurrence with the Job Demands-Resources Model, Jackson *et al* (2006: 264) allege that, within the South African HE context, job demands and a lack of job resources have contributed to burnout. However, Coetzee & Rothman (2004: 32) oppose this view, and believe that the determination of whether the situation (high demands and lack of resources) comprises a stressor or not, depends on the person appraising the situation. People bring along individual differences in terms of their personality and life experience (ie coping strategies) that will either increase or decrease their resistance to stress, and which may promote or hamper work engagement (Rothman 2003: 21).

It is evident that work pressures, brought about by factors such as massification, parallel-medium tuition and unprepared students, have been constantly rising for university staff. As a result, university employees are particularly vulnerable to the adverse effects of stress (Sharpley *et al* 1996: 73). Accordingly, it appears that the job demands of academics have escalated, whilst the levels of support and other resources have declined, owing to downsizing and changes in the funding systems of HE institutions. Furthermore, the literature clearly highlights the negative effects of high job demands and low resources on academic well-being, with specific reference to incidences of stress, burnout and ill-health (Kinman & Jones 2003: 22, Lease 1999: 286).

Gilbert (2000: 31) mentions that demands on academics have risen rapidly over recent years, coupled with a steady erosion of job resources. Several studies have indicated that quantitative job demands such as work overload, role conflict, role ambiguity and role overload have increased dramatically within the academic profession (Lease 1999: 289). Other studies, including those of Tytherleigh *et al* (2005: 44) and Daniels & Guppy (1994: 137), have indicated a considerable lack of resources in the academic profession, reflected by the decline in faculty salaries (Lacy & Sheehan 1997: 307), job security (Fourie 1999: 280) and job control (Cross *et al* 2002: 176), as well as

by a lack of involvement in decision-making, owing to increased state regulation (Fourie 1999: 279). With the increase in state regulation, there has also been a considerable decrease in job autonomy (Kinman & Jones 2003: 22). It is evident that employees have to cope with many demands — often with limited resources.

According to Tytherleigh (2003: 101), the identification of work engagement in the workplace offers a twofold benefit for both management and employees, firstly in terms of changes in the work environment that reduce stress and increase productivity; and secondly, by facilitating the development of effective interventions aimed at reducing the debilitating effects of occupational stress.

It is therefore important to study work engagement and the job-related factors that contribute to such engagement, since the resulting knowledge could help to create an optimal work environment, with work-engaged employees, at HE institutions. An ideal work environment would be one that promotes high performance and high output by achieving and maintaining a balance between job demands and resources. Thus, if the factors influencing work engagement in HE contexts are analysed, steps can be taken to rectify the shortcomings brought about by the rapid transformation in the education system. In addition, such action may result in more engaged, creative and energised staff who play a crucial role in the development of South Africa's future and its leaders of tomorrow.

2. Research method

2.1 Research design

A correlational design was used, with work engagement as the criterion variable and job demands, job resources and demographic factors as predictor variables.

2.2 Research hypothesis

The objective of this study was to investigate the influence of job-related factors (job demands and job resources) on the work engagement of university staff at the UFS.

The management of the UFS was in need of information regarding work wellness of its employees. Therefore a study was launched to investigate the influence of job-related factors on the work engagement of university staff. On the basis of the objectives of the study, the following research hypothesis was formulated:

Job-related factors, including resources (remuneration, training, positive feedback, collegial support, physical resources) and demands (workload, time pressure, increased administration, increased job insecurity, work-home interference), can be used to predict a significant percentage of the variance in the work engagement of university staff members.

2.3 Participants

A conveniency sample comprised of university staff was involved in this study. The study population consisted of academic and support staff at the UFS. A total of 1000 questionnaires were sent out to all academic and support staff of the institution. The research group consisted of 388 members of the support staff (54.8%) and 295 academic staff members (41.7%), with 25 missing values. Females constituted 55.1% (N = 390) of the participants, while males accounted for 42.9% (N = 304), with 14 missing values. Different language groups were included in the study. A total of 79.7% (N = 564) of the participants were Afrikaans-speaking, while 6.9% (N = 49) were English-speaking and 10.7% (N = 76) spoke African languages.² The majority (68.1%) of participants were married. The post-level distribution of the academic staff was as follows: 3.7% of participants occupied junior lecturers' posts; 13.9% were lecturers, while 8.5% were senior lecturers; 4.4% were associate professors; 10.7% were professors; and 0.4% occupied posts at the academic management level. Most of the participants were permanently employed staff (92.1%), while 1.1% were temporary staff (with 48 missing values). Participants working on a full-day basis comprised 94.1% of the respondents, while only 1.3% worked on a half-day basis.

