Work engagement, burnout and related constructs as predictors of turnover intentions

Authors:
Janine du Plooy[1]
Gert Roodt[1]

Affiliations:
[1]Department of Industrial Psychology and People Management, University of Johannesburg, South Africa

Correspondence to:
Gert Roodt

email:
groodt@uj.ac.za

Postal address:
Department of Industrial Psychology and People Management, University of Johannesburg, PO Box 524, Auckland Park 2006, South Africa

ABSTRACT

Orientation: The focus of the study was to investigate the predictive relationship between the work engagement-burnout continuum and turnover intentions.

Research purpose: The main purpose of the study was to determine whether work engagement, burnout, organisational citizenship behaviour (OCB) and work alienation are predictors of turnover intentions.

Motivation for the study: Organisations operating within the 21st century face significant challenges in the management of talent and human capital. One in particular is voluntary employee turnover and the lack of appropriate business models to track this process.

Research design, approach and method: A secondary data analysis (SDA) was performed in a quantitative research tradition on the cross-sectional survey data collected from a large South African Information and Communication Technologies (ICT) sector company (n = 2429).

Main findings: The results of the study confirmed the predictive model (work engagement, burnout, OCB and work alienation) of turnover intention. Specifically, work engagement and OCBs were significantly negatively related to turnover intention; whilst burnout and work alienation were significantly positively related to turnover intention. Several third-variable relationships, such as biographic and demographic variables, indicated statistical significance.

Practical/managerial implications: Practical implications of the study could impact on human resource (HR) value-chain activities in the form of evidence-based and improved recruitment and selection procedures, employee retention strategies and training and development interventions. Issues concerning talent management could also be addressed.

Contribution/value-add: The study described in this article took Industrial/Organisational (I/O) psychological concepts and linked them in unique combinations to establish better predictive validity of a new turnover intentions model.

INTRODUCTION

Studies that report results on reasons why employees choose to leave or stay with a particular organisation (Dreher & Dougherty, 1980; Griffeth, Hom, & Gaertner, 2000; Kotzé & Roodt, 2005; Lee, Mitchell, Holtom, McDaniel, & Hill, 1999; Roodt & Bothma, 1997) are gaining importance and most of them focus on a set of negative consequences that are associated with employee turnover (Bluedorn, 1982; Mobley, 1982). As a result, employee turnover and its associated expenses for organisations are a key challenge (Bluedorn, 1982).

The study contributes theoretically to the body of knowledge on turnover and possible interventions to deter employee turnover (retention strategies). Altogether, the management of employee turnover statistics and its associated costs could be improved with an increased understanding of the turnover process.

The work engagement-burnout continuum has recently started receiving a lot of research attention (Maslach, Schaufeli, & Leiter, 2001; Schaufeli & Bakker, 2003; Schutte, Toppinen, Kalimo, & Schaufeli, 2000) that has delivered contradicting results. One viewpoint constitutes the core constructs of work engagement and burnout as opposite poles of two continua (vigour-exhaustion and dedication-cynicism) labelled *energy* and *identification* respectively (González-Romá, Schaufeli, Bakker, & Lloret, 2006). Work engagement is 'characterized by a high level of energy and strong identification with one's work', whilst burnout is 'characterized by the opposite: a low level of energy combined with poor identification with one's work' (Schaufeli & Bakker, 2003, p. 5; Bakker, Schaufeli, Leiter, & Taris, 2008). Therefore, work engagement and burnout could be recognised as inseparable and co-dependent constructs that share more or less 10–25% of their variance and are moderately negatively related (Schaufeli & Bakker, 2004; Schaufeli, Salanova, González-Romá, & Bakker, 2002). The link between work engagement, burnout and turnover intentions is empirically well established (Schaufeli & Bakker, 2004).

