

Chapter 9

Conclusions

9.1 Overview

The current research supports an already extensive literature (for example, Leiter & Maslach, 1999, 2004; Maslach et al., 2001; Schaufeli, 2004) that indicates that burnout and engagement happen within an organisational context and are not necessarily the result of individual workers' characteristics. The purpose behind the current research was to achieve more clarity as to what was present within workplaces that promoted burnout or engagement with work and to ascertain those characteristics that were specific to burnout and engagement in the workplaces of people who were identified as experiencing the conditions. The current study has found people who identify with both burnout and engagement, and also a sizeable group who reported that they are not burned out by their work, but they are not engaged in their work either.

9.1.1 Chapter One

Chapter one presented some aspects of the considerable body of research that has investigated burnout and engagement within their organisational context as well as brief overviews of the procedural justice and management trustworthiness literatures. Leiter and Maslach's (1999, 2004, 2006) six areas of worklife concept was used as a framework for additional material that contributes to understandings of how stress develops within workplace settings. It was demonstrated that the areas of worklife (AWS) not only integrates the considerable body of research that is specific to

burnout, but also has relevance for other literatures in organisational psychology and human factors research. Unlike the Job Demands Resources model (JD-R) (Bakker & Demerouti, 2007) the AWS emphasises the role managements play in establishing a context in which employees will achieve matches, thereby honouring their psychological contract (Rousseau, 1995). As a result, the AWS incorporates the psychological contract as a central construct. This is because match/mismatch signals lived experience as contrasted with prior expectations.

9.1.2 Chapter Two

Chapter two focused on the concerns of small business and demonstrated, within that setting, that burnout and engagement can be features of the management experience and not just that of employees. To some extent the findings of this Chapter, based on the initial stage of the research and incorporating interviews with ten individuals, looked out of place within the larger research project. In addition, findings from a study with only ten people could well be seen as un-representative of the larger population of small business managers. However, it is noted that the interviews supported the findings of the research project as a whole and therefore provide some foundation for future studies into the development of burnout and engagement within regional small business. While respondents in the subsequent survey were provided with the opportunity to indicate the size of their business, there was no significant finding in regard to this differentiation. This, in itself, provides support for the relevance of the AWS model (Leiter & Maslach, 2006) to all organizational types.

9.1.3 Chapter Three

Chapter three focused on the topic of teachers' workload (AWS) based on responses to the teachers' phase of the survey. Respondents reported that this mismatch on

workload, manifested in a proliferation of extra tasks that are nothing to do with teaching, contributed to their exhaustion. This chapter comprises a published paper that contributes to dialogue on this topic and raises some issues that may inform future educational policies in regard to sustainable work for teachers. Respondents reported having to take work home in order to meet completion imperatives, thereby impacting on individuals' family lives. Related to this was the reported widespread expectation within educational systems that teachers will take on co-curricular duties. While these are supposedly 'honorary and voluntary' it was made clear by respondents that participation in co-curricular activities was considered to be an important factor in considerations for promotion and therefore was the source of much added pressure.

9.1.4 Chapter Four

The cluster analysis undertaken in Chapter four provided some broad support for predictions that the AWS (Leiter & Maslach, 2006) could predict the workers' burnout or engagement. It was demonstrated that matches on the AWS were consistent with burnout in workers as determined by the Oldenburg burnout inventory (OLBI) (Demerouti et al., 2002) using the variables exhaustion and disengagement. It was also demonstrated that matches on the AWS were consistent with worker engagement as measured by dedication, absorption and vigour from the Utrecht work engagement scale (UWES) (Schaufeli & Bakker, 2003). The exception to this was the AWS variable of workload. Mismatches on workload were not found to be inconsistent with worker engagement. The other contribution of Chapter four was some evidence in support of Schaufeli and Bakker's (2004) premise that

engagement was a separate construct from the burnout construct that correlated negatively with it.

9.1.5 Chapter Five

The focus of Chapter five was the demonstration of common ground existing between the AWS variable of fairness (Leiter & Maslach, 2006), the procedural justice variable (Moorman, Blakely, & Niehoff, 1998) and the management trustworthiness variable (Mayer & Davis, 1999). Strong correlations between the constructs did suggest that the measures were covering common ground. The use of Structural Equation Modeling (SEM) techniques established that, for respondents in the current research, that procedural justice (Moorman et al.) and management trustworthiness constructs (Mayer & Davis) were virtually identical. A one factor congeneric analysis using items from all scales indicated six management trustworthiness items and one fairness (AWS) item provided coverage for all items. This reduced scale was called the combined justice and management trustworthiness variables (CJMT). It was however noted, that Leiter and Maslach's (2006) fairness construct also had important strong relationships with the other two constructs, but, as evidenced by high measurement error values for its one remaining item in the final construct, there were indications that it was measuring some aspect of the work environment not tapped into by the other items. It was unfortunate that within this process it was necessary to discard responses of 46 respondents; this was due to a significant MCAR test indicating that it was not prudent to use Expectation Maximisation to replace missing values on these surveys (Cunningham, 2007).

9.1.6 Chapters Six and Seven

Chapter six covered a complex statistical journey made necessary by divergence of responses from participants in the current research to factors as previously established by their authors. There were inconsistencies with the AWS (Leiter & Maslach, 2006), the OLBI (Demerouti et al., 2002) and the UWES (Schaufeli & Bakker, 2003). Details of the maximum likelihood factor analyses that found the inconsistencies can be found in Appendix C. The findings led to a revisiting of the cluster analysis process and consequent re-organisation of the clusters to enable path analysis to proceed. The path analyses reported in Chapter seven demonstrated partial support for Leiter and Maslach's (2004) premise of how the areas of worklife interacted within the workplace. They demonstrated that workload followed a separate pathway to the other areas of worklife in a direct pathway to exhaustion and that the relationships of the other variables followed a pattern that was fairly consistent.

The pattern of relationships between AWS variables of control, reward, community, fairness and values demonstrated in Figure 7.8, deviates from that found by Leiter and Maslach (2004) in that reward has no direct relationship with values, but is mediated, in most cases, by community and fairness. The consistent finding of no relationship between reward and values emphasises the interaction of reward (acknowledgement and appreciation) with community (support and a sense of belonging) with each other. In most cases the path analyses also demonstrated a further relationship of these two variables with fairness, which in turn was related to matches or mismatches between individual and organisational values.

9.1.7 Chapter Eight

Chapter eight represents the third and final stage of the research project. This stage involved interviews with people who had completed the survey and who indicated their willingness to be interviewed. Interview data and commentary are presented within cluster groups. The interviews provided the researcher with an extra perspective on findings of the previous statistical analyses and led to the discovery that the middle group of survey respondents, The Unengaged Group, was in fact comprised of two subgroups, one that indicated matches on the AWS variables and one that indicated mismatches on these variables. The interview data strongly supported previous statistical analyses and the research hypotheses as individuals who were engaged in their work spoke of the rewarding effects of autonomy, community and fairness in their work environment and those suffering burnout spoke eloquently of the effects of severe breakdown in the areas of worklife.

9.2 The research model and hypotheses

The research model demonstrated in Figure 1.1 has dominated the focus of research throughout this project. It was hypothesised that the dynamic interaction of the variables with the large oval shaped sphere would predict a positive relationship with burnout and a negative relationship with burnout. Figure 9.1 presents a revised model that reflects some of the main findings of the present research and hypotheses that may direct future research. The oval shape depicting the relationships of the independent variables that was a feature of Figure 1.1 has been maintained in Figure 9.1 for its organic imagery and because it is advanced that the variables portrayed within it present the areas of growth and possible areas of failure within

organizations (the 'latent failures' within organizations referred to by Reason, 1990a, 1990b).

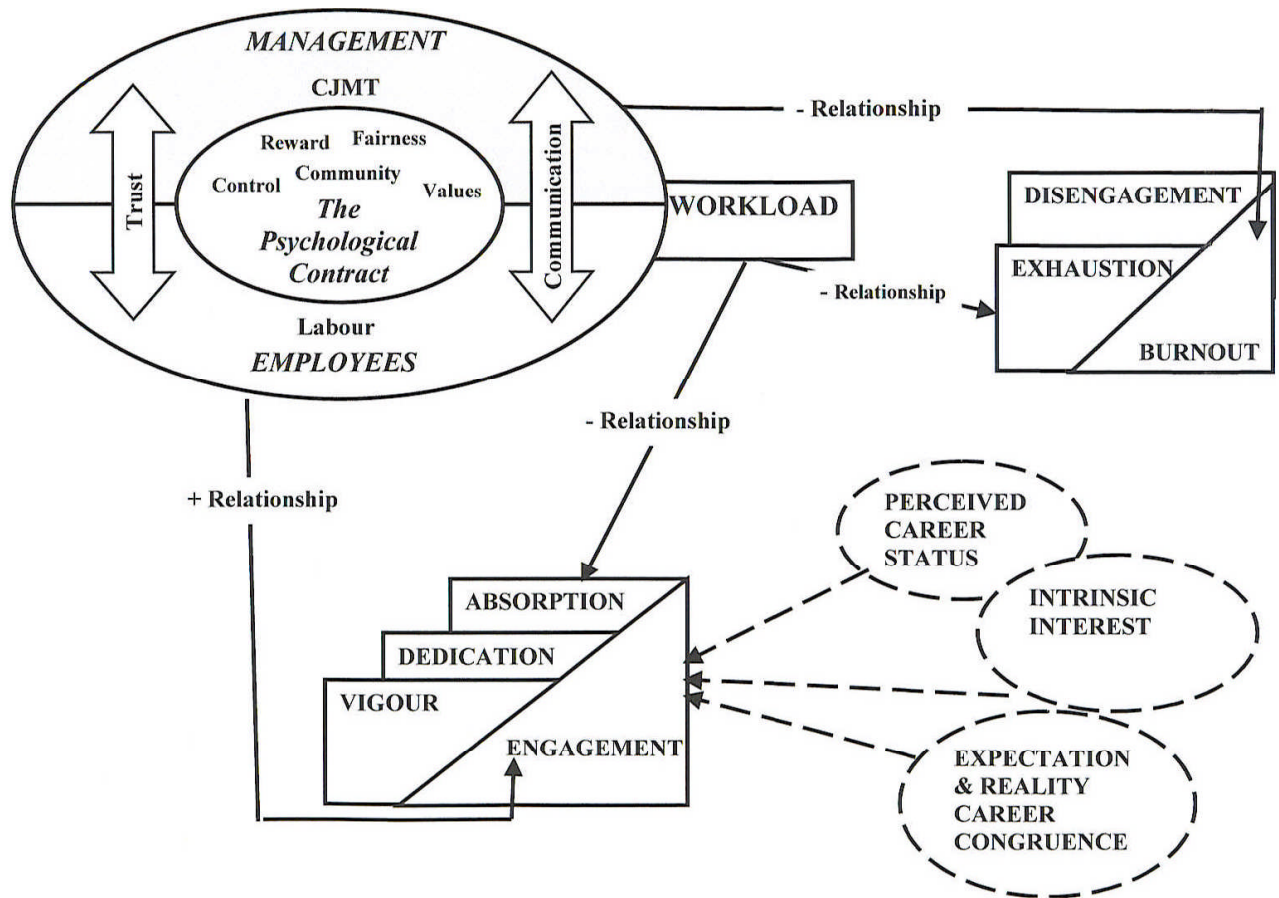


Figure 9.1. Revised model of the relationships between study variables

The reader is reminded that Reason researched the occurrence of accidents in hazardous industries and saw 'active failures' (such as fatigue, boredom or conditions on the day), combining with pre-existing latent failure to cause catastrophic events. While most workplaces do not get such stark feedback of their latent failures, they routinely experience major and expensive inconveniences from the fallout of worker burnout, such as absenteeism and staff turnover (Maslach &

Leiter, 1997; Maslach et al., 2001). Therefore non-hazardous industries are also severely impacted by disinclination of organisations to address latent failure.