2 In this case, there were 19 missing values.

2.4 Data-gathering

Participants were obtained from the three campuses of the UFS, namely the UFS (Main Campus), the Vista Campus and the QwaQwa Campus. Permission was obtained from the vice-rector of academic planning prior to the commencement of the study. Questionnaires were sent to the various individual departments. A return envelope was included with the questionnaire, to facilitate data-collection. Envelopes containing completed questionnaires were collected at the respective departments approximately one week after the distribution of the questionnaires. Participants were assured of the anonymity and confidentiality of their responses, and participation was voluntary. The results of the study will be made available to all staff members once permission has been granted by the Executive Management of the institution.

2.5 Measuring instruments

A biographical questionnaire was designed to gather data in respect of gender, race, age, post level, educational level, occupational group, marital status, home language and length of service.

The Utrecht Work Engagement Scale (UWES), developed by Schaufeli *et al* (2002: 79), was used to measure work engagement. The UWES includes three dimensions: vigour (six items, eg “I am bursting with energy in my work”); dedication (five items, eg “I find my work full of meaning and purpose”), and absorption (six items, eg “When I am working, I forget everything else around me”). The 17 questions are scored on a seven-point frequency rating scale, varying from 0 (never) to 6 (every day) — the higher the score, the higher the level of vigour, dedication and absorption. Acceptable reliability coefficients were reported for the three subscales, with alpha coefficients ranging between 0.68 and 0.91 for these subscales (Schaufeli *et al* 2002: 79). Two recent studies using confirmative factor analysis demonstrated the factorial validity of the UWES (Schaufeli *et al* 2001: 577 & 2002: 79), while a number of South African studies found good reliability coefficients for South African research participants in this regard.

The Job Characteristics Scale (JCS) was developed by Barkhuizen *et al* (2004: 9) to measure the job demands faced by employees, as well as the job resources available to them. The JCS consists of 48 items. The questions are rated on a four-point scale ranging from 1 (never) to 4 (always). The dimensions of the JCS include pace and amount of work, mental load, work variety, opportunities to learn, work independence, relationships with colleagues, relationships with the immediate supervisor, ambiguities of work, information, communication, participation, contact possibilities, uncertainty about the future, remuneration and career possibilities. The JCS was found to have adequate internal consistency, with Cronbach *alphas* ranging from 0.74 to 0.92. *Alpha* coefficients were calculated for the current research group for all subscales of the measures included in the study (cf Table 1). Except in the case of one of the subscales (physical resources), the *alpha* coefficients range from 0.66 to 0.92, reflecting good internal consistency of all the measures, as all the *alpha* coefficients exceeded the 0.60 cut-off point proposed by Nunnally & Bernstein (1994: 251) for non-cognitive constructs.

2.6 Statistical procedure

Descriptive statistics (means, standard deviations and intercorrelations) were calculated for all variables. In order to investigate the extent to which the variance in work engagement among university staff can be attributed to the predictor variables, a hierarchical regression analysis was performed. In this model, the job-related factors (feedback from supervisor, personal growth, workload, collegial support, job insecurity, remuneration, impact of decisions, social contact, client-related factors, work-home interference, physical resources, attitudes towards the organisation and the organisation's commitment to individuals) are the predictor variables, and the factors relating to the staff members' work engagement (vigour, absorption and dedication) are the criterion variables. The effect sizes of the individual contributions of variables were also calculated, in order to determine the practical significance of the relationships between the variables.

Table 1: Cronbach's α coefficients in respect of the UWES and JCS subscales

Scale	Number of items	α coefficient
UWES: Vigour	6	0.771
Absorption	6	0.704
Dedication	5	0.858
JCS: Feedback from supervisor	13	0.920
Personal growth	5	0.797
Workload	6	0.741
Collegial support	5	0.813
Job insecurity	3	0.921
Remuneration	4	0.862
Impact of decisions	2	0.701
Social contact	3	0.661
Client-related factors	3	0.733
Work-home interference	2	0.772
Resources (physical)	3	0.530
Attitude towards organisation	8	0.892
Organisation's commitment to individual	1	-

3. Results and discussion of results

The descriptive statistics (averages and standard deviations) in respect of all the relevant variables are presented in Table 2. This is followed by the investigation of the research hypothesis.