The second viewpoint constitutes work engagement and burnout as strongly related, but fundamentally different in their separation in the work experience and are, therefore, not opposite poles of a continuum (Denton, Newton, & Bower, 2008; Huhtala & Parzefall, 2007; Rothmann & Joubert, 2007; Schaufeli & Bakker, 2004; Schaufeli et al., 2002). *Work engagement* is defined as a 'positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption' (Schaufeli & Bakker, 2004, p.

295). *Burnout*, on the other hand, is defined by Maslach and Jackson (1981, pp. 99) as a 'syndrome of emotional exhaustion and cynicism that occurs frequently amongst individuals who do 'people-work' of some kind'.

However, Industrial/Organisational (I/O) psychological literature fails to provide any substantial links between the combination of work engagement, burnout, organisational citizenship behaviour (OCB), work alienation and turnover intentions. This indicates an absence of research in this regard. *Turnover intention* is defined as 'a conscious and deliberate willfulness to leave the organization' (Tett & Meyer, 1993, p. 262). Work behaviours and attitudes such as OCB and work alienation can be theoretically linked to withdrawal behaviours and the turnover process (cf. Ravichandran & Gilmore, 2007; Shepard, 1972 respectively) and the position work engagement and burnout hold in the sequence leading up to turnover could help define the turnover process more comprehensively.

OCB is also known as extra-role performance (Organ, & Paine, 1999; Podsakoff, MacKenzie, & Bommer, 1996) and is defined as 'individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization' (Organ 1988, p. 4). Furthermore, *work alienation* is defined as a 'state of psychological separation from work insofar as work is perceived to lack the potentiality for satisfying one's salient needs and expectations' (Kanungo, 1979, p. 131). A more complete understanding of turnover intentions should secure solutions to more effectively manage employee turnover.

The research question can therefore be formulated as: Are the work engagement, burnout, OCB and work alienation constructs significantly related to (and predictors of) turnover intentions? Consequently, the main objective of the research is to determine whether different constructs such as work engagement, burnout, OCB and work alienation are related to (and predictors of) turnover intentions.

A REVIEW OF THE LITERATURE

This study conceptualised a continuum with poles of extremity that is work engagement and burnout and further considered other constructs relating to organisational behaviours and attitudes and their respective relationships to turnover intentions. The mentioned constructs were conceptually grouped together to create a more holistic model that relates to turnover intentions. The research model is embedded in an existing theoretical framework called the Job Demands-Resources (JD-R) model and helps to map these organisational attitudes and their relationships with turnover intentions. A brief discussion on the interrelatedness of the JD-R model will now follow, pursued by an in depth discussion on work engagement and burnout, an introduction to the construct turnover intention and relevant findings obtained surrounding other related constructs of work engagement and burnout.

The JD-R model will be briefly discussed here to create a context for understanding work engagement and burnout. The JD-R model was extended by including work engagement, health impairment and organisational withdrawal in the Comprehensive Burnout and Engagement (COBE) model (Jackson, Rothmann, & van der Vijver, 2006; Schaufeli & Bakker, 2004). The COBE model can be applied in explaining the consequences of work engagement and burnout in relation to turnover intentions (Bakker, Demerouti, & Schaufeli, 2003; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004).

The broad JD-R model suggests that every occupation has exclusive job characteristics that can be divided into two categories, that is, job demands and job resources (Demerouti

et al., 2001):

> *Job demands refer to those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs (e.g., exhaustion).*
>
> (Demerouti *et al.*, 2001, p. 501)

Exhaustion may then snowball into job stress (Demerouti *et al.*, 2001) and negative psychological states such as burnout (Schaufeli & Bakker, 2004). Schaufeli and Buunk (2003) went a step further and described burnout as a type of job stress that influences the work-related emotional well-being of employees.