As the research model did not explain the reported engagement of The Under Pressure Group, or the lack of engagement in spite of matches on the AWS reported by The Unengaged Match subgroup, it is hypothesized that other variables outside the parameters of the current study may well account for these apparent anomalies. The suggested variables have been portrayed with dashed lines to indicate they were not part of the current research. 'Perceived career status' was an item of concern to teacher interviewees in the current study, who perceived that teaching as a career was not awarded the esteem in the community that they had previously enjoyed. In regard to the 'intrinsic interest' suggested variable, some interviewees from the Under Pressure Group reported that, apart from reported problems with relationship and management dynamics in their place of work, their career was interesting of itself. The 'expectation and reality congruence' variable was included in Figure 9.1 in response to a comment from Gemma, from the Match subgroup of The Unengaged group, who indicated that the career expectations she encountered in her place of work were quite different to her expectations of what a journalism career would entail. In regard to this point, teacher respondents also reported incongruence that much of their time was involved in performing duties that had nothing to do with teaching children (see Chapter 3). It is possible that other variables may also contribute to engagement or lack of engagement of people in the workplace.

Redistribution of variables that were part of the present research portrayed in Figure 9.1 from the first model portrayed in Figure 1.1 will be discussed in the next few pages.

9.2.1 The Psychological Contract

Rousseau (1995) discussed the psychological contract in terms of mutual obligations between employers and employees. The present research did seek to ascertain respondents' understandings of the psychological contract by means of a qualitative question, "Three things I would expect from a job are..." (see survey document in Appendix A). Responses to this question were coded using the areas of worklife as a framework (see Appendix E) by two independent coders and entered into an SPSS file. When these were examined it was decided that the expectations closely mirrored items within the AWS (Leiter & Maslach, 1999) which describes responses in terms of 'match' or 'mismatch'. As this terminology implies prior expectation, it was recognised that the AWS is actually a measure of the psychological contract. The consistent close relationship of five of the variables (control, reward, community, fairness and values) within the path analyses (Chapter 7) also supports this modification of the research diagram. This was reflected by moving five of the scales to the central part of the diagram and noting that respondents in the current study indicated that their experiences of these variables follows a reasonably predictable pattern (see Figure 7.8).

One implication of this is that management personnel may also have some aspects of the AWS variables within their own psychological contracts. The current research supported this consideration in Chapter 2 where all respondents were managers of small business most of whom indicated that that their engagement with their work was related to the support, reward and control they found with their employees within their place of work. In addition, some of the interviewees in

Chapter 8 (Alex, Susan, Roger, Robert and Sarah) held middle management positions. These people indicated that their aspirations for their work were similar to those held by other people. It is noted that the CJMT variable remains within the management segment of the sphere. This is due to the power differential within workplaces that places decision making and approachability at the behest of management. Some examples of this working well came from interviewees Maggie and Philippa in Chapter 8. Examples of it not working so well come from interviewees Rose and Amy in Chapter 8.

As the psychological contract comprises reciprocal obligations between employers and employees (Rousseau, 1995), 'labour' has been added to the employees part of the diagram in Figure 9.1. This was not included in the research model, but was very much a feature of the current research. Consistent with some of the interviews reported in Chapter 2, it could be that 'loyalty' is another expectation management has of employees. However loyalty has not been added to the diagram at this stage because Kim and Mauborgne (1998, 2005) include employee loyalty as one of the beneficial outcomes of the strategic use by managements of procedural justice within the workplace.

It is noted that workload is not placed with the other AWS variables within the psychological contract in Figure 9.2. This is because all path analyses in Chapter 7 demonstrated that workload followed quite a different pathway to other AWS variables with an unswerving and strong association with exhaustion. It was also frequently associated with absorption. These direct relationships are therefore reflected in Figure 9.1. It is noted that the five variables remaining within the sphere

have to do with relationships within the workplace and that workload, which was taken outside the sphere, is not necessarily a relationship variable. Yet it has maintained a predictable relationship with exhaustion and absorption in the present study.

9.2.2 Trust and Communication

The two headed arrows labeled ‘trust’ and ‘communication’ are features of Figure 9.1. As the trust variable did not achieve invariance between respondents in the two phases of the survey (Chapter 6) it was not included in the path analyses of Chapter 7. However it is noted that the items in this variable did achieve reasonable reliability ($\alpha = .78$) and consequently it was used in the cluster analysis reported in Chapter 4, where it performed in a similar way to the management trustworthiness and procedural justice items. Respondents who indicated agreement with engagement variables also indicated agreement with trust and those who indicated agreement with burnout variables tended not to agree with trust in management. Respondents reported the health of communication in their organisations within a number of survey scales, for example, a community item, “members of my work group communicate openly” and a procedural justice item, “requests for clarification or additional information are allowed”.

9.2.3 Other Research Hypotheses

The other two original hypotheses stated that: firstly, perceptions of management trustworthiness and secondly, procedural justice would predict good worker adjustment in that there would be negative relationships between these two variables and exhaustion and disengagement from the OLBI (Demerouti et al., 2002). Procedural justice and the management trustworthiness variables were demonstrated

in Chapter 5 to be covering common ground rendering the hypotheses identical.

While the hypothesis was supported by most respondents within the current research, one subgroup of The Unengaged Group (Match subgroup) did not support it.

Respondents from this subgroup indicated matches on the areas of worklife and agreed that their managements were trustworthy; however, they reported ambivalence on the UWES (Schaufeli & Bakker, 2003) variables of vigour, dedication and absorption. This would seem to indicate a condition where there was an 'absence of disease' (Schaufeli, 2004, p. 503), rather than positive adjustment and optimal functioning in one's work (Schaufeli et al., 2006). However it must be acknowledged that the existence of individuals that do not fit the definition of burnout (OLBI) or engagement (UWES) does not negate the fact that the present research found groups of people who had opposite points of view in regard to engagement and burnout.

The Unengaged Group with its distinct profile of marginal endorsement of the UWES variable of vigour, ambivalence on dedication and dis-endorsement of absorption as well as the OLBI variables of exhaustion and disengagement has suggested that other factors may well be impacting on people's relationship with their work. These may well include individuals' disillusionment with their chosen career such as was apparent with the journalist interviewee Gemma, or with how that career is viewed within the community as was the case with Philippa the teacher. These people were experiencing favourable work environments but were still not engaged in their work. Likewise The Under Pressure Group who indicated agreement with the UWES variables of dedication, vigour and absorption (see Figure 6.2), but who also indicated that the AWS variables did not contribute to their work

engagement (see Figure 7.3) provide evidence that factors outside the current research parameters such as intrinsic motivation may well be also implicated in employee engagement.

9.2.4 Limitations of the current research

The current research is cross sectional in nature. Therefore all the findings, including those of the path analyses, cannot establish causality. It is anticipated that the findings encountered in this research will be subjected to further testing by means of longitudinal research with planned interventions. To that end the present research presents a starting point that may have some value for the future. In addition, it could be said that the small group interviews of Chapter two and the interviews of Chapter eight, are, because of the small numbers of subjects, unrepresentative of the populations they are purported to represent. It is noted however that qualitative findings are consistent with the quantitative findings in the present research.

It is unfortunate that copyright restrictions on the MBI (Maslach et al., 1996) meant that it was impossible to use this instrument in the current study. Previous research with the AWS had used the MBI (Leiter & Maslach, 2004). It is therefore possible that the outcome measures used in the current study; OLBI (Demerouti et al., 2002) and UWES (Schaufeli & Bakker, 2003) do not cover the same conceptual space occupied by the MBI, particularly in view of the fact that the OLBI does not include an efficacy scale. However it is noted that Halbesleben and Demerouti (2005) found that the OLBI was comparable in terms of validity and reliability with the MBI.

9.2.5 Implications of the current research

The current research has demonstrated that the areas of worklife model provided by Leiter and Maslach (1999, 2004, 2006) does provide a contextual framework for the discussion of engagement and burnout. The model was developed for testing with the Maslach Burnout Inventory (MBI) (Maslach, Jackson, Leiter & Schaufeli, 1996), which according to Leiter and Maslach (2004) measures *both* burnout and engagement. Therefore it is probably not surprising that the model has demonstrated more consistency in the prediction of burnout (The Burnout Experience 1 Group and The Severe Burnout Group) than it has with the UWES engagement variables of dedication, vigour and absorption in the current research.

The use of two separate scales to measure burnout (OLBI, Demerouti et al., 2002) and engagement (UWES, Schaufeli & Bakker, 2003) has demonstrated that there are aspects of engagement with work that lie beyond the realm of the immediate work environment. The current research suggests that intrinsic interest in the work itself may well be a contributor to job engagement. This point was demonstrated by the finding that The Under Pressure Group indicated that they were engaged in their work, without strong endorsement of the AWS variables or agreement with the CJMT. Another demonstration of the contribution of the work itself to engagement was found in The Unengaged Match subgroup that reported robust matches on AWS variables and agreement with the CJMT, but ambivalence in regard to two of the UWES variables (dedication and vigour) and dis-endorsement of absorption. These respondents indicated that they were not burned out.

It is therefore observed that in the current study that mismatches on the AWS variables and disagreement with the CJMT variable have predicted burnout in the The Burnout Experience 1 Group, and the The Severe Burnout Group (Respondents in these two groups represent 34% of respondents in the current research). Matches on the AWS variables and agreement with the CJMT also predicted work engagement in The Empowered Group, which represented a further 14% of survey respondents. This leaves the experience of 58% of survey respondents only partially explained by the research model. It is noted that many respondents who reported mismatch on AWS variables did not report that they were experiencing burnout, however the mismatches were nevertheless indicative of distress. Such distress was revealed in interviews with respondents from The Under Pressure Group and the Mismatch subgroup of The Unengaged Group. The current research also found more distress among interviewees from The Unengaged Group Match subgroup, who reported disillusionment with their choice of career.

9.2.6 Recommendation for Future Research

The current research has demonstrated support for the applicability of Leiter and Maslach's (2006) Areas of Worklife Model to the study of burnout in the workforce. However, the current study has also revealed that perhaps more emphasis needs to be placed on the influential role management plays in establishing the conditions within the workplace that will allow engagement of workers to thrive and prevent the development of burnout.

One surprising finding of the current research was that workers can experience engagement with their work without necessarily experiencing a suitable workplace environment (The Under Pressure Group). However, it is noted that the AWS

correctly predicted that these workers did articulate a sense of discomfort within their workplaces that clearly was incongruent with their values and expectations.

Nevertheless, these employees were engaged with their work. This indicates that work engagement may be a broader construct, involving more influences, than worker burnout. As worker engagement is clearly a more desirable state, from the perspective of employers and employees alike, it is important that contributors to it are identified.

The current research identified a sizable proportion of respondents who reported that they were not engaged in their work, but they were not burned out. This provides support for Schaufeli and Bakker's (2004) finding that the two constructs are separate and correlate negatively. The AWS provided a framework that allowed distinction to be made within The Unengaged Group. The larger proportion of the group (60%) reported matches on the AWS, yet did not report engagement with their work, while 40% of the group reported mismatches on the AWS, yet did not report burnout. It is posited that further identification of such subjects within datasets may well provide researchers with the opportunity to investigate the environment of those who are experiencing an 'absence of disease' (Schaufeli & Bakker, 2004) and determine what lies between this state and that of employee optimum well being in the workplace.

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Appendix A: Survey Instrument (key)

School of Psychology
James Cook University
PO Box 6811
Cairns Qld 4870
Ph. (07) 4042 1206
Fax (07) 4042 1390

Research Project:

Burnout and Engagement in the Organisational Context

Ethics Approval Number: H 2207

I am a PhD student in Psychology at James Cook University. My supervisors for this research are Dr Deborah Graham (Senior Lecturer) and Dr David Cottrell (lecturer) in the School of Psychology, Cairns Campus.

The aim of my research is to develop an understanding of the context in which people develop burnout or engagement with their work. This understanding is beneficial to organisational planning and to relationships within the workplace. I am anticipating that my research will help workers and management by providing a clearer picture of workplace dynamics.

I am seeking men and women who are currently employed and who are willing to participate in a survey. It will take about 30 minutes of your time. Only my supervisors and I will have access to data from individual participants.

The raw data obtained in this study must be kept in secure conditions at the university for 5 years, but NO findings which could identify any individual participant will be kept, made available to any organization or published.

If you have any queries or would like to be informed of the aggregate research finding, you may contact me at: Carolyn.Timms@jcu.edu.au

Should you have any queries or concerns about the manner in which this research is being conducted, please do not hesitate to contact the Human Ethics Sub-Committee at James Cook University. Contact details are:

Tina Langford, Ethics Administrator,
Research Office
James Cook University
TOWNSVILLE, QLD 4811. Phone: (07) 47814342 Fax: (07) 47815521.