The mean scores, compared to the range of minimum and maximum scores, for vigour, absorption and dedication are moderate to high, which reveals that the staff at this institution are relatively engaged in their work. Therefore, it can be inferred that they have sufficient levels of energy and mental resilience while carrying out their work, and that they have a sense of significance, enthusiasm, inspiration

and pride. The current group's scores compare favourably with those obtained by Barkhuizen (Barkhuizen *et al* 2004: 18), who also found that the staff at the tertiary institutions involved in the relevant research experienced moderate levels of vigour and dedication.

Table 2: Averages and standard deviations for the total research group

Variables	N	X	S	Min	Max
UWES: Vigour	633	24.94	6.53	0	36
Absorption	646	24.77	6.52	0	36
Dedication	667	22.49	6.28	0	30
JCS: Feedback from supervisor	649	36.04	8.77	13	52
Personal growth	676	12.85	3.42	5	20
Workload	670	19.57	3.02	6	24
Collegial support	678	16.14	3.09	5	20
Job insecurity	687	7.31	3.20	3	14
Remuneration	674	6.50	2.71	4	16
Impact of decisions	693	5.52	1.56	2	8
Social contact	681	9.11	1.86	3	12
Client-related factors	678	7.00	2.04	3	12
Work-home interference	685	5.80	3.14	2	8
Resources (physical)	691	8.04	3.22	3	12
Attitude towards organisation	684	35.53	7.97	8	48
Organisation's commitment to individual	695	3.82	1.44	1	6

In terms of feedback from their supervisor, staff revealed a moderate mean score, indicating a sense of positive communication with their supervisor. Moderate personal growth was also indicated. It can thus be inferred that staff have adequate opportunities for personal growth and development. The mean score for workload was high, which indicates that staff feel that they have too much work, and that

they work under extreme time pressure. The degree of collegial support experienced by staff was moderate to high, indicating that they can rely on their colleagues and ask for help when necessary. Participants reported a moderate sense of job insecurity, indicating that they have an average degree of confidence in the security of their posts.

The mean score for remuneration was low, which reveals that participants feel that their salaries are insufficient and that they are unable to progress financially. The relevant literature confirms that inadequate salaries, and insufficient remuneration as a whole, are a prominent cause of dissatisfaction (Barkhuizen *et al* 2004: 3). In terms of a moderate mean score in respect of the impact of decisions, participants indicated that they are satisfied with the decision-making process in their department and that they are kept relatively up to date with regard to decisions that are made. A high mean score for social contact indicates that staff are very satisfied with the frequency and nature of the contact with their colleagues during working hours. A moderate score for client-related factors reveals that staff are moderately reconciled to the demanding nature (in terms of, for instance, rudeness or unco-operativeness) of their clients. The mean score for work-home interference was high, which indicates that staff are dissatisfied about the degree to which their work interferes with their home and personal life.

The participants' moderate to high mean score for physical resources is indicative of dissatisfaction with their physical working conditions (the availability and quality of equipment in lecture halls, air-conditioning, and so on). The score in respect of the participants' attitude towards their organisation was moderate to high, reflecting that they feel proud of and committed to their organisation. A moderate mean score for the organisation's commitment to the individual indicates that staff are relatively satisfied with their organisation's level of commitment towards them. This suggests that they feel valued and trusted by their organisation.

Before the results of the hierarchical regression analysis are presented and discussed, the intercorrelations between the predictor variables and the three criterion scores will be indicated and discussed. Pearson's product momentum correlation coefficients have been used to calculate the correlations, and the coefficients are presented in Table 3.