Job resources, on the other hand,

> *refer to those physical, psychological, social, or organizational aspects of the job that may do any of the following: (a) be functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; and (c) stimulate personal growth and development.*
>
> (Demerouti *et al.*, 2001, p. 501)

External resources are divided into three levels, namely organisational (career opportunities), social (support from colleagues) and task (performance feedback) (Demerouti *et al.*, 2001). In short, job engagement was found to mediate the relationship between available job resources and turnover intentions (Schaufeli & Bakker, 2004). Demerouti *et al.* (2001) further suggest that a shortage of available resources will affect the degree of job demands fulfilment, which will facilitate withdrawal behaviour. On a long-term scale, withdrawal behaviours can lead to work disengagement (Demerouti *et al.*, 2001).

The JD-R model depicts job resources as the sole predictor of work engagement (Bakker *et al.*, 2003). Specific job resources, such as social support by colleagues, supervisory coaching, performance feedback and time control have a significant inverse relation to turnover intentions and organisational involvement (commitment) mediates this causal relationship (Bakker *et al.*, 2003). According to the JD-R model's effort to explain burnout, job demands predict feelings of exhaustion and lacking job resources predict work disengagement (Demerouti *et al.*, 2001). Job demands, such as work overload, changes in the task and emotional demands were found to predict exhaustion (Bakker *et al.*, 2003). In this regard, burnout is researched by focusing on exhaustion which has been shown to be the main indicator of the burnout syndrome (Lee & Ashforth, 1993; Maslach & Jackson, 1981). Against this background, the constructs work engagement and burnout will be discussed in more depth.

It should be noted that various researchers have argued for the significance in differentiating between the types of engagement, because they differ in their respective antecedents and consequences (Saks, 2006; Simpson, 2008). According to reviewed literature, six types of work-related engagement were identified:

- job engagement
- organisation engagement (Saks, 2006)
- personal engagement,
- burnout/engagement
- work engagement
- employee engagement.

(Simpson, 2008)

The focus of the current study has been specifically maintained on *work engagement* and its consequential relations.

It has been reported that employee engagement is likely to be connected to employees' attitudes, intentions and behaviours (Saks, 2006) and that work engagement shows potential to constructively contribute to the employing organisations of the engaged employees (Koyuncu, Burke, & Fiksenbaum, 2006). Thus, it comes as no surprise that work engagement has been

linked to a decline in intentions to quit (Koyuncu *et al.*, 2006; Saks, 2006; Schaufeli & Bakker, 2004). The JD-R model depicts job resources as the sole predictor of work engagement and engagement as the *mediator*[1] between job resources and turnover intentions (Bakker *et al.*, 2003) and, finally, work engagement is shown to be directly related to turnover intentions (Schaufeli & Bakker, 2004). The findings of Hakanen, Bakker and Schaufeli (2006) suggest that a lack of job resources to meet job demands may be linked to burnout, which may lead to decreased work engagement. According to the literature (Schaufeli & Bakker, 2004), decreased work engagement could in turn lead to increased turnover intentions.

The three subcomponents of *burnout* are emotional exhaustion, depersonalisation and diminished personal accomplishment (Maslach & Jackson, 1981). Burnout has been found to contribute to the intent of employees to leave their organisations and it has been well documented by two Australian studies (Lingard, 2003; Sims, 2007); the latter study suggested cynicism and emotional exhaustion as significant predictors of turnover intentions (Sims, 2007). Rothmann and Joubert (2007) reported similar findings in a South African study and Knudsen, Ducharme and Roman (2006) confirmed a positive link between emotional exhaustion and intentions to quit in a study conducted on a sample of therapeutic counsellors.

These findings are in accordance with those of the JD-R model (Jackson *et al.*, 2006), with the exception of the latter presenting a weaker burnout-turnover intention relationship (Schaufeli & Bakker, 2004). Research findings of a predictive relationship between burnout and turnover intentions are not plentiful and literature regarding the strength of the relationship proved to be inconsistent; nevertheless, a clear linkage does seem to exist. Therefore, it seems that when experiencing symptoms of burnout, experiences of turnover intentions will not be far behind. In the light of this, the finding that Generation X nurses experience more symptoms of burnout when compared to Baby Boomer generation nurses and that this contributes to high turnover intentions (Leiter, Jackson, & Shaughnessy, 2009) proves to be significant. Furthermore, burnout has also been found to be the dominant predictor of depression and depression has been proven to predict turnover intentions (Anderson, 2008; Baba, Galperin, & Lituchy, 1999).