Yours faithfully,

Carolyn Timms

PART A: About You

1. Gender

Male Female

2. Age Group

20-24 years 25-29 years 30-34 years 35-39 years 40-44 years 45-49 years 50-54 years 55-59 years 60+ years

3. Occupation

4. What sort of organization do you work in?

Small business (less than 10 employees) Small business 11-50 employees Medium sized business 50-100 employees Large privately owned business 100+ employees Government owned business

5. How long have you worked at the organization where you now work?

Less than one year 1-4 years 5-9 years 10-14 years 15-19 years 20-24 years 25-29 years 30+ years

6. How long have you worked *in your present job* for this organization?

Less than one year 1-4 years 5-9 years 10-14 years 15-19 years 20-24 years 25-29 years 30+ years

7. What is your employment status?

Permanent (*full-time*) Permanent (*part-time*) Contract Casual Other (please indicate below)

Other employment status _____

8. Please indicate the number of hours you would work in a typical working week

a. At work _____

b. Overtime _____

c. At home or after hours (unpaid) _____

9. Please indicate the organizational level you are currently at.

Frontline staff Supervisor Management (1st level) Management (intermediate) Management (senior)

Other organisation level

10. In general, would you say your health is:

Excellent Very good Good Fair Poor

11. The next 12 questions are about how you generally respond to challenges in your life.

			Strongly Disagree	Disagree	Hard to Decide	Agree	Strongly Agree
a	effort	When I make plans, I am certain I can make them work	①	②	③	④	⑤
b	Pers R	I feel insecure about my ability to do things	①	②	③	④	⑤
c	Initiat R	If something looks too complicated, I will not even bother to try it	①	②	③	④	⑤
d	effort	If I can't do a job the first time, I keep trying until I can	①	②	③	④	⑤
e	Initia R	I avoid trying to learn new things when they look difficult	①	②	③	④	⑤
f	Pers R	When unexpected problems occur, I don't handle them well	①	②	③	④	⑤
g	Pers	I am capable of handling most problems that come up in my life.	①	②	③	④	⑤
h	Initiat R	When trying something new, I soon give up if I am not initially successful	①	②	③	④	⑤
i	effort	When I have something unpleasant to do, I stick to it until I finish it	①	②	③	④	⑤
j	Pers R	When I set important goals for myself , I rarely achieve them	①	②	③	④	⑤
k	effort	When I decide to do something, I go right to work on it	①	②	③	④	⑤
l	effort	Failure just makes me try harder	①	②	③	④	⑤

PART B: This section asks you about your experience of working in your current job.

			<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Hard to Decide</i>	<i>Agree</i>	<i>Strongly Agree</i>
1.	Con 3	I have professional autonomy/independence in my work	①	②	③	④	⑤
2.	Con 1	I have control over how I do my work	①	②	③	④	⑤
3.	Rew 3R	My efforts usually go unnoticed	①	②	③	④	⑤
4.	WL 6	I leave my work behind when I go home at the end of the day	①	②	③	④	⑤
5.	WL 4R	I have so much work to do on the job that it takes me away from my personal interests.	①	②	③	④	⑤
6.	Fai 4	Management treats all employees fairly	①	②	③	④	⑤
7.	Con 2	I can influence management to obtain the equipment and space I need for my work	①	②	③	④	⑤
8.	Val 5R	Working here forces me to compromise my values	①	②	③	④	⑤
9.	Com 4	Members of my work group communicate openly	①	②	③	④	⑤
10.	WL 2R	I work intensely for prolonged periods of time	①	②	③	④	⑤
11.	Fai 3	There are effective appeal procedures available when I question the fairness of a decision	①	②	③	④	⑤
12.	Fai 2	Opportunities are decided solely on merit	①	②	③	④	⑤
13.	Rew 4R	I do not get recognized for all the things I contribute	①	②	③	④	⑤
14.	Val 1	My values and the organization's are alike	①	②	③	④	⑤
15.	Com 1	People trust one another to fulfill their roles	①	②	③	④	⑤
16.	Rew 2	My work is appreciated	①	②	③	④	⑤
17.	WL 1R	I do not have time to do the work that must be done	①	②	③	④	⑤
18.	Com 3	Members of my work group cooperate with each other	①	②	③	④	⑤
19.	WL 3R	After work I come home too tired to do the things I like to do	①	②	③	④	⑤
20.	Rew 1	I receive recognition from others for my work	①	②	③	④	⑤
21.	Fai 5R	Favouritism determines how decisions are made at work	①	②	③	④	⑤
22.	Com 2	I am a member of a supportive work group	①	②	③	④	⑤
23.	Fai 6R	Its not what you know, but who you know, that determines a career here	①	②	③	④	⑤
24.	Val 3	My personal career goals are consistent with the organisation's stated goals	①	②	③	④	⑤

PART B: *continued.*

			<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Hard to Decide</i>	<i>Agree</i>	<i>Strongly Agree</i>
25.	Com 5 R	I don't feel close to my colleagues	①	②	③	④	⑤
26.	Fai 1	Resources are allocated fairly here	①	②	③	④	⑤
27.	Val 2	The organization's goals influence my day to day work activities	①	②	③	④	⑤
28.	Val 4	This organization is committed to quality	①	②	③	④	⑤
29.	WL 5	I have enough time to do what's important in my job	①	②	③	④	⑤

Part C.a: *The following section asks about some feelings you may have in response to the experience of working in your current job*

			<i>Never</i>	<i>Almost never</i>	<i>Rarely</i>	<i>Some-times</i>	<i>Often</i>	<i>Very Often</i>	<i>Always</i>
1	V 14	I can continue working for very long periods of time	①	②	③	④	⑤	⑥	⑦
2	V 12	At my job, I feel strong and vigorous	①	②	③	④	⑤	⑥	⑦
3	De 1	I find the work that I do full of meaning and purpose	①	②	③	④	⑤	⑥	⑦
4	AB 6	It is difficult to detach myself from my job	①	②	③	④	⑤	⑥	⑦
5	AB 5	I get carried away when I am working	①	②	③	④	⑤	⑥	⑦
6	Vi 1	At my work, I feel bursting with energy	①	②	③	④	⑤	⑥	⑦
7	De 4	I am proud of the work that I do	①	②	③	④	⑤	⑥	⑦
8	Vi 6	At my work I always persevere, even when things do not go well	①	②	③	④	⑤	⑥	⑦
9	Vi 5	At my job, I am very resilient, mentally	①	②	③	④	⑤	⑥	⑦
10	De 5	To me, my job is challenging	①	②	③	④	⑤	⑥	⑦
11	AB 3	I feel happy when I am working intensely	①	②	③	④	⑤	⑥	⑦
12	De 3	My job inspires me	①	②	③	④	⑤	⑥	⑦
13	De 2	I am enthusiastic about my job	①	②	③	④	⑤	⑥	⑦
14	AB 2	When I am working, I forget everything else around me	①	②	③	④	⑤	⑥	⑦
15	Vi 3	When I get up in the morning, I feel like going to work	①	②	③	④	⑤	⑥	⑦
16	AB 4	I am immersed in my work	①	②	③	④	⑤	⑥	⑦
17	AB 1	Time flies when I am working	①	②	③	④	⑤	⑥	⑦

Part C. b. This section continues to ask questions about feelings you may have in connection with your present job, however the answer scale is different to the previous section.

			Strongly Agree	Agree	Disagree	Strongly Disagree
1	Dis	I always find new and interesting aspects in my work.	①	②	③	④
2	Ex R	There are days when I feel tired before I arrive at work.	①	②	③	④
3	Dis R	It happens more and more often that I talk about my work in a negative way	①	②	③	④
4	Ex R	After work, I tend to need more time than in the past in order to relax and feel better.	①	②	③	④
5	Ex	I can tolerate the pressure of my work very well.	①	②	③	④
6	Dis R	Lately, I tend to think less at work and do my job almost mechanically	①	②	③	④
7	Dis	I find my work a positive challenge	①	②	③	④
8	Ex R	During my work, I often feel emotionally drained.	①	②	③	④
9	Dis R	Over time, one can become disconnected from this type of work.	①	②	③	④
10	Ex	After working, I have enough energy for my leisure activities	①	②	③	④
11	Dis R	Sometimes I feel sickened by my work tasks	①	②	③	④
12	Ex R	After my work, I usually feel worn out and weary	①	②	③	④
13	Dis	This is the only type of work that I can imagine myself doing	①	②	③	④
14	Ex	Usually, I can manage the amount of my work well	①	②	③	④
15	Dis	I feel more and more engaged in my work	①	②	③	④
16	Ex	When I work, I usually feel energized	①	②	③	④

Part C.c.

Three things I would expect from a job are:

PART D: *The purpose of this section is to examine your perceptions about workplace equity. When answering the following questions, think about the day-to-day decisions made about worker responsibilities, schedules, rewards and general treatment.*

When decisions about **other members of staff** in general, or **you** in particular are made in this organisation.....

	<i>Strongly Disagree</i>	<i>Moderately Disagree</i>	<i>Slightly Disagree</i>	<i>Neither Agree or Disagree</i>	<i>Slightly Agree</i>	<i>Moderately Agree</i>	<i>Strongly Agree</i>
1. ..requests for clarification or additional information are allowed.	①	②	③	④	⑤	⑥	⑦
2. ..you are treated with respect and dignity.	①	②	③	④	⑤	⑥	⑦
3. .. you are dealt with in a truthful manner.	①	②	③	④	⑤	⑥	⑦
4. ..all the sides affected by the decisions are represented.	①	②	③	④	⑤	⑥	⑦
5. ..the decisions are applied with consistency to the parties affected.	①	②	③	④	⑤	⑥	⑦
6. ..you are offered adequate justification for the decisions.	①	②	③	④	⑤	⑥	⑦
7. ..accurate information upon which the decisions are based is collected.	①	②	③	④	⑤	⑥	⑦
8. ...complete information upon which the decisions are based is collected.	①	②	③	④	⑤	⑥	⑦
9. ...opportunities are provided to appeal or challenge the decisions.	①	②	③	④	⑤	⑥	⑦
10. ...you are treated with kindness and consideration.	①	②	③	④	⑤	⑥	⑦
11. ...you are shown concern for your rights as an employee.	①	②	③	④	⑤	⑥	⑦
12. ...you are helped to understand the reasons for the decision.	①	②	③	④	⑤	⑥	⑦

Feel free to make a comment your experience of equity processes within your organization.

PART E: *The purpose of this section is to examine your perceptions of the relationship that exists between workers and management. In this section think of the management of your organization. (DO NOT COMPLETE THIS SECTION IF YOU HAVE NO ONE WHO IS SENIOR TO YOU IN YOUR ORGANISATION).*

			<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Hard to Decide</i>	<i>Agree</i>	<i>Strongly Agree</i>
1.	Ab2	Senior management has specialized capabilities that can increase our performance.	①	②	③	④	⑤
2.	Ab3	I feel very confident about Senior management's skills	①	②	③	④	⑤
3.	Int3	Sound principles seem to guide Senior management's behaviour	①	②	③	④	⑤
4.	Tr2 R	If I had my way, I wouldn't let Senior management have any influence over issues that are important to me	①	②	③	④	⑤
5.	Ben4	Senior management really looks out for what is important to me.	①	②	③	④	⑤
6.	Int5	I like Senior management's values	①	②	③	④	⑤
7.	Int2	Senior management has a strong sense of justice	①	②	③	④	⑤
8.	Ab6	Senior management is very capable of performing its job	①	②	③	④	⑤
9.	Tr3 R	I wish I had a good way to keep an eye on Senior management	①	②	③	④	⑤
10.	Ben2	My needs and desires are very important to Senior management	①	②	③	④	⑤
11.	Ben1	Senior management would not knowingly do anything to hurt me	①	②	③	④	⑤
12.	Int1	I never have to wonder whether Senior management will stick to its word	①	②	③	④	⑤
13.	Int6	Senior management tries hard to be fair in its dealings with others	①	②	③	④	⑤
14.	Tr1	I would be comfortable giving Senior management a task or problem which was critical to me, even if I could not monitor their actions.	①	②	③	④	⑤
15.	Tr4	I would be willing to let Senior management have complete control over my future career.	①	②	③	④	⑤
16.	Ben5	Senior management is very concerned about my welfare	①	②	③	④	⑤
17.	Ab1	Senior management is known to be successful at the things it tries to do	①	②	③	④	⑤
18.	Ab4	Senior management has much knowledge about the work that needs to be done	①	②	③	④	⑤
19.	In4 R	Senior management's actions and behaviours are not very consistent	①	②	③	④	⑤

PART E: *continued.*

			<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Hard to Decide</i>	<i>Agree</i>	<i>Strongly Agree</i>
20.	Ben 3	Senior management will go out of its way to help me	①	②	③	④	⑤
21.	Ab 5	Senior management is well qualified	①	②	③	④	⑤

PART F: Please feel free to comment on any aspect of your work environment which has been brought to mind during the process of completing this survey. (If there is not enough room in the space provided please continue to write on the back of this page or attach extra sheets – I am very interested in what you have to say).