Table 3: Intercorrelations between predictor and criterion variables for university staff

Variables	4	5	6	7	8	9	10	11	12	13	14	15	16
1	34**	38**	10*	28**	-12**	06*	35**	17**	-19**	-13**	-23**	53**	39**
2	23**	38**	34**	10*	-08*	-02*	29**	11**	-01*	17**	04*	37**	24**
3	42**	49**	22**	28**	-06*	08*	34**	22**	-16**	-05*	-17**	54**	41**
4	-	58**	11**	65**	-18**	26**	55**	39**	-26**	-14**	-31**	35**	46**
5	-	-	29**	40**	-22**	23**	60**	33**	-10*	06*	-12**	26**	36**
6	-	-	-	-02*	-03*	-13**	20**	10*	35**	44**	32**	-01*	-04*
7	-	-	-	-	-06*	16**	38**	39**	-36**	-18**	-24**	24**	33**
8	-	-	-	-	-	-07*	-15**	-06*	10*	-05*	05*	-03*	-13**
9	-	-	-	-	-	-	14**	10*	-12**	-14**	-19**	21**	30**
10	-	-	-	-	-	-	-	32**	-12**	-05*	-18**	21**	28**
11	-	-	-	-	-	-	-	-	-08**	-02*	-10*	19**	24**
12	-	-	-	-	-	-	-	-	-	41**	27**	-20**	-19**
13	-	-	-	-	-	-	-	-	-	-	50*	-19**	-15**
14	-	-	-	-	-	-	-	-	-	-	-	-19**	-22**
15	-	-	-	-	-	-	-	-	-	-	-	-	57**
16	-	-	-	-	-	-	-	-	-	-	-	-	-

Note 1: Decimal sign omitted

Note 2: Variables: 1 = vigour; 2 = absorption; 3 = dedication; 4 = feedback from supervisor; 5 = personal growth; 6 = workload; 7 = collegial support; 8 = job insecurity; 9 = remuneration; 10 = impact of decisions; 11 = social contact; 12 = client-related factors; 13 = work-home interference; 14 = resources (physical); 15 = attitude towards organisation; and 16 = organisation's commitment to individual

** p <= 0.01, 0.3 and higher = medium effect size.

* p <= 0.05, 0., and higher = large effect size

The correlation coefficients in Table 3 show that with the exception of remuneration, the predictor variables display significant correlations (on the 1% level) with the criterion of vigour. Workload correlated significantly with vigour on the 5% level of significance.

All variables, except for remuneration, client-related factors and resources (physical), correlate significantly on the 1% level (and in the case of collegial support and job insecurity, on the 5% level) with the criterion of absorption.

With the exception of job insecurity, remuneration and work-home interference, the predictor variables show significant correlations, on the 1% level, with the criterion of dedication.

From Table 3, it is clear that there is a negative correlation between vigour and dedication, and the following factors: 8 (job insecurity), 12 (client-related factors), 13 (work-home interference) and 14 (physical resources). Therefore, the higher the stress related to job insecurity, difficult clients, increased work-home interference and insufficient physical resources, the lower the levels of vigour and dedication. Similarly, the higher the levels of stress related to job insecurity, remuneration and difficult clients, the lower the levels of absorption.

The levels of satisfaction related to feedback from the supervisor, personal growth, collegial support, impact of decisions, social contact, attitudes and the organisation's commitment to individuals correlate positively with the levels of vigour and dedication. Apart from these factors that correlated positively with vigour and dedication, satisfaction with the workload and work-home balance also influenced the levels of absorption.

3.1 Hierarchical regression analyses

The results of the hierarchical regression analyses are presented in Tables 4, 5 and 6.

The results show that the job-related factors (resources and demands or stressors) together account for 39.28% of the variance in the staff members' vigour. This is significant on the 1% level [$F_{13;475} = 23.64$; $p < 0.0001$]. When the contributions of the different sets of

variables (resources and stressors) to R^2 for the criterion (vigour) are investigated, it is clear that the set of resource variables (physical resources, social contact, remuneration, collegial support and personal growth) explain 3.59% of the variance in staff members' vigour. This contribution is significant on the 1% level ($F_{5;474} = 7.18$). The set of stressor variables (work-home interference, client-related factors, impact on decisions, job insecurity, workload and feedback from the supervisor) account for 3.17% of the variance in staff members' vigour; and in this case, too, the contribution is significant on the 1% level ($F_{6;474} = 5.28$). Both of these F -values correspond with a small effect size; and the result is thus of small practical significance.