Two respective studies found burnout to be a partial mediator between turnover intention and (1) role stressors and (2) perceived organisational politics (Fogarty, Singh, Rhoads, & Moore, 2000; Huang, Chaung, & Lin, 2003). Obtained research showed no indications of findings on burnout acting as mediator in a work engagement-turnover intention relationship. These findings guided the authors to the first research hypothesis to be tested.

Hypothesis 1: The relationship between work engagement and turnover intentions is mediated by burnout.

The *intent to leave* the organisation has also been described as the final step in a series of withdrawal cognitions leading to actual turnover (Tett & Meyer, 1993). In a robust study which set out to differentiate the predictive strengths of several turnover antecedents, Griffeth *et al.* (2000) confirmed that the intention to leave was one of the greatest predictors of turnover. Predecessors in the withdrawal process were found to be predictors of voluntary employee turnover; these are job satisfaction, organisational commitment, job search behaviours, withdrawal cognitions and turnover intentions (Griffeth *et al.*, 2000).

A number of studies (Coyne & Ong, 2007; Hemdi & Nasurdin, 2008; Zimmerman, 2008) have been concluded about the

1. A mediator is defined as a variable that explains the relation between a predictor variable and an outcome or predicted variable (Baron & Kenny, 1986).

organisational attitude labelled turnover intention and some interesting results were obtained. Social exchange relationships, which are partially predicted by organisational justice, were proven to have a significant predicting relationship with turnover intention (Tekleab, Takeuchi, & Taylor, 2005). Tekleab *et al.* (2005) further noted that the perception of contract violation indirectly determines employee turnover intentions. It was also found that perceived inequity in employment relationships led to turnover intentions and that poor organisational commitment mediated this outcome (Geurts, Schaufeli, & Rutte, 1999). A summary of the reviewed research surrounding the relationships between four constructs, that is, work engagement, burnout, OCB and work alienation, which affect turnover intention, will now follow.

In burnout-OCB literature, Bakker, Demerouti and Verbreke (2004) built upon Demerouti *et al.*'s (2001) JD-R model of burnout and established the existence of a strong and negative relationship between burnout and extra-role performance (OCB). In another study, emotional exhaustion was shown to share a positive predictive relationship with turnover intentions and a negative predictive relationship with organisational citizenship behaviour beneficial to the organisation (OCBO) and organisational citizenship behaviour beneficial to the supervisor (OCBS) (Cropanzano, Rupp, & Byrne, 2003). To summarise, it seems that an overall negative relationship exists between burnout and citizenship-related behaviours.

Furthermore, within burnout-work alienation literature the subcomponent of burnout, namely depersonalisation, could be described in a broader sense as a withdrawal behaviour which could result in work attitudes such as alienation, disengagement and/or cynicism (Cherniss, 1980). It seems that a link exists between groups with high levels of depersonalisation and groups experiencing high levels of alienation and this in turn suggests a similar link between burnout and alienation. A critical literature review conducted on burnout and alienation even went as far as proposing that burnout should be redefined as a form of alienation (Karger, 1981).

After consulting the available research on relationships between burnout, alienation and OCB exclusively, the lack of clear-cut findings proved to be undeniable. The relationships between these three constructs are built upon incompatible foundational concepts and remain formless, specifically within the I/O psychological domain. Nevertheless, these literature findings posit a relationship between groups with high levels of burnout, groups with high levels of alienation and groups low in OCBs, although the combination of these constructs has not yet been studied. This guided the authors to the second research hypothesis to be tested.

Hypothesis 2: The group experiencing high levels of burnout will exhibit high levels of alienation, but will be low in OCBs, as opposed to the low burnout group.