**THANKYOU VERY MUCH FOR YOUR CONTRIBUTION TO THIS
RESEARCH!**

The 2007 phase of this research will involve individual interviews with a number of people who have interesting contributions to make to this research. If you would be interested in participating in an interview with me about issues raised in this survey please indicate details by which I can contact you below:

First name (or nickname) _____

Phone or Email Address _____

Appendix B: 'I'm just a cog in the wheel'

Worker engagement and burnout in relation to workplace justice, management trustworthiness and areas of worklife.

Carolyn Timms (Carolyn.Timms@jcu.edu.au)

Deborah Graham (Deborah.Graham@jcu.edu.au)

David Cottrell (David.Cottrell@jcu.edu.au)

Psychology, School of Arts and Social Sciences
James Cook University, Cairns, QLD, 4870, Australia

Abstract

Previous studies have indicated that burnout and engagement are more associated with the work milieu than individual characteristics of employees. The current study extended this theme and addressed perspectives of 561 respondents to a workplace dynamics survey. It was hypothesized that burnout, as measured by the Oldenburg Burnout Inventory (OLBI) and engagement with work, as ascertained by the Utrecht Work Engagement Survey (UWES) could be predicted by respondents' perceptions of their work environments. These were measured by responses to the Areas of Worklife Survey (AWS) and Procedural Justice measures, and also by Management Trustworthiness and Trust scales. Observed consistencies between two phases of the research, a pen and paper survey for teachers in non government schools in Queensland (n =297) and an online national (Australian) survey targeting workers in a range of industries (n =264) supported their amalgamation in the current study. K-means cluster analysis identified five distinct respondent profiles on the OLBI and the UWES. Subsequent Kruskal-Wallis analyses found significant differences between cluster groups on all other study variables. Patterns of variable distribution indicated clear support for all hypothesized relationships. In addition, support was found for Schaufeli and Bakkers' (2004) premise that Burnout and Engagement are not opposite poles of one construct.

Research into job burnout has recognized that it has more to do with its workplace context than with personal attributes of the individuals (Maslach, Schaufeli & Leiter, 2001). Job burnout is characterised by exhaustion, a feeling of being overwhelmed, over extended, emotionally and physically, so that a person feels chronically drained; and cynicism (called disengagement by Demerouti, Bakker, Vardakou & Kantas, 2002). Disengagement/cynicism is easily recognized in workplaces, people develop a cold distant attitude towards work, give up on their ideals, minimise their involvement and become negative (Maslach et al., 2001).

Sonnentag (2005) suggested that disengagement may be a coping mechanism, as individuals are prevented from obtaining 'down time' from their work. Similarly, Maslach et al. (2001) described cynicism flowing from the exhaustion experience, also suggesting a sequential progression of the burnout syndrome. On the other hand, others have seen its development as an emotional reaction to workers' doubts of organizational integrity (Abraham, 2000).

Worker engagement was thought by some (e.g. Leiter & Maslach, 2004) to be the polar opposite of worker burnout; whereas Schaufeli and Bakker (2004) saw engagement as a separate construct, negatively related to worker burnout. Worker engagement is characterised by three signature attributes: (1) dedication, a sense of pride in one's job; (2) vigour, high levels of resilience, energy and willingness to persevere; (3) absorption, being fully occupied and unreservedly engrossed in one's work (Schaufeli & Bakker).

Leiter and Maslach (2004) proposed that burnout and engagement be studied within a framework of matches or mismatches between

individuals and their work environment on six areas of worklife. These were: (1) workload, the amount of work one has to do within a given timeframe; (2), control, the amount of autonomy the worker has; (3), reward, recognition and affirmation; (4), community, a feeling of social belonging and support; (5) fairness, a spirit of mutual trust with the workplace; and finally (6) values, congruence of motivations and ideals.

Harvey, Kelloway and Duncan-Leiper (2003) found trust in management to be a vital 'buffer' helping prevent burnout among employees of a large accounting firm. Mayer and Davis (1999) described trust as a 'willingness to be vulnerable to the actions of another party' (p. 124), and described the situation where workers contracted to be vulnerable to the actions of employers. However an important component of the employment contract is the perception on the part of each party that the other is trustworthy. This is analogous to Rousseau's (1995) construct of the psychological contract as understandings which evolve as people develop working relationships which eventually become mental schemas that powerfully influence behaviour in the workplace. Mayer and Davis' (1999) descriptions of management trustworthiness included three factors: (1) ability, worker perceptions that management has the necessary strong competence to handle challenges of the job; (2) benevolence, worker perceptions that management is concerned about their welfare; and (3) integrity, worker perceptions that actions and rhetoric of management are congruent.

Parallel research into workplace justice (see Kim & Mauborgne, 1998) sought to provide information as to how management could achieve voluntary cooperation in the execution of major decisions. It was argued that individuals would demonstrate a high level of cooperation when they believed that the decision making processes within the organization were fair. Furthermore it was advanced that people, regardless of position on an organizational hierarchy, care a great deal about the justice of dealings by which decisions have been made in the workplace.

The current study seeks to combine these distinct insights into the workplace milieu and examine their possible relationships to worker engagement or burnout. It is therefore hypothesized that there will be significant positive relationships between perceptions of

management trustworthiness, procedural justice and worker engagement. An additional aim of the current research is to further explore the current dialogue between researchers (e.g. Leiter & Maslach, 2004; Schaufeli & Bakker, 2004) as to possible polarity of burnout and engagement.

Method

Participants

The present study analyses responses from two phases of the same workplace dynamics survey. First phase respondents were teachers in independent schools (n=297) who completed a pen and paper survey randomly distributed through the Queensland Independent Education Union (QIEU) to 1000 members. There were 83 (28%) men, and 214 (72%) women respondents. Respondents' mean age fell within the 45-49 year age group.

Unlike the teachers' survey, the online version of the survey targeted responses from workers in a range of industries from all states of Australia. The online survey was active for six months, participants were sought by request in a number of ways including university press release. There were 264 responses to the online survey, 107 (40.5%) were from men and 157 (59.5%) were from women. The mean age of respondents fell within the 35-39 year age group. All states and territories within Australia were represented, however most respondents came from three states: Victoria (45%); Queensland (22%) and New South Wales (20.5%). In addition, online respondents represented 28 of the 35 major subgroups in the Australian Standard Classification of Occupations (ASCO) coding system (McLennan, 2006).

Materials

Information about measures used in the survey is summarized in table 1. Likert scales measured from 1 (strongly disagree) to the highest number (strongly agree) with the exceptions of the Oldenburg Burnout Inventory (OLBI), which went the opposite way (strongly agree to strongly disagree), and the Utrecht Work Engagement Scale (UWES) which measured from 0 (never) to 6 (always).

Table 1. Measures used in survey

Name of Measure and Variables	Scale	No of Items	Source
<i>Areas of Worklife Survey (AWS)</i>	5pt		Leiter & Maslach (2006)
Workload		6	
Control		3	
Reward		4	
Community		5	
Fairness		6	
Values		5	
<i>Utrecht Work Engagement Scale (UWES)</i>	7pt		Schaufeli & Bakker (2003)
Dedication		5	
Vigour		6	
Absorption		6	
<i>Oldenburg Burnout Inventory (OLBI)</i>			Demerouti, Bakker, Vardakou & Kantas (2002)
Exhaustion		8	
Disengagement		8	
<i>Workplace Justice</i>	7pt		Moorman, Blakely & Niehoff (1998)
Interactional Justice		6	
Procedural Justice		6	
<i>Management Trustworthiness</i>	5pt		Mayer & Davis (1999)
Ability		6	
Benevolence		5	
Integrity		5	
<i>Trust in Management</i>		4	

Results

K-means cluster Analysis

In order to capture the widest array of distinct profiles for the burnout and engagement dimensions, scores for exhaustion and disengagement (OLBI), and for dedication, vigour and absorption (UWES) were standardized and submitted to K-means cluster analysis. This was done to achieve a sense of what is common in the experience of those experiencing burnout or engagement.

The technique for K-means involves partitioning cases into $n = k$ clusters, maximizing the differences between clusters and minimizing variance within clusters using euclidean distance between cluster centres (see Cortina & Wasti, 2005). It was deemed that the five cluster solution captured a wide array of distinct profiles. Convergence into five clusters was achieved in 20 iterations.

Final numbers in clusters were 144 (25.6%) in cluster one, 143 (25.4%) in cluster two, 102 (18.1%) in cluster three, 116 (20.6%) in cluster four and 56 (10%) in cluster five. Table 2 provides information as to distances between final cluster centres.

Table 2. Euclidean distances between final cluster centres

Cluster	1	2	3	4
1				
2	2.70			
3	1.37	1.36		
4	2.09	1.33	1.27	
5	4.18	1.66	2.92	2.33

The distinctive nature of the clusters is plotted in Figure 1, where symbolic representations have been assigned to the variables. Because variable scales ranged from a four point scale (OLBI) to seven point scale (UWES), scores were standardized for purposes of visual comparison. Figure 1 demonstrates that individuals in cluster one ($n=144$) and cluster two ($n=143$) indicated higher agreement with UWES variables than the OLBI variables, these groups were called En1 and En2. Clusters four ($n=116$), five ($n=56$), and to a lesser extent, cluster three ($n=102$), revealed a clear burnout pattern with the OLBI dimensions of exhaustion and disengagement demonstrably higher than the UWES dimensions of dedication, vigour and absorption, these clusters were called Bu1, Bu2 and Bu3.

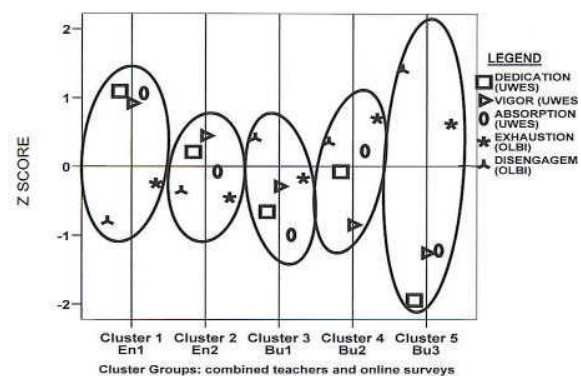


Figure 1. Cluster distribution of standardized engagement (UWES) and burnout (OLBI) variables

Management Trustworthiness and Procedural Justice within Cluster Groupings

The creation of cluster groups provided researchers with a categorical variable with which to further test variables supposed by the researchers to be related to the development of workplace engagement and burnout. Cluster distribution of the trustworthiness, trust and workplace justice measures were further examined using a sequence of Kruskal Wallis tests. Details of these tests are found in table 3.

Table 3. Kruskal Wallis tests between cluster groups for management trustworthiness, trust and workplace justice

Variables	df	χ^2
Management Ability	4	106.22***
Management Benevolence	4	136.69***
Management Integrity	4	117.57***
Trust in Management	4	96.98***
Interactional Justice	4	158.21***
Procedural Justice	4	138.57***

Note. *** $p < .001$

Areas of Worklife and Cluster Groups

In the same way, AWS variables were examined within the clusters using a sequence of Kruskal Wallis tests, these are found in table 4.