When the contributions of individual predictors to R^2 for the criterion, vigour, are investigated, it is clear that there are significant contributions on the 1% level. Three predictors comprising part of resources (physical resources, remuneration and personal growth), and one falling under stressors (impact on decisions), as well as another predictor, namely the attitude towards the organisation, account for a significant percentage of the variance in the level of vigour. The variable attitude towards the organisation showed the most significant contribution ($F_{1;474} = 114.50$) to the criterion. On its own, it explained 11.45% of the variance in staff members' vigour. The corresponding effect size of 0.19 indicates that this result has moderate practical value. The focus of the discussion will now move to the prediction of variance in the levels of absorption experienced.

Table 4: Contributions of the job-related factors to R², with vigour as criterion

Variables in the analyses	R ²	Contribution to R ² : full minus reduced model	F	f ²
1. [ato]+[ati]+[str]+[res]	0.3928	1-7 = 0.0359	7.18*	0.06
2. [ato]+[ati]+[str]+resph	0.3755	2-7 = 0.0186	18.60*	0.03
3. [ato]+[ati]+[str]+soct	0.3570	3-7 = 0.0001	0.10	-
4. [ato]+[ati]+[str]+remu	0.3695	4-7 = 0.0126	12.60*	0.02
5. [ato]+[ati]+[str]+colsp	0.3570	5-7 = 0.0001	0.10	-
6. [ato]+[ati]+[str]+perg	0.3718	6-7 = 0.0149	14.90*	0.03
7. [ato]+[ati]+[str]	0.3569			
8. [ato]+[ati]+[res]+[str]	0.3928	8-15 = 0.0317	5.28*	0.05
9. [ato]+[ati]+[res]+whin	0.3674	9-15 = 0.0063	6.30	-
10. [ato]+[ati]+[res]+clrf	0.3639	10-15 = 0.0028	2.80	-
11. [ato]+[ati]+[res]+imdc	0.3691	11-15 = 0.0080	8.00*	0.01
12. [ato]+[ati]+[res]+jobs	0.3654	12-15 = 0.0043	4.30	-
13. [ato]+[ati]+[res]+wrkl	0.3665	13-15 = 0.0054	5.40	-
14. [ato]+[ati]+[res]+fdsp	0.3623	14-15 = 0.0012	1.20	-
15. [ato]+[ati]+[res]	0.3611			
16. [ato]+[res]+[str]+[ati]	0.3928	16-17 = 0.0015	1.50	-
17. [ato]+[res]+[str]	0.3913			
18. [ati]+[res]+[str]+[ato]	0.3928	18-19 = 0.1145	114.50*	0.19
19. [ati]+[res]+[str]	0.2783			

Key: Variables: ato=attitude towards organisation; ati=organisation's commitment to individual; str=stressors; res=resources; resph=resources (physical); soct=social contact; remu=remuneration; colsp=collegial support; perg=personal growth; whin=work-home interference; clrf=client-related factors; imdc=impact of decisions; jobs=job insecurity; wrkl=workload; fdsp=feedback from supervisor; square brackets [] indicate a set of variables
 * p \leq 0.01, 0.15 and higher = medium effect size, 0.35 and higher = large effect size

Table 5: Contributions of the job-related factors to R², with absorption as criterion

Variables in the analyses	R ²	Contribution to R ² : full minus reduced model	F	f ²
1. [ato]+[ati]+[str]+[res]	0.3366	1-7 = 0.0357	7.14*	0.05
2. [ato]+[ati]+[str]+resph	0.3043	2-7 = 0.0034	3.40	-
3. [ato]+[ati]+[str]+soct	0.3080	3-7 = 0.0071	7.10*	0.01
4. [ato]+[ati]+[str]+remu	0.3037	4-7 = 0.0028	2.80	-
5. [ato]+[ati]+[str]+colsp	0.3112	5-7 = 0.0103	10.30*	0.01
6. [ato]+[ati]+[str]+perg	0.3170	6-7 = 0.0161	16.10*	0.02
7. [ato]+[ati]+[str]	0.3009			
8. [ato]+[ati]+[res]+[str]	0.3366	8-15 = 0.0858	14.30*	0.13
9. [ato]+[ati]+[res]+whin	0.2907	9-15 = 0.0399	39.90*	0.06
10. [ato]+[ati]+[res]+clrf	0.2681	10-15 = 0.0173	17.30*	0.02
11. [ato]+[ati]+[res]+imdc	0.2612	11-15 = 0.0104	10.40*	0.01
12. [ato]+[ati]+[res]+jobs	0.2554	12-15 = 0.0046	4.60	-
13. [ato]+[ati]+[res]+wrkl	0.3074	13-15 = 0.0566	56.60*	0.08
14. [ato]+[ati]+[res]+fdsp	0.2533	14-15 = 0.0025	2.50	-
15. [ato]+[ati]+[res]	0.2508			
16. [ato]+[res]+[str]+[ati]	0.3366	16-17 = 0.0025	2.50	-
17. [ato]+[res]+[str]	0.3341			
18. [ati]+[res]+[str]+[ato]	0.3366	18-19 = 0.0781	78.10*	0.12
19. [ati]+[res]+[str]	0.2585			