Generally, five **OCB** dimensions are distinguishable:

- altruism
- conscientiousness (Smith, Organ, & Near, 1983)
- courtesy
- sportsmanship
- civic virtue (Organ, 1988).

Several citizenship-like behaviours, broadly defined as 'performance that goes beyond "in-role" requirements' (cf. Moliner, Martínez-Tur, Ramos, Peiro, & Cropanzano, 2008, p. 329), exist in the literature. Five of these well-known concepts are OCBs, extra-role behaviours, pro-social behaviours, organisational spontaneity and contextual performance (Posakoff, MacKenzie, Paine, & Bachrach, 2000). A review of OCB literature from 1983 up to 1999 showed that approximately 30 variations of OCBs exist (Podsakoff *et al.*, 2000). These variations have been clustered into seven categories, that is:

- helping behaviour
- sportsmanship
- organisational loyalty
- organisational compliance
- individual initiative
- civic virtue
- self development.

(Podsakoff *et al.*, 2000)

Within this study, focus has been maintained on the category, namely helping behaviour. Podsakoff *et al.* (2000, p. 516) have defined helping behaviour as 'voluntarily helping others with, or preventing the occurrence of, work-related problems'. Altruism has been theoretically linked to helping behaviours (Podsakoff *et al.*, 2000). Contextual performance has been theoretically linked to OCBs and by means of a specific type of contextual performance (i.e. to volunteer for activities which fall outside formal job expectations; Organ, 1997), has been conceptually linked to helping behaviours.

OCB was found to be both significantly and negatively related to turnover intentions (Coyne & Ong, 2007; Wegge, van Dick, Fisher, Wecking, & Moltzen, 2006). Results from a study on hotel employees put forward that higher OCB intentions and lower turnover intentions were shaped when employees perceive organisational justice and fair compensation (Hemdi & Nasurdin, 2008). Altruism, on the other hand, did not relate significantly to turnover intentions. A possible reason for this may be that altruism is directed towards interpersonally-based citizenship behaviour, rather than organisation-based. This means that withdrawal behaviours would, in the case of altruism, be directed to colleagues and clients rather than the organisation directly (Coyne & Ong, 2007).

The availability of job resources encourages employees to become engaged in their work, which in turn fosters OCBs (Bakker *et al.*, 2004; Salanova, Bakker, & Llorens, 2006). OCBs result in employees exerting extra-role performance behaviours (Bakker & Demerouti, 2007) such as taking personal initiative (Fay & Sonnentag, 2002) and pursuing learning goals (Sonnentag, 2003). Moliner *et al.* (2008) also found a positive relationship between work engagement and extra-role customer service. It is apparent that the available research findings illustrate a positive correlation between work engagement and OCBs.

Bakker and Demerouti (2007) reported that employees who have the benefit of strong job resources tend to be more willing to further invest in increasing these resources. Work engagement is considered a positive resource, which means that it could have a spiral effect on positive resources and health outcomes (Mauno, Kinnunen, & Ruokolainen, 2007). The positive spiral effect work engagement could have on resource gain outcomes is paralleled to an array of positive organisational scholarship findings (Fredrickson, 2003) and attests to the Conservation of Resources (COR) theory (Hobfoll, 2001). The broaden-and-build theory of positive emotions illuminates ways that positive emotions might broaden a person's thought capacity and develop long-term personal resources (Fredrickson, 2001). The theory further describes how the experience of positive emotions could 'fuel upward spirals toward optimal individual and organizational functioning' (Fredrickson, 2003, p. 163).

From the results of a study conducted on organisational anomie it could be inferred that groups with high levels of work-related alienation are more strongly linked to a negative attitude-OCB relationship (de Lara & Rodríquez, 2007). Anomie is a sociological concept used to describe the social conditions of alienation (cf. Roodt, 2004a), whereas organisational anomie is very closely linked to the concept of work-related alienation (de Lara & Rodríquez, 2007). Joubert, Crafford and Schepers (2004) also suggested a negative relationship and stated that employees exhibiting OCBs might also experience lesser work alienation.