Table 4. Kruskal Wallis tests between cluster groups AWS variables

Variables	df	χ^2
Workload	4	93.16***
Control	4	141.93***
Reward	4	138.29***
Community	4	107.22***
Fairness	4	152.26***
Values	4	196.60***

Note. *** $p < .001$

Figures 2 and 3 provide visual comparisons of cluster patterns in the distribution of Management Trustworthiness, Procedural Justice and AWS variables.

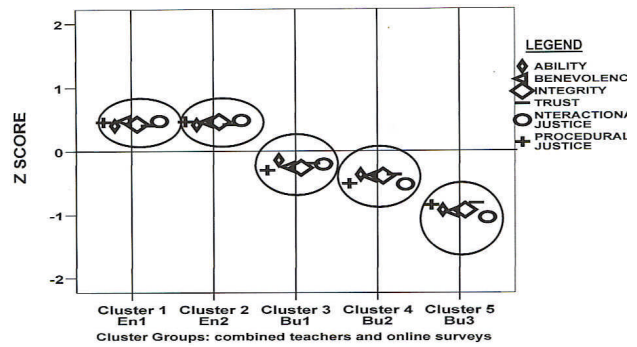


Figure 2. Distribution of Trustworthiness and Workplace Justice variables within Cluster Groups

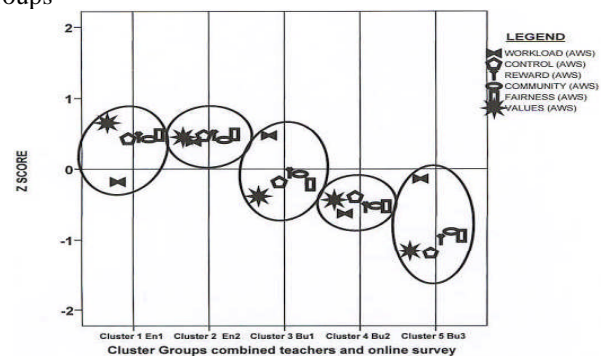


Figure 3. Distribution of AWS variables within Cluster Groups

Discussion

Hypothesized positive relationships between management trustworthiness (Mayer & Davis, 1999), procedural justice (Moorman et al., 1998) and engagement (Schaufeli & Bakker, 2003), and negative relationships between the variables and burnout (Demerouti et al., 2002) were supported by the distribution of the variables within cluster groups in the current study. Furthermore, the AWS (Leiter & Maslach, 2006) provided researchers with more contextual information as to conditions within the workplace environment. In addition, the cluster analysis process identified groups of individuals with particular response patterns in regard to the UWES and the OLBI and noted co variation of other study variables within the clusters.

Responses to management trustworthiness, trust and workplace justice measures were more positive within the first two clusters (En1 and En2) demonstrating higher responses on the UWES variables of dedication, vigour and absorption. This pattern was repeated in the AWS variables of control, reward, community, fairness and values, although En1

did not endorse workload. The three clusters, (Bu1, Bu2 and Bu3) which indicated higher responses to the OLBI variables of exhaustion and disengagement, revealed a consistent pattern of response to other variables.

En1 (cluster one) “the empowered ones”

En1 participants (n=144) indicated an engagement pattern. Examination of the management trustworthiness (Mayer & Davis, 1999) and procedural justice (Moorman et al., 1998) patterns shown by the clusters indicated that En1 respondents tended to agree that their management was trustworthy and that workplace justice procedures were in place. Further examination of the AWS (Leiter & Maslach, 2006) variables indicated that respondents in this cluster reported matches on all areas of worklife with the exception of workload.

En2 (cluster two) ‘at risk’

The pattern of response for En2 (n= 143) was not as clear as that of En1. While scores for UWES and OLBI variables were in the same direction as En1 respondents, they hovered around the mean. This indicated less than enthusiastic endorsement or dis-endorsement of these variables. Comments from En2 respondents were along the lines of: “It’s interesting to assess yourself and your boss. It seems I may be a bit jaded; and him too” (*male, journalist, En2*).

Bu1 (cluster three) “the unengaged”

While Bu1 respondents (n = 102) did not indicate agreement with the OLBI dimension of exhaustion, they did indicate agreement with disengagement. This is consistent with the views of Abraham (2000) that cynicism (called disengagement in the OLBI) rises as an emotional reaction to workers’ doubts of management integrity. Certainly, comments from participants were along the lines of: “complete frustration with the games management plays with it’s employees” (*female, nurse, Bu1*).

Bu2 and Bu3 (clusters four and five) ‘the burnout experience’

Bu2 (n = 116) and Bu3 (n = 56) respondents indicated that they were experiencing burnout, with those in Bu3 suffering a more extreme experience. Those respondents who commented referred to their lack of reward and control, for example: “management is a top down process. I’m just a cog in the wheel for making money, no

recognition and no thanks for extra efforts” (*female, teacher respondent to online survey, Bu2*). While it is impossible within cross sectional research to suggest a progression of experience it is interesting to note that Bu2 respondents reported higher means for exhaustion than disengagement and Bu3 respondents (who reported a more severe burnout experience) reported higher disengagement. This is supportive of previous indications from Leiter and Maslach (2004) and Sonnentag (2005) that disengagement (cynicism) develops in response to serious exhaustion and is a coping mechanism as the individual seeks to extract some meaning from the distress in their worklife.

Burnout and Engagement, ‘Polar Opposites’?

Leiter and Maslach (2004) suggested that burnout and engagement were polar opposites (Maslach et al., 2001). However, it is interesting to note that Bu1 respondents indicated lack of agreement with both vigour (UWES) and exhaustion (OLBI), indicating that these people did not feel energised by their jobs, yet they were also not exhausted by them. In addition, Bu2 respondents reported similar means for absorption as they did for disengagement, indicating the possibility that people can find their job absorbing while feeling disengaged and cynical about aspects of it. This is consistent with Schaufeli and Bakker’s (2004) view that engagement is not a polar opposite of burnout (Leiter & Maslach, 2004; Maslach et al., 2001), but rather a separate construct that is negatively correlated with it.

Limitations

The cross sectional nature of the present study has meant that while support can be advanced for previous studies, it is only possible to observe relationships between variables, rather than determine causal direction of those variables.

Conclusion

The workplace context in the current study was defined through the AWS (Leiter & Maslach, 2006) and management contributions were measured by perceptions of management trustworthiness (Mayer & Davis, 1999) and procedural justice (Moorman et al., 1998). Hypothesized relationships between the variables were supported, indicating that trustworthy management and procedural

justice, as well as matches on the AWS correlate positively with engagement of workers and negatively with worker burnout. Future directions of this research will focus on developing more detailed understandings of the workplace contexts in which burnout and engagement occur.

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Appendix C: Maximum Likelihood Factor Analyses of AWS, OLBI and UWES items

Explains 62.79% of variance

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

Rotation converged in 15 iterations.

Table C.1. Measures of Factorability

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.929
Bartlett's Test of Sphericity	Approx. Chi-Square	7662.280
	df	406
	Sig.	.000

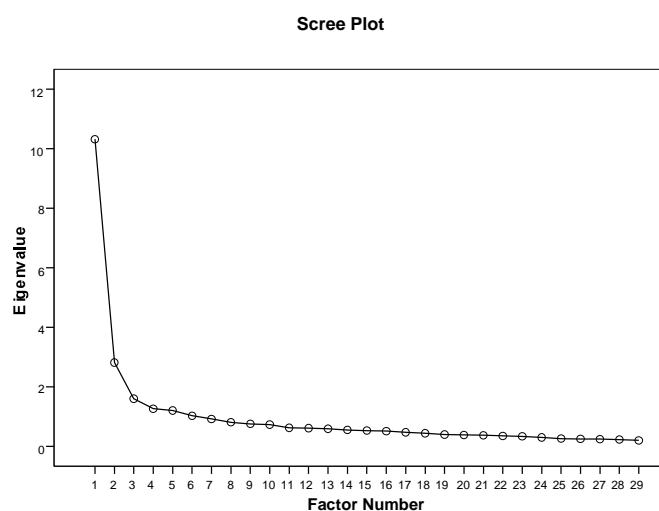


Figure C.1. Scree plot of AWS items

Table C.2. Factor Correlation Matrix AWS items

Factor	1	2	3	4	5	6
1	1.000	-.012	-.345	.290	-.380	-.496
2	-.012	1.000	-.205	.158	-.223	-.151
3	-.345	-.205	1.000	-.384	.441	.467
4	.290	.158	-.384	1.000	-.492	-.479
5	-.380	-.223	.441	-.492	1.000	.604
6	-.496	-.151	.467	-.479	.604	1.000

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

Table C.3. Pattern Matrix, factor loadings AWS items

Sn	Scale		Factor					
			1	2	3	4	5	6
B14	Val1	My values and the organisation's are alike.	.525	-.046	-.156	.194	-.003	-.186
B28	Val4	This organisation is committed to quality.	.480	-.002	-.071	.092	-.120	-.172
B15	Com1	<i>People trust one another to fulfill their roles.</i>	.423	.013	-.015	.401	-.045	-.018
B26	F1	<i>Resources are allocated fairly around here.</i>	.408	.094	-.060	.057	-.064	-.291
B24	Val3	My personal career goals are consistent with the organisation's stated goals.	.354	.014	-.242	.126	-.088	-.007
B8	Val5	Working here forces me to compromise my values (RS).	.300	.135	-.176	.276	-.018	-.097
B7	Cn2	<i>I can influence management to obtain the equipment and space I need for my work.</i>	.245	.015	-.198	.083	-.160	-.145
B27	Val2	The organisation's goals influence my day to day work activities.	.220	-.143	.022	-.023	-.127	-.061
B17	W1	I do not have time to do the work that must be done.	.069	.806	-	-.147	-.011	-.050
					8.19E			
B29	W5	B29workload 5: I have enough time to do what's important in my job.	.281	.696	-.085	-.094	-.138	.094
B5	W4	B5workload 4 (reverse scored) I have so much work to do on the job that it takes me away from my personal interests.	-.122	.651	-.017	.089	-.007	-.002
B19	W3	After work I come home too tired to do the things I like to do (RS).	-.038	.594	-.077	-.029	-.044	-.123
B4	W6	I leave my work behind when I go home at the end of the day.	-.022	.472	.023	.033	.071	-.022
B10	W2	I work intensely for prolonged periods of time (RS).	-.049	.441	.048	.076	-.066	.046
B2	Cn1	I have control over how I do my work.	-.079	.008	-.944	.012	.007	.061
B1	Cn3	I have professional autonomy in my work.	-.014	-.024	-.772	-.050	-.020	-.057
B18	Com3	Members of my work group cooperate with each other.	.055	-.016	-.038	.756	.005	-.043
B9	Com4	Members of my work group communicate openly.	.048	.022	-.040	.748	.045	-.083
B25	Com5	I don't feel close to my colleagues (RS).	-.129	.004	.017	.674	-.135	-.004
B22	Com2	I am a member of a supportive work group.	.121	.008	-.018	.664	-.159	-.035
B3	Rew3	My efforts usually go unnoticed (RS).	-.012	.042	-.063	.001	-.701	-.129
B16	Rew2	My work is appreciated.	.132	.038	-.143	.070	-.683	-.001
B20	Rew1	I receive recognition from others for my work.	-.145	.002	-.068	.209	-.668	-.002
B13	Rew4	I do not get recognized for all the things I contribute.	.059	.146	.048	-.004	-.579	-.170
B23	F6	Its not what you know but who you know that determines a career here (RS).	-.078	-.005	-.041	.039	-.059	-.807
B21	F5	Favouritism determines how decisions are made at work.	-.066	.037	-.032	.077	-.082	-.806
B6	F4	Management treats all employees fairly.	.373	.049	-.035	.102	.002	-.460
B12	F2	Opportunities are decided solely on merit.	.134	.009	-.049	-.029	-.159	-.399
B11	F3	There are effective appeal procedures available when I question the fairness of a decision.	.229	.059	-.090	.196	-.003	-.311