Key: Variables: ato=attitude towards organisation; ati=organisation's commitment to individual; str=stressors; res=resources; resph=resources (physical); soct=social contact; remu=remuneration; colsp=collegial support; perg=personal growth; whin=work-home interference; clrf=client-related factors; imdc=impact of decisions; jobs=job insecurity; wrkl=workload; fdsp=feedback from supervisor; square brackets [] indicate a set of variables
 ** p≤ 0.01, 0.15 and higher = medium effect size
 * p≤ 0.05, 0.35 and higher = large effect size

The results show that the job-related factors (resources, stressors and attitude) together account for 33.66% of the variance in the staff members' levels of absorption. This is significant on the 1% level [$F_{13;487} = 19.01$; $p < 0.0001$]. When the contributions of the differ-

ent sets of variables (resources and stressors) to R^2 for the criterion, absorption, are investigated, it is clear that the set of resource variables (physical resources, social contact, remuneration, collegial support and personal growth) account for 3.57% of the variance in staff members' levels of absorption. This contribution is significant on the 1% level ($F_{5;474} = 7.14$). This F -value corresponds with a small effect size, and therefore it has little practical value. The set of demand or stressor variables (work-home interference, client-related factors, impact on decisions, job insecurity, workload and feedback from the supervisor) explain 8.58% of the variance in staff members' absorption; and in this case, the contribution is also significant on the 1% level ($F_{6;474} = 14.30$). This F -value corresponds with a small to medium effect size and the result is thus of moderate practical value.

When the contributions of individual predictors to R^2 for the criterion, absorption, are investigated, it is clear that there are significant contributions on the 1% level. Three predictors forming part of resources (social contact, collegial support and personal growth) and four falling under demands or stressors (work-home interference, client-related factors, the impact of decisions and workload), as well as participants' attitude towards the organisation, explain a significant percentage of the variance in respect of the criterion, absorption. Again, the variable attitude towards organisation showed the most significant contribution ($F_{1;474} = 78.10$). On its own, it explained 7.81% of the variance in staff members' levels of absorption. The corresponding effect size of 0.12 indicates that the result has little to moderate practical value. The focus of the discussion will now shift to the prediction of variance in the levels of dedication experienced.

Table 6: Contributions of the job-related factors to R², with dedication as criterion

Variables in the analyses	R ²	Contribution to R ² : full minus reduced model	F	f ²
1. [ato]+[ati]+[str]+[res]	0.4517	1-7 = 0.0488	9.76*	0.09
2. [ato]+[ati]+[str]+resph	0.4056	2-7 = 0.0027	2.70	-
3. [ato]+[ati]+[str]+soct	0.4075	3-7 = 0.0046	4.60	-
4. [ato]+[ati]+[str]+remu	0.4059	4-7 = 0.0030	3.00	-
5. [ato]+[ati]+[str]+colsp	0.4030	5-7 = 0.0001	0.10	-
6. [ato]+[ati]+[str]+perg	0.4470	6-7 = 0.0441	44.10*	0.08
7. [ato]+[ati]+[str]	0.4029			
8. [ato]+[ati]+[res]+[str]	0.4517	8-15 = 0.0251	4.18*	0.05
9. [ato]+[ati]+[res]+whin	0.4282	9-15 = 0.0016	1.60	-
10. [ato]+[ati]+[res]+clrf	0.4299	10-15 = 0.0033	3.30	-
11. [ato]+[ati]+[res]+imdc	0.4268	11-15 = 0.0002	0.20	-
12. [ato]+[ati]+[res]+jobs	0.4275	12-15 = 0.0009	0.90	-
13. [ato]+[ati]+[res]+wrkl	0.4446	13-15 = 0.0180	18.0*	0.03
14. [ato]+[ati]+[res]+fdsp	0.4332	14-15 = 0.0066	6.60	-
15. [ato]+[ati]+[res]	0.4266			
16. [ato]+[res]+[str]+[ati]	0.4517	16-17 = 0.0042	4.20	-
17. [ato]+[res]+[str]	0.4475			
18. [ati]+[res]+[str]+[ato]	0.4517	18-19 = 0.0990	99.0*	0.18
19. [ati]+[res]+[str]	0.3527			