In summary, the theoretical contributions of the positive organisational scholarship domain offer valuable insight into the expected outcomes of groups with high levels of both work engagement and OCBs. One anticipated outcome of groups with high levels of work engagement and OCBs would be diminished work alienation. This anticipation seems to be aligned with literature on the OCB-alienation relationship. However, the need to clarify the relationship between work engagement, OCB (cf. Bakker *et al.*, 2008) and work alienation remains greatly relevant.

Another phenomenon that needs to be further examined is the work engagement-burnout continuum. The findings of a study linking Type A behaviours with burnout and work engagement (Hallberg, Johansson, & Schaufeli, 2007), implied that work engagement and burnout may be polar opposites. Type A behaviour is defined as a pattern of behaviours that exhibit competitiveness, impatience, angry outbursts, constantly feeling pressured for time and being very energetic (Barlow & Durand, 2005). The study reported a positive link between the Type A behaviour of acting irritable or impatient and burnout, whereas work engagement was negatively related to those behaviours (Hallberg *et al.*, 2007). A similar line of thought will be followed when examining the work engagement – burnout relationship.

Hypothesis 3: The group with high levels of work engagement will also display high levels of OCBs, but will display low levels of alienation, as opposed to the low work engagement group.

According to Roodt (2004a), sociological literature has delivered most findings on alienation; however, the focus of *work alienation* follows the I/O psychological school of thought. It has been hypothesised by Kanungo (1979) that a link exists between employees with low job involvement and high levels of alienation to be more probable to leave the organisation or to withdraw effort from it.

In other social science literature, an anthropological study on alienation as a function of cultural diversity in a South African company followed an ethnographic research design and found that alienated workers, as opposed to engaged workers, minimised interaction with managers or colleagues. This decline in interaction gave rise to distancing and distrust, which led to increased alienation (Herselman, 2004). The literature review conducted on the relationship between work-related alienation and turnover intentions indicated an absence of research. To investigate this hypothesised relationship could thus add to the body of knowledge on turnover.

The literature findings of the section pertaining to the relationships shared with turnover intentions guided the authors to the fourth research hypothesis to be tested.
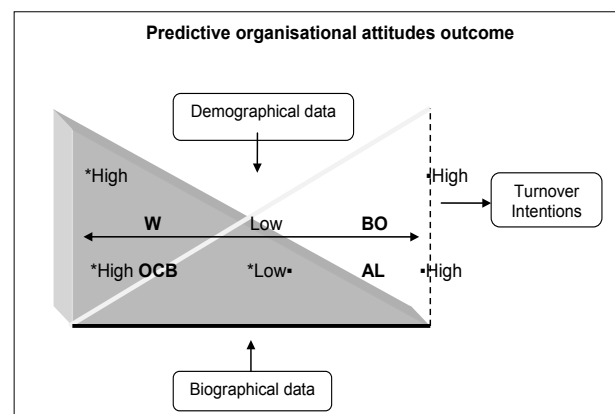

FIGURE 1
Research model of the predictive relationships with turnover intentions

Hypothesis 4: Work engagement and OCBs will have a negative, predictive relationship with turnover intentions; whilst burnout and alienation will have a positive, predictive relationship with turnover intentions.

These hypotheses can be graphically depicted as follows:

The research model depicts that work engagement (WE) and burnout (BO) lie on a continuum, with organisational citizenship behaviour (OCB) related to the group high on the WE scale. In contrast, work alienation (AL) will again be related to the group with high levels of BO. The model further depicts hypothesis 2 by linking three constructs (denoted with three *squares*) and creating a group with high BO and AL, but with low levels of OCBs. The model further depicts hypothesis 3 by linking three constructs (denoted with three *stars*) and creating a group with high WE and OCBs, but low levels of AL. These four constructs act as predictors of turnover intentions (TI) (hypothesis 4) and both biographic and demographic variables may moderate this relationship.