Table C.4. Structure Matrix, item factor correlations AWS items

Sn	Scale		Factor					
			1	2	3	4	5	6
B14	Val 1	My values and the organisation's are alike	.729	.039	-.490	.489	-.468	-.607
B28	Val4	This organisation is committed to quality	.662	.073	-.404	.399	-.482	-.559
B26	F1	<i>Resources are allocated fairly around here</i>	.613	.168	-.405	.384	-.470	-.601
B15	Com1	<i>People trust one another to fulfill their roles</i>	.571	.087	-.345	.562	-.423	-.456
B24	Va3	My personal career goals are consistent with the organisation's stated goals	.510	.099	-.457	.369	-.398	-.410
B27	Va2	The organisation's goals influence my day to day work activities	.286	-	-.100	.102	-.195	-.204
B17	W1	I do not have time to do the work that must be done	.046	.792	-.161	.030	-.175	-.142
B29	W5	I have enough time to do what's important in my job	.280	.712	-.305	.153	-.334	-.228
B5	W4	I have so much work to do on the job that it takes me away from my personal interests (RS).	-.095	.672	-.147	.168	-.158	-.095
B19	W3	After work I come home too tired to do the things I like to do (RS).	.050	.634	-.251	.163	-.255	-.241
B	W	I leave my work behind when I go home at the end of the day.	-.042	.460	-.058	.068	-.046	-.045
B10	W2	I work intensely for prolonged periods of time (RS).	-.047	.452	-.062	.123	-.134	-.050
B2	Cn1	I have control over how I do my work.	.217	.193	-.891	.319	-.350	-.343
B1	Cn3	I have professional autonomy in my work.	.274	.140	-.778	.276	-.360	-.395
B22	Cm2	I am a member of a supportive work group	.397	.156	-.403	.802	-.562	-.519
B18	Com 3	Members of my work group cooperate with each other	.306	.116	-.361	.802	-.426	-.444
B9	Com 3	Members of my work group communicate openly	.302	.150	-.366	.798	-.413	-.460
B25	Com 5	I don't feel close to my colleagues(RS).	.114	.139	-.259	.699	-.413	-.337
B8	Val5	<i>Working here forces me to compromise my values (RS).</i>	.494	.230	-.466	.507	-.434	-.491
B16	Rew 2	My work is appreciated	.461	.229	-.525	.505	-.839	-.585
B3	Rew 3	My efforts usually go unnoticed (RS).	.340	.231	-.438	.435	-.812	-.583
B20	Rew 1	I receive recognition from others for my work	.194	.199	-.395	.523	-.748	-.466
B13	Rew 4	I do not get recognized for all the things I contribute.	.344	.290	-.335	.384	-.714	-.547
B21	F5	Favouritism determines how decisions are made at work	.398	.196	-.458	.502	-.604	-.880
B23	F6	Its not what you know but who you know that determines a career here (RS).	.370	.145	-.431	.448	-.553	-.842
B6	F4	Management treats all employees fairly	.642	.136	-.427	.451	-.494	-.717
B12	F2	Opportunities are decided solely on merit	.401	.108	-.343	.300	-.460	-.572
B11	F3	There are effective appeal procedures available when I question the fairness of a decision	.472	.153	-.403	.456	-.427	-.571
B7	Cn2	<i>I can influence management to obtain the equipment and space I need for my work</i>	.470	.124	-.456	.381	-.473	-.498

Extraction Method: Maximum Likelihood.

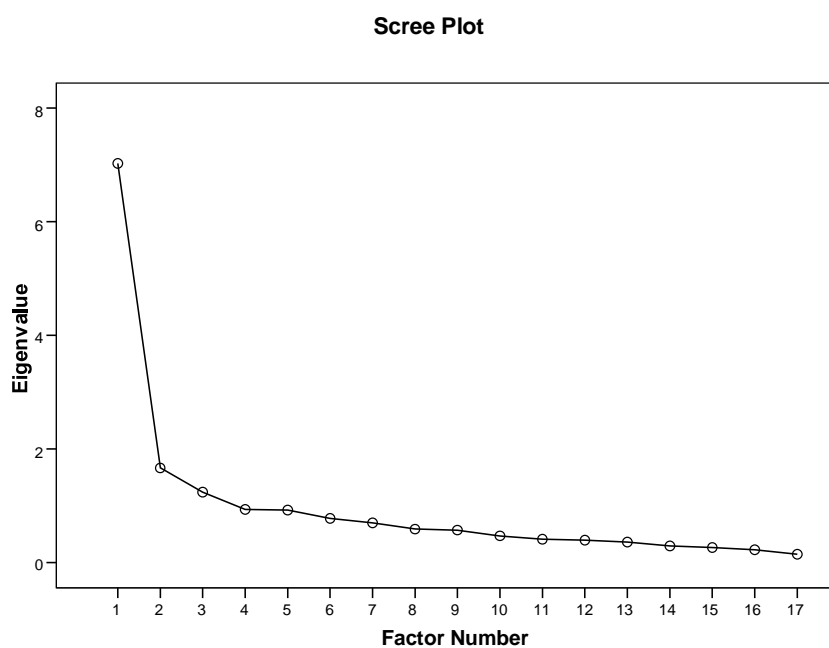
Rotation Method: Oblimin with Kaiser Normalization.

UWES items

Explain 58.43% of variance

Table C.5. Measures of Factorability

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.904
Bartlett's Test of Sphericity	Approx. Chi-Square	4425.695
	df	136
	Sig.	.000

*Figure C.2. Scree plot of UWES items**Table C.6. Factor Correlation Matrix*

Factor	1	2	3
1	1.000	.592	.172
2	.592	1.000	.395
3	.172	.395	1.000

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

Table C.7. Pattern Matrix, factor loadings UWES items

Sn	Scale		Factor		
			1	2	3
Ca2	Vig2	At my job, I feel strong and vigorous	.999	.026	-.121
Ca6	Vig1	At my work, I feel bursting with energy	.536	.331	.018
Ca1	Vig3	I can continue working for very long periods of time	.309	-.002	.220
Ca13	Ded2	I am enthusiastic about my job	-.028	.957	-.049
Ca12	Ded3	My job inspires me	-.039	.933	-.035
Ca15	Vig3	When I get up in the morning I feel like going to work	.171	.682	-.073
Ca3	Ded1	I find the work that I do full of meaning and purpose	.180	.616	.049
Ca11	Ab3	I feel happy when I am working intensely	-.013	.578	-.074
Ca17	Ab1	Time flies when I am working	8.33E-005	.539	.171
Ca7	Ded4	I am proud of the work that I do	.028	.531	.090
Ca16	Ab4	I am immersed in my work	-.003	.512	.405
Ca10	Ded5	To me, my job is challenge	.015	.502	.227
Ca9	Vig5	At my job, I am very resilient mentally	.114	.444	-.157
Ca8	Vig6	At my work I always persevere, even when things do not go well	-.018	.377	.091
Ca4	Ab6	It is difficult to detach myself from my job	-.010	-.059	.796
Ca5	Ab5	I get carried away when I am working	.076	.155	.622
Ca14	Ab2	When I am working, I forget everything else around me	.033	.261	.347

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

a Rotation converged in 9 iterations.

Table C.8. Structure Matrix, item factor correlations

Sn	Scale		Factor		
			1	2	3
Ca2	Vig2	At my job, I feel strong and vigorous	.993	.569	.061
Ca6	Vig1	At my work, I feel bursting with energy	.736	.656	.241
Ca1	Vig4	I can continue working for very long periods of time	.346	.268	.272
Ca13	Ded2	I am enthusiastic about my job	.530	.921	.324
Ca12	Ded3	My job inspires me	.507	.896	.327
Ca15	Vig3	When I get up in the morning I feel like going to work	.562	.754	.226
Ca3	Ded1	I find the work that I do full of meaning and purpose	.553	.742	.323
Ca16	Ab4	I am immersed in my work	.370	.670	.607
Ca17	Ab1	Time flies when I am working	.349	.607	.384
Ca10	Ded5	To me, my job is challenge	.351	.600	.428
Ca7	Ded4	I am proud of the work that I do	.358	.584	.305
Ca11	Ab3	I feel happy when I am working intensely	.316	.541	.152
Ca9	Vig5	At my job, I am very resilient mentally	.351	.450	.038
Ca8	Vig6	At my work I always persevere, even when things do not go well	.221	.403	.237
Ca4	Ab6	It is difficult to detach myself from my job	.091	.248	.770
Ca5	Ab5	I get carried away when I am working	.274	.445	.696
Ca14	Ab2	When I am working, I forget everything else around me	.246	.417	.456

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

Burnout Variables

Explain 52.62% of variance

Table C.9. Measures of Factorability

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.894
Bartlett's Test of Sphericity	Approx. Chi-Square	2661.065
	df	120
	Sig.	.000

Scree Plot

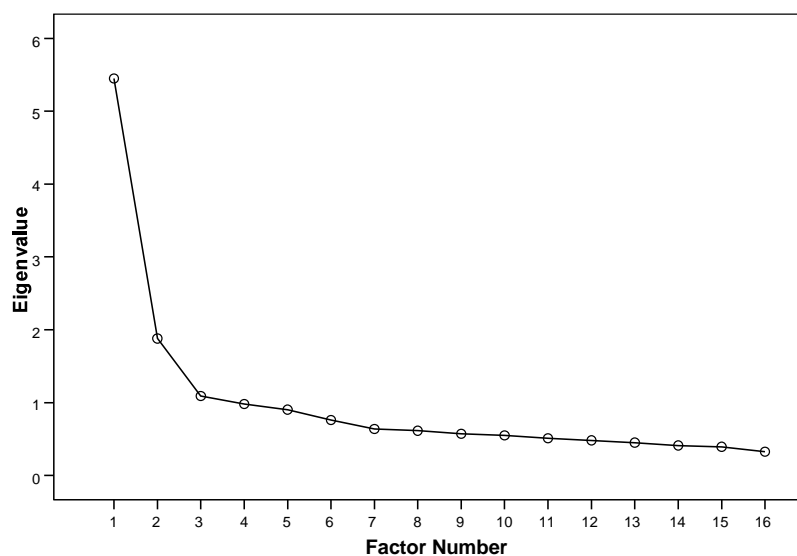


Figure C.3. Scree plot of OLBI items

Table C.10. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.346	-.358
2	-.346	1.000	.096
3	-.358	.096	1.000

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

Table C.11. Pattern Matrix, factor loadings OLBI items

Sn	Scale		Factor		
			1	2	3
Cb4	Ex2	After work, I tend to need more time than in the past in order to relax and feel better (RS).	.720	-.035	-.015
Cb8	Ex4	During my work, I often feel emotionally drained (RS).	.667	-.012	.052
Cb1 0	Ex5	After working I have enough time for my leisure activities.	.646	.150	-.200
Cb1 2	Ex6	After my work, I usually feel worn out and weary (RS).	.623	.112	-.083
Cb3	Dis2	<i>It happens more and more often that I talk about work in a negative way (RS).</i>	.563	-.367	.063
Cb2	Ex1	There are days when I feel tired before I arrive at work (RS).	.549	-.065	.039
Cb1 1	Dis6	<i>Sometimes I feel sickened by my work tasks (RS).</i>	.416	-.194	-.083
Cb5	Ex3	I can tolerate the pressure of my work very well.	.411	-.083	-.217
Cb1 5	Dis7	I feel more and more engaged by my work.	-.025	-.636	-.409
Cb7	Dis4	I find my work a positive challenge.	.242	-.623	1.79E-005
Cb1	Dis1	I always find new and interesting aspects in my work.	.051	-.615	-.080
Cb6	Dis3	Lately, I tend to think less at work and do my job almost mechanically (RS).	.179	-.567	.181
Cb9	Dis5	Over time, one can become disconnected from this type of work (RS).	.237	-.474	.115
Cb1 6	Ex8	<i>When I work, I usually feel energized.</i>	.222	-.453	-.297
Cb1 3	Dis7	This is the only type of work that I can imagine myself doing.	-.140	-.353	.010
Cb1 4	Ex7	<i>Usually, I can manage the amount of my work well.</i>	.178	.022	-.608

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

a Rotation converged in 9 iterations.