Key: Variables: ato=attitude towards organisation; ati=organisation's commitment to individual; str=stressors; res=resources; resph=resources (physical); soct=social contact; remu=remuneration; colsp=collegial support; perg=personal growth; whin=work-home interference; clrf=client-related factors; imdc=impact of decisions; jobs=job insecurity; wrkl=workload; fdsp=feedback from supervisor; square brackets [] indicate a set of variables
 ** p≤ 0.01. 0.15 and higher = medium effect size
 * p≤ 0.05, 0.35 and higher = large effect size

The results show that the job-related factors (resources and demands or stressors) together account for 45.17% of the variance in the staff members' dedication. This is significant on the 1% level [$F_{13;5027} = 31.82; p < 0.0001$]. When the contributions of the differ-

ent sets of variables (resources and demands or stressors) to R^2 for the criterion, dedication, are investigated, it is clear that the set of resource variables (physical resources, social contact, remuneration, collegial support and personal growth) explain 4.88% of the variance in staff members' dedication. This contribution is significant on the 1% level ($F_{5;474} = 9.76$). This F -value corresponds with a small effect size, and therefore it is of small to moderate practical value. The set of stressor variables (work-home interference, client-related factors, impact of decisions, job insecurity, workload and feedback from the supervisor) explain 2.51% of the variance in staff members' dedication; and in this case, the contribution is also significant on the 1% level ($F_{6;474} = 4.18$). This F -value corresponds with a small effect size; and the result is thus of small practical value.

When the contributions of individual predictors to R^2 for the criterion, dedication, are investigated, it is clear that there are significant contributions on the 1% level. One predictor comprising part of resources (personal growth) and one falling under stressors (workload), as well as the predictor, attitude towards the organisation, explain a significant percentage of the variance in respect of the criterion, dedication. Again, the variable attitude towards the organisation showed the most significant contribution ($F_{1;474} = 99.0$) to the criterion. On its own, it explained 9.90% of the variance in staff members' dedication. The corresponding effect size of 0.18 indicates that the result is of moderate practical value.

On the basis of the small percentage of variance in work engagement (in terms of vigour, dedication and absorption) explained by the job demands and resources, the hypothesis was rejected.

4. Recapitulation and conclusion

Results of the study indicate that the measuring instruments provided good internal consistency measures. Most of the alpha coefficients were considerably above the 0.70 cut-off point proposed by Nunnally & Bernstein (1994: 251). Job security displayed the highest alpha coefficient value (0.92), whereas the physical resources subscale of the Job Characteristics Scale was low (0.53) and should be interpreted with caution.

The mean scores for vigour, absorption and dedication indicate that the participants experience moderate to high levels of work engagement. Barkhuizen's study, conducted amongst academics at North-West University, supports these findings, as she also reported relatively high levels of vigour and dedication amongst participants (Barkhuizen 2005: 73). Therefore, it can be inferred that, despite the negative consequences brought about by transformation in HE institutions, staff still experience relatively high levels of work engagement. This finding possibly supports Kinman & Jones's (2003: 288) notion that many people thrive on the fact that their jobs are stressful because they have a strong need for stimulation.