RESEARCH DESIGN

Research approach

The study used a post-positivist epistemology with an analytical mode of science (Pietersen, 1989; Schurink, 1998). The study is empirical in nature and a secondary data analysis (SDA) was performed on a subsection of the dataset of Bothma and de Braine's research in progress. Bothma and de Braine's research project is a cross-sectional field survey study conducted as part of a larger Work Identity research project jointly conducted by the University of Johannesburg and Vrije University, Amsterdam. The data analyses in the study followed a correlational approach with the purpose of reaching the general and specific research objectives in an *ex post facto* mode.

Research method

Research respondents

A heterogeneous work force ($N = 23\ 134$) of a large South African information and communication technologies (ICT) sector company, consisting of operational and specialist employees up to middle management, represented the unit of analysis for this study. A census approach was followed to ensure complete enumeration of the organisation. The respondent sample ($n = 2\ 429$) yielded a response rate of 11%.

In Table 1 the frequency and percentages of the respondents in relation to their biographic and demographic characteristics are presented. As indicated in the last column of Table 1, the majority of the respondents were male (63.2%), White (44.1%) and either between the ages of 30–39 years (39.5%) or 40–49 years (36.1%). Most respondents were married and cohabiting (69.1%) and indicated that their highest academic qualifications were matric or less (40.7%), or having obtained a national diploma or national higher diploma (26.9%). The managers and operational managers constituted 18.4% of the ICT company workforce, operational workers 54.9% and specialist workers 26.7%.

Measuring instruments

The results of six measuring instruments from Bothma and de Braine's self-developed, web-based survey application were used, all of which can be completed individually. The survey was self-administered by the respondents. The authors focused on the data collected from the following forms.

Biographical and demographical data: The data were obtained in respect of all the survey respondents through their organisational registration and a form within the survey which was devoted to related questions. Their salary reference numbers were linked to the organisational enumerations which provided the necessary biographical data (gender, race, age, marital status and highest academic qualifications) and demographical data (job levels).

Utrecht Work Engagement Scale (UWES-17): The UWES-17 was used to measure work engagement and consists of three subscales labelled vigour (VI), dedication (DE) and absorption (AB) (Schaufeli & Bakker, 2003; Schaufeli et al., 2002). The UWES was used in the majority of work engagement research studies in the literature (Bakker et al., 2008; Hakanen et al., 2006; Hakanen, Schaufeli, & Ahola, 2008; Simpson, 2008).

TABLE 1
Biographical and Demographic Characteristics of Respondents ($n = 2429$)

Variable	Category	Frequency (/)	Percentage
Gender	Male	1536	63.2
	Female	893	36.8
Race	Black	640	26.3
	White	1070	44.1
	Coloured	395	16.3
	Asian or Indian	324	13.3
Age in years	19–29	292	12.0
	30–39	960	39.5
	40–49	877	36.1
	50+	300	12.4
Marital status	Single	511	21.0
	Married and cohabiting	1678	69.1
	Divorced or separated or widowed	240	9.90
Highest academic qualification	Matriculated or less	988	40.7
	Post-school certificate or diploma	479	19.7
	National diploma or national higher diploma	653	26.9
	Bachelor's degree or equivalent or more	309	12.7
Job level	Managers	446	18.4
	Operational workers	1334	54.9
	Specialist workers	649	26.7