Table C.12. Structure Matrix, item factor loadings OLBI items

Sn	Scale		Factor		
			1	2	3
Cb4	Ex2	After work, I tend to need more time than in the past in order to relax and feel better (RS).	.738	-.286	-.276
Cb3	Dis2	It happens more and more often that I talk about work in a negative way (RS).	.668	-.556	-.174
Cb10	Ex5	After working I have enough time for my leisure activities.	.666	-.093	-.417
Cb8	Ex4	During my work, I often feel emotionally drained (RS).	.653	-.238	-.188
Cb12	Ex6	After my work, I usually feel worn out and weary (RS).	.614	-.112	-.296
Cb2	Ex1	There are days when I feel tired before I arrive at work (RS).	.557	-.251	-.163
Cb5	Ex3	I can tolerate the pressure of my work very well.	.517	-.247	-.372
Cb11	Dis6	Sometimes I feel sickened by my work tasks (RS).	.513	-.346	-.251
Cb7	Dis4	I find my work a positive challenge.	.457	-.706	-.146
Cb15	Dis7	I feel more and more engaged by my work.	.342	-.666	-.462
Cb1	Dis1	I always find new and interesting aspects in my work.	.293	-.641	-.157
Cb6	Dis3	Lately, I tend to think less at work and do my job almost mechanically (RS).	.310	-.611	.062
Cb16	Ex8	When I work, I usually feel energized.	.485	-.558	-.420
Cb9	Dis5	Over time, one can become disconnected from this type of work.	.360	-.545	-.016
Cb13	Dis7	This is the only type of work that I can imagine myself doing	-.021	-.304	.026
Cb14	Ex7	Usually, I can manage the amount of my work well	.389	-.099	-.670

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

Appendix D: Path Analyses - Tables

Table D.1. Regression weights, Standard Errors, Critical Ratios and probabilities of pathways in combined data set (n=515) (non significant pathways in italics).

<i>From</i>	<i>To</i>	β	<i>beta</i>	<i>S.E.</i>	<i>t</i>	<i>p</i>
<i>Absorption</i>	<i>Exhaustion</i>	.07	.04	.02	1.74	<i>ns</i>
Absorption	Vigour	.25	.23	.04	6.03	***
Community	Values	.23	.20	.03	5.92	***
Control	Community	.20	.21	.04	4.78	***
Control	Fairness	.25	.27	.04	7.18	***
Control	Reward	.55	.62	.04	14.72	***
<i>Control</i>	<i>Workload</i>	.08	.08	.05	1.63	<i>ns</i>
Dedication	Absorption	.64	.52	.03	17.97	***
Dedication	Disengagement	-.37	-.18	.02	-9.65	***
Dedication	Vigour	.47	.36	.03	11.06	***
Exhaustion	Disengagement	.31	.31	.03	10.46	***
Fairness	Values	.43	.37	.04	9.83	***
Reward	Community	.49	.46	.04	12.01	***
<i>Reward</i>	<i>Values</i>	.07	.05	.03	1.56	<i>ns</i>
<i>Values</i>	<i>Absorption</i>	.03	.03	.04	.83	<i>ns</i>
Values	Dedication	.44	.59	.06	9.80	***
Values	Disengagement	-.14	-.09	.02	-4.08	***
Values	Exhaustion	-.17	-.11	.02	-4.97	***
Values	Vigour	.08	.08	.04	2.06	.039
Vigour	Exhaustion	-.40	-.24	.02	-10.14	***
Workload	Exhaustion	-.51	-.31	.02	-15.44	***
<i>Additional pathways to the model</i>						
Absorption	Disengagement	-.20	-.12	.02	-5.81	***
Community	Fairness	.29	.30	.04	7.83	***
Control	Dedication	.21	.27	.06	4.72	***
Control	Values	.17	.16	.03	4.75	***
Control	Vigour	.14	.13	.03	3.97	***
Reward	Disengagement	-.14	-.07	.02	-4.34	***
Reward	Fairness	.38	.36	.04	9.85	***
Reward	Workload	.27	.23	.04	5.40	***
Workload	Absorption	-.34	-.36	.03	-10.93	***
Workload	Dedication	-.15	-.19	.05	-3.93	***
Workload	Vigour	.16	.15	.03	4.85	***

Note 1. *** $p < .001$

Note 2. β = standardised estimates, beta= un-standardised estimates, S.E. = Standard error.

Table D.2. Regression weights, Standard Errors, Critical Ratios and probabilities of pathways in new cluster one ‘the empowered ones’ (*non significant pathways in italics*).

<i>From</i>	<i>To</i>	β	<i>beta</i>	<i>S.E.</i>	<i>t</i>	<i>p</i>
<i>Absorption</i>	<i>Exhaustion</i>	.08	.04	.06	.70	<i>ns</i>
<i>Absorption</i>	<i>Vigour</i>	.17	.14	.08	1.74	<i>ns</i>
Community	Values	.23	.22	.09	2.45	.014
<i>Control</i>	<i>Community</i>	.15	.13	.10	1.28	<i>ns</i>
Control	Fairness	.30	.35	.12	2.98	.003
Control	Reward	.49	.56	.12	4.77	***
<i>Control</i>	<i>Workload</i>	.10	.10	.10	.98	<i>ns</i>
						(removed)
Dedication	Absorption	.31	.40	.14	2.88	.004
Dedication	Disengagement	-.32	-.23	.08	-2.985	.003
Dedication	Vigour	.46	.49	.12	4.21	***
<i>Exhaustion</i>	<i>Disengagement</i>	.17	.20	.11	1.75	<i>ns</i>
Fairness	Values	.62	.43	.07	6.04	***
<i>Reward</i>	<i>Values</i>	.02	.01	.08	.16	<i>ns</i>
<i>Values</i>	<i>Absorption</i>	.04	.04	.13	.33	<i>ns</i>
Values	Dedication	.46	.45	.10	4.37	***
Values	Disengagement	-.21	-.14	.07	-2.05	.041
<i>Values</i>	<i>Exhaustion</i>	-.04	-.03	.06	-.41	<i>ns</i>
<i>Values</i>	<i>Vigour</i>	.05	.05	.12	.39	<i>ns</i>
Vigour	Exhaustion	-.31	-.17	.06	-2.80	.005
Workload	Exhaustion	-.44	-.20	.05	-3.74	***
Added Pathways						
Absorption	Disengagement	-.31	-.17	.05	3.16	***
Community	Vigour	.26	.25	.10	2.43	.015
Reward	Community	.43	.33	.09	3.73	***
Reward	Fairness	.46	.47	.11	4.17	***
Workload	Absorption	-.51	-.51	.10	-5.38	***
Joint predictor variables (correlation)						
<i>Control</i>	<i>Workload</i>	.05	.02	.05	.42	<i>ns</i>

Note 1. *** $p < .001$

Note 2. β = standardised estimates, beta = un-standardised estimates, S.E. = Standard error.

Table D.3. Regression weights, Standard Errors, Critical Ratios and probabilities of pathways in new cluster two 'under pressure' (n=110) (*non significant pathways in italics*).

<i>From</i>	<i>To</i>	β	<i>beta</i>	<i>S.E.</i>	<i>t</i>	<i>p</i>
Absorption	Exhaustion	.17	.10	.05	1.99	.047
Absorption	Vigour	.27	.23	.07	3.10	.002
Community	Values	.42	.34	.06	5.58	***
<i>Control</i>	<i>Community</i>	.17	.18	.11	1.58	<i>ns</i>
Control	Fairness	.24	.29	.11	2.61	.009
Control	Reward	.60	.70	.09	7.86	***
<i>Control</i>	<i>Workload</i>	.16	.13	.08	1.64	<i>ns</i>
<i>Dedication</i>	<i>Absorption</i>	.16	.16	.10	1.68	<i>ns</i>
<i>Dedication</i>	<i>Disengagement</i>	-.11	-.07	.06	-1.25	<i>ns</i>
Dedication	Vigour	.27	.23	.08	3.06	.002
Exhaustion	Disengagement	.21	.22	.10	2.28	.023
Fairness	Values	.45	.32	.06	5.80	***
<i>Reward</i>	<i>Values</i>	.03	.02	.05	.39	<i>ns</i>
<i>Values</i>	<i>Absorption</i>	.01	.01	.08	.14	<i>ns</i>
<i>Values</i>	<i>Dedication</i>	.15	.12	.07	1.58	<i>ns</i>
Values	Disengagement	-.27	-.13	.04	-3.00	.003
Values	Exhaustion	-.27	-.12	.04	-3.22	.001
<i>Values</i>	<i>Vigour</i>	.10	.07	.06	1.18	<i>ns</i>
<i>Vigour</i>	<i>Exhaustion</i>	-.13	-.09	.06	-1.46	<i>ns</i>
Workload	Exhaustion	-.39	-.19	.04	-4.77	***
Additional pathways						
Absorption	Disengagement	-.20	-.13	.05	-2.32	.020
Community	Fairness	.35	.40	.09	4.22	***
Reward	Community	.35	.33	.10	3.28	.001
Reward	Fairness	.19	.20	.10	1.95	.052
Joint predictor variables (correlation)						
<i>Control</i>	<i>Workload</i>	.16	.07	.04	1.60	<i>ns</i>

Note 1. *** $p < .001$

Note 2. β = standardised estimates, beta = un-standardised estimates, S.E. = Standard error

Table D.4. Regression weights, Standard Errors, Critical Ratios and probabilities of pathways in new cluster three 'the unengaged' match subgroup (n=95) (non significant pathways in italics).

<i>From</i>	<i>To</i>	β	<i>beta</i>	<i>S.E.</i>	<i>t</i>	<i>p</i>
<i>Absorption</i>	<i>Exhaustion</i>	.09	.05	.05	1.02	<i>ns</i>
Absorption	Vigour	.27	.25	.09	2.86	.004
Community	Values	.18	.18	.09	1.97	.049
<i>Control</i>	<i>Community</i>	.07	.06	.09	.67	<i>ns</i>
<i>Control</i>	<i>Fairness</i>	.16	.13	.08	1.69	<i>ns</i>
Control	Reward	.31	.30	.10	3.13	.002
<i>Control</i>	<i>Workload</i>	-.01	-.01	.14	-.06	<i>ns</i>
						(removed)
Dedication	Absorption	.30	.28	.09	3.20	.001
Dedication	Disengagement	-.34	-.18	.05	-3.55	***
<i>Dedication</i>	<i>Vigour</i>	.08	.07	.08	.85	
Exhaustion	Disengagement	.18	.19	.10	1.95	.051
Fairness	Values	.35	.38	.11	3.55	***
<i>Reward</i>	<i>Values</i>	-.05	-.04	.08	-.48	<i>ns</i>
<i>Values</i>	<i>Absorption</i>	.06	.07	.10	.65	<i>ns</i>
<i>Values</i>	<i>Dedication</i>	.08	.10	.12	.80	<i>ns</i>
<i>Values</i>	<i>Disengagement</i>	-.07	-.04	.06	-.74	<i>ns</i>
<i>Values</i>	<i>Exhaustion</i>	-.01	-.01	.05	-.11	<i>ns</i>
<i>Values</i>	<i>Vigour</i>	-.04	-.04	.11	-.40	<i>ns</i>
Vigour	Exhaustion	-.26	-.15	.05	-3.05	.002
Workload	Exhaustion	-.51	-.19	.03	-5.87	***
Additional Pathways						
Community	Fairness	.30	.27	.08	3.28	.001
Control	Dedication	.30	.30	.10	2.89	.004
Control	Exhaustion	-.22	-.11	.05	-2.49	.013
Control	Values	.25	.22	.08	2.76	.006
Fairness	Vigour	.43	.47	.12	4.05	***
Reward	Community	.21	.20	.10	2.03	.042
Reward	Fairness	.26	.22	.08	2.77	.006
Reward	Vigour	-.22	-.20	.09	-2.32	.020
Workload	Absorption	-.34	-.23	.06	-3.69	***
Joint predictor variables correlations						
<i>Control</i>	<i>Workload</i>	-.01	-.00	.03	-.06	<i>ns</i>

Note 1. *** $p < .001$ Note 2. β = standardised estimates, beta = un-standardised estimates, S.E. = Standard error.

Table D.5. Regression weights, Standard Errors, Critical Ratios and probabilities of pathways in new cluster three 'the unengaged mismatch subgroup (n=63) (*non significant pathways in italics*).