The results revealed, in terms of the predictor variables, that staff feel that they have too much work, and that they work under extreme time pressure. Furthermore, they feel that their salaries are insufficient and that they are unable to progress financially. These findings are supported by a study conducted by Barkhuizen *et al* (2004: 13). Participants are also dissatisfied about the degree to which their work interferes with their home and personal life, and in addition, they are dissatisfied with their physical working conditions (inadequate equipment in lecture halls for instance). No South African studies could be found pertaining to work-home interference. Participants expressed their satisfaction with the frequency and nature of their contact with their colleagues during working hours and indicated that they can count on their colleagues and ask for help when necessary. They also feel valued and trusted by their organisation, and have a sense of pride in, and commitment to, their organisation. These findings are contradicted by those of Tytherleigh *et al* (2005: 54) who found that university staff reported significantly lower levels of commitment, both from and towards their organisation. High demands or stressors related to job insecurity, client-related factors, work-home interference and physical resources, impacted negatively on the levels of vigour and dedication. The same demands or stressors, in conjunction with poor remuneration, also resulted in lower levels of absorption on the part of participants.

According to the results of the current study, resources with a positive impact, such as feedback from the supervisor, personal growth,

collegial support, impact of decisions, social contact, attitudes and the organisation's commitment to individuals, resulted in higher levels of vigour and dedication amongst staff. In conjunction with these factors, a lower workload and a lower degree of home-work interference contributed to high levels of absorption on the part of staff. These findings were supported by the findings of McInnis (1999: 107).

According to the intercorrelations of all the job-related factors with vigour, it can be concluded that the attitude towards the organisation and the organisation's commitment to individuals made the most significant contributions to the levels of vigour and absorption of university staff. The more positive the staff's attitude towards the organisation is, the higher the levels of vigour and absorption experienced by the staff. On the basis of findings made by McInnis (1999: 108), there is evidence to suggest that, in general, academic staff appear to be committed to their organisations, despite the stressors and strains that they experience. The results of this study indicate that the staff's total levels of vigour are moderate to high, suggesting that staff at this institution have sufficient levels of energy and mental resilience while carrying out their work, and that they have a sense of significance, enthusiasm, inspiration and pride, despite the challenges they are faced with as a result of the changes brought about by transformation.

The results highlight the fact that a wide variety of factors influence the level of engagement of university staff. Although the demands or stressors and resource factors that were included in this study explained a reasonable amount of the variance in the levels of engagement reported, a large portion of the variance was left unexplained (60.72% in the case of vigour; 66.34% in the case of absorption; and 54.83% in the case of dedication). This indicates that there are many other factors, apart from the work-related factors included in this study, which play an important role in the determination of employees' engagement. According to Rees (1995: 7), people bring along individual differences (such as coping strategies) in terms of their personality and life experience, which will influence their stress resistance and work engagement. Although the findings of the current study, to some degree, support the notion that demands or

stressors and resources contribute to (or hamper) work engagement, personal factors (not included in this study) such as the personality variables of the individual, as well as his or her coping style and other factors of a personal nature, may also play a role in determining the degree of work engagement.

5. Recommendations and limitations

Given the accumulating evidence in respect of job demands (work overload for instance) and insufficient resources, and the effect thereof on staff members, it is recommended that the organisation should address the excessive demands by restructuring workloads or increasing staff, and by augmenting the available job resources (organisational support, physical resources, remuneration and opportunities for growth and development), in order to improve the work engagement and general well-being of staff members. In addition, individual interventions also need to be introduced to enhance their coping ability.

It is recommended that further research should be conducted to investigate additional factors, such as other job-related factors (including the leadership style and psychological climate in the work environment) and personal factors pertaining to the personality variables of the individual, such as coping style, family matters, as well as cognitive, behavioural and social processes and other personal factors. In this way, a more holistic perspective encompassing a greater number of factors influencing work engagement could be attained.

Longitudinal studies on work engagement, focusing on work engagement over time and taking increasing demands and decreasing resources into account, would also be beneficial in terms of investigating work engagement more thoroughly.

The present study has certain limitations. The strong reliance on self-reporting measures may be regarded as a limitation. However, this was the preferred choice of methodology, owing to time constraints as well as financial constraints. The sole reliance on self-reporting may also have led to “method variance” or “nuisance” factors. Participants may have been motivated to reflect a negative image of

their work environment as a cry for help; or some may have tried to create a favourable impression of their work engagement and coping ability by means of their responses.

Since the academic and support staff of only one tertiary institution were included in this study, the results cannot be generalised to include staff at other tertiary institutions. In order to confirm the findings of this study, similar studies in other tertiary institutions are needed.

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