The 17-item, well-validated instrument delivered relatively consistent findings across different cultures, that is, the internal consistencies are widely held to be acceptable according to the respective international studies (Bakker *et al.*, 2008). For example, the estimated Cronbach alpha coefficients of the three subscales of a South African study were 0.78 (VI), 0.89 (DE) and 0.78 (AB) (Storm & Rothmann, 2003) and those of a Spanish study using two samples were 0.78 and 0.79 (VI), 0.84 and 0.89 (DE) and 0.73 and 0.72 (AB) respectively (Schaufeli *et al.*, 2002). The VI and AB subscales of these two examples either yielded borderline reliability coefficients or fell short of the acceptable 0.80 or greater psychometric guideline (Nunnally, 1978). A South African study on work engagement yielded a one-factor internal consistency of 0.92 (Storm & Rothmann, 2003) and a Japanese study confirmed this Cronbach alpha coefficient ($\alpha = 0.92$) (Shimazu, Schaufeli, Kosugi, Suzuki, Nashiwa, Kato, Sakamoto, Irimajiri, Amano, Hirohata, Goto, & Kitaoka-Higashiguchi, 2008).

A wide array of translated test-forms is available (cf. Schaufeli, 2009; Schaufeli & Bakker, 2003) which show that the UWES is an accessible and trusted instrument. In this study, the UWES items were scored on a 7-point Likert (frequency rating) scale ranging from 0 ('never') to 6 ('everyday').

The VI subscale has six items, for example, 'At my work, I feel bursting with energy'. The DE subscale has five items, for example, 'I find the work that I do full of meaning and purpose'. The *AB* subscale has six items, for example, 'I get carried away when I'm working'. The rationale of the instrument is that high levels of VI and DE suggest work engagement (Schaufeli & Bakker, 2003; Schaufeli *et al.*, 2002).

Maslach Burnout Inventory-Human Services Survey (MBI-HSS-20): The MBI-HSS-20 was used to measure burnout and consists of three subscales labelled emotional exhaustion (EE), depersonalisation (DP) and diminished personal accomplishment (PA) (Maslach & Jackson, 1981; Maslach, Jackson, & Leiter, 1997; Vanheule, Rosseel, & Vlerick, 2007). Maslach and Jackson (1981) conducted a series of psychometric analyses on the MBI, which confirmed it as a valid and reliable measuring instrument. The 25-item MBI's internal consistency was estimated by means of Cronbach alpha and yielded a reliability coefficient of 0.83 (in respect of frequency) and 0.84 (intensity) (Maslach & Jackson, 1981).

The MBI-HSS-20 omitted two items from the original MBI-HSS (Maslach & Jackson, 1981), due to their lack of factorial validity (Byrne, 1993; Schaufeli & Van Dierendonck, 1993). A South African study for SAPS members established the construct validity of the adapted and translated versions of the MBI-GS for English, Afrikaans and Setswana speaking groups (Marais, Mostert, & Rothmann, 2009). For the stated reasons and due to the finding that the MBI is the most often used for measuring burnout (over 90% of journal articles and dissertations used the MBI) (Schaufeli & Enzmann, 1998), this 20-item instrument was used. Similar to the UWES, the items were scored on a 7-point Likert (frequency rating) scale ranging from 0 ('never') to 6 ('everyday').

The *EE* subscale has eight items, for example 'I feel emotionally drained from my work'. The *DP* subscale has five items, for example, 'I don't really care what happens to some recipients'. The *diminished PA* subscale has seven items, for example, 'In my work, I deal with emotional problems very calmly'. A Dutch study yielded the following Cronbach alpha coefficients for the three subscales: 0.80 (EE), 0.64 (DP) and 0.74 (PA) (Kop, Euwema, & Schaufeli, 1999); inconclusive results were obtained regarding the reliability of the DP and diminished PA subscales (cf. Cramer, 2003; cf. Nunnally, 1978). However, the psychometric properties of most of the MBI studies on human service professions, generally documented Cronbach alpha coefficients of 0.70 and higher (Schaufeli, Bakker, Hoogduin, Schaap, & Kladler, 2001). The rationale of the instrument is that

high levels of EE and DP and low levels of PA suggest burnout (Maslach & Jackson, 1981).

Helping behaviour questions: The helping behaviour questions were used to measure organisational citizenship behaviour. The questions consist of five items of the Helping