<i>From</i>	<i>To</i>	β	<i>beta</i>	<i>S.E.</i>	<i>t</i>	<i>p</i>
<i>Absorption</i>	<i>Exhaustion</i>	-.12	-.06	.06	-1.03	<i>ns</i>
<i>Absorption</i>	<i>Vigour</i>	.12	.14	.12	1.11	<i>ns</i>
<i>Community</i>	<i>Values</i>	.03	.02	.11	.18	<i>ns</i>
<i>Control</i>	<i>Community</i>	.00	.01	.14	.04	<i>ns</i>
<i>Control</i>	<i>Fairness</i>	.15	.14	.10	1.35	<i>ns</i>
<i>Control</i>	<i>Reward</i>	.11	.13	.15	.86	<i>ns</i>
<i>Control</i>	<i>Workload</i>	-.13	-.13	.12	-1.03	<i>ns</i>
<i>Dedication</i>	<i>Absorption</i>	.12	.11	.11	1.03	<i>ns</i>
<i>Dedication</i>	<i>Disengagement</i>	-.40	-.19	.05	-3.45	***
<i>Dedication</i>	<i>Vigour</i>	.37	.36	.11	3.31	***
<i>Exhaustion</i>	<i>Disengagement</i>	.15	.15	.11	1.38	<i>ns</i>
<i>Fairness</i>	<i>Values</i>	.09	.09	.13	.63	<i>ns</i>
<i>Reward</i>	<i>Values</i>	.06	.04	.10	.42	<i>ns</i>
<i>Values</i>	<i>Absorption</i>	.25	.23	.12	2.10	.036
<i>Values</i>	<i>Dedication</i>	.23	.25	.13	1.91	<i>ns</i>
<i>Values</i>	<i>Disengagement</i>	.05	.02	.06	.42	<i>ns</i>
<i>Values</i>	<i>Exhaustion</i>	-.02	-.01	.06	-.21	<i>ns</i>
<i>Values</i>	<i>Vigour</i>	.13	.14	.12	1.13	<i>ns</i>
<i>Vigour</i>	<i>Exhaustion</i>	-.23	-.11	.05	-2.12	.034
<i>Workload</i>	<i>Exhaustion</i>	-.53	-.24	.05	-4.93	***
Additional pathways						
<i>Community</i>	<i>Dedication</i>	-.26	-.22	.10	-2.18	.029
<i>Community</i>	<i>Disengagement</i>	-.40	-.15	.04	-3.52	***
<i>Community</i>	<i>Fairness</i>	.35	.28	.10	2.93	.003
<i>Fairness</i>	<i>Vigour</i>	-.27	-.28	.11	-2.49	.013
<i>Reward</i>	<i>Community</i>	.32	.31	.12	2.66	.008
<i>Workload</i>	<i>Absorption</i>	-.26	-.22	.10	-2.19	.029
Joint predictor variables (correlation)						
<i>Control</i>	<i>Workload</i>	.13	-.04	.04	-1.01	.312

Note 1. *** $p < .001$

Note 2. β = standardised estimates, beta = un-standardised estimates, S.E. = Standard error.

Table D.6. Regression weights, Standard Errors, Critical Ratios and probabilities of pathways in the burnout experience 1 (NC4, n=95) (*non significant pathways in italics*).

<i>From</i>	<i>To</i>	β	<i>beta</i>	<i>S.E.</i>	<i>t</i>	<i>p</i>
<i>Absorption</i>	<i>Exhaustion</i>	.17	.09	.05	1.79	<i>ns</i>
<i>Absorption</i>	<i>Vigour</i>	-.02	-.02	.08	-.20	<i>ns</i>
Community	Values	.34	.28	.07	3.84	***
<i>Control</i>	<i>Community</i>	.17	.20	.11	1.88	<i>ns</i>
Control	Fairness	.24	.24	.07	3.22	.001
Control	Reward	.26	.27	.11	2.56	.010
Control	Workload	.37	.30	.08	3.89	***
Dedication	Absorption	.25	.27	.10	2.66	.008
Dedication	Disengagement	-.24	-.13	.05	-2.62	.009
<i>Dedication</i>	<i>Vigour</i>	.05	.04	.09	.44	<i>ns</i>
Exhaustion	Disengagement	.20	.20	.09	2.22	.027
Fairness	Values	.43	.42	.09	4.49	***
<i>Reward</i>	<i>Values</i>	.08	.07	.08	.87	<i>ns</i>
<i>Values</i>	<i>Absorption</i>	-.13	-.10	.08	-1.37	<i>ns</i>
<i>Values</i>	<i>Dedication</i>	.05	.04	.08	.49	<i>ns</i>
<i>Values</i>	<i>Disengagement</i>	-.05	-.02	.04	-.47	<i>ns</i>
<i>Values</i>	<i>Exhaustion</i>	-.03	-.01	.04	-.35	<i>ns</i>
<i>Values</i>	<i>Vigour</i>	-.03	-.02	.06	-.28	<i>ns</i>
<i>Vigour</i>	<i>Exhaustion</i>	-.11	-.08	.06	-1.23	<i>ns</i>
Workload	Exhaustion	-.37	-.19	.05	-3.89	***
Additional pathways						
Community	Fairness	.31	.25	.07	3.61	***
Reward	Community	.47	.53	.10	5.20	***
Reward	Disengagement	-.32	-.12	.04	-3.04	.002
Reward	Fairness	.39	.36	.08	4.60	***
Workload	Absorption	-.24	-.23	.09	-2.53	.011

Note 1. *** $p < .001$

Note 2. β = standardised estimates, beta = un-standardised estimates, S.E. = Standard error.

Table D.7. Regression weights, Standard Errors, Critical Ratios and probabilities of pathways in the severe burnout group (NC5, n=79) (*non significant pathways in italics*).

<i>From</i>	<i>To</i>	β	<i>beta</i>	<i>S.E.</i>	<i>t</i>	<i>p</i>
<i>Absorption</i>	<i>Exhaustion</i>	-.10	-.07	.07	-.90	<i>ns</i>
<i>Absorption</i>	<i>Vigour</i>	.11	.10	.09	1.10	<i>ns</i>
<i>Community</i>	<i>Values</i>	-.14	-.09	.07	-1.26	<i>ns</i>
Control	Community	.24	.23	.10	2.39	.017
Control	Fairness	.38	.27	.06	4.35	***
Control	Reward	.31	.27	.09	2.88	.004
Control	Workload	.27	.23	.09	2.51	.012
Dedication	Absorption	.22	.19	.08	2.33	<i>ns</i>
Dedication	Disengagement	-.19	-.08	.04	-2.10	.036
Dedication	Vigour	.27	.19	.08	2.55	.011
Exhaustion	Disengagement	.25	.17	.07	2.60	.009
Fairness	Values	.35	.32	.11	2.97	.003
<i>Values</i>	<i>Absorption</i>	-.11	-.12	.11	-1.11	<i>ns</i>
Values	Dedication	.21	.28	.14	1.96	.050
Values	Disengagement	-.31	-.16	.05	-3.15	.002
Values	Exhaustion	-.19	-.14	.07	-2.03	.042
<i>Values</i>	<i>Vigour</i>	-.02	-.02	.11	-.13	<i>ns</i>
<i>Vigour</i>	<i>Exhaustion</i>	-.17	-.14	.07	-1.88	<i>ns</i>
Workload	Exhaustion	-.54	-.31	.06	-5.05	***
Additional pathways						
Community	Fairness	.18	.14	.07	1.99	.048
Control	Values	.32	.21	.07	2.82	.005
Control	Vigour	.38	.23	.07	3.26	.001
Reward	Fairness	.43	.36	.08	4.68	***
Reward	Community	.42	.46	.11	4.11	***
Reward	Disengagement	-.21	-.08	.04	-2.28	.023
Workload	Absorption	-.52	-.43	.08	-5.46	***
Workload	Fairness	-.26	-.22	.07	-3.14	.002
Workload	Reward	.22	.22	.11	2.07	.039
Workload	Values	.22	.17	.07	2.25	.025

Note 1. *** $p < .001$ Note 2. β = standardised estimates, beta = un-standardised estimates, S.E. = Standard error.

Table D.8. Correlation Table with recalibrated variables.

	Min	Max	M	SD	1	2	3	4	5	6	7	8	9	10	11
1 <i>Exhaustion</i>	.85	2.84	2.00	.41	-										
2 <i>Disengagement</i>	1.00	4.00	2.33	.52	.48**	-									
3 <i>Vigour</i>	.00	5.59	2.96	.96	-.49**	-.64**	-								
4 <i>Dedication</i>	.00	6.00	3.84	1.18	-.31**	-.75**	.68**	-							
5 <i>Absorption</i>	.80	6.00	3.76	.94	.04(ns)	-.50**	.45**	.63**	-						
6 <i>Control</i>	1.00	5.00	3.76	.86	-.30**	-.44**	.41**	.38**	.18**	-					
7 <i>Workload</i>	.94	4.44	2.36	.92	-.54**	-.21**	.23**	.07(ns)	-.29**	.22**	-				
8 <i>Reward</i>	1.00	5.00	3.15	.92	-.46**	-.54**	.42**	.44**	.15**	.46**	.30**	-			
9 <i>Community</i>	1.00	5.00	3.54	.86	-.37**	-.46**	.36**	.36**	.17**	.37**	.14**	.60**	-		
10 <i>Fairness</i>	1.00	5.00	2.91	1.02	-.42**	-.49**	.38**	.38**	.18**	.42**	.24**	.67**	.59**	-	
11 <i>Values</i>	1.00	5.00	3.36	.91	-.40**	-.59**	.45**	.51**	.32**	.47**	.18**	.60**	.62**	.66**	-
12 <i>CJMT</i>	1.00	5.00	3.06	1.09	-.36**	-.51**	.37**	.42**	.24**	.38**	.15**	.59**	.56**	.73**	.75**

** Correlation is significant at the 0.01 level (2-tailed).

Appendix F: Respondents' expectations of their work

Respondents were invited to provide information as to three expectations they had of a job. Responses to this section of the survey were qualitative as the researcher wished to establish a sense of participants' own expectations within the work environment. When these responses were analysed it was thought that they fitted within the parameters of the AWS, with some overflow into expectations of management. Information on the responses as coded is provided in the Table. Sixty six people did not respond to this item, 34 of these were from the Teachers' survey and 36 were from the Online survey. Most responses took the form of a three word answer, for example, "equality, resources and friendships" seen by the researcher and an independent coder as aspects of fairness, control and community. However other respondents wrote three separate sentence answers that often spanned all six areas of worklife or multiple aspects of one area of worklife. When multiple aspects of one area of worklife were covered, first one mentioned by a respondent was recorded in SPSS. A breakdown on these responses can be found in Table E.

Table E. Coded responses from survey respondents on the question regarding their expectations of a job

Expectations of Workload (number of responses = 274)		
	Frequency	Percent
Time	75	27.4
Challenge	61	22.3
Professional Development	56	20.4
Variety/Interest/Enjoy job	49	17.9
Accomplishment/Career path/ Responsibility	33	12.0
Total	274	100.0
Expectations of Control (number of responses = 100)		
	Frequency	Percent
Resources (general)	65	65.0
Resources (personnel)	8	8.0
Autonomy	27	27.0
Total	100	100.0
Expectations of Fairness (number of responses = 161)		
	Frequency	Percent
Respect	97	60.2
Consistent and equitable rules	42	26.1
Clear communication	14	8.7
Clear structure	6	3.7
Fair distribution of work	2	1.2
Total	161	100.0

Table E (continued)

Expectation of Reward (number of responses = 212)		
	Frequency	Percent
Recognition	80	37.7
Appreciation	46	21.7
Acknowledgement	8	3.8
Reward (gen)	13	6.1
Remuneration	53	25.0
Personal Growth	12	5.7
Total	212	100.0
Expectation of Community (number of responses = 231)		
	Frequency	Percent
Collaboration (e.g. feedback)	55	23.8
Support	127	55.0
Fun, Enjoyment of Collegiality	7	3.0
Positive Relationships	42	18.2
Total	231	100.0
Expectation of Values (number of responses = 136)		
	Frequency	Percent
Meaningful work	34	25.0
Fulfillment/Job Satisfaction	81	59.6
Common Goals	10	7.4
Common Values	11	8.1
Total	136	100.0
Direct Expectations of Management (number of responses = 154)		
	Frequency	Percent
Integrity (management support)	128	83.1
Benevolence (approachable)	11	7.1
Benevolence (listening)	7	4.5
Ability (leadership)	8	5.2
Total	154	100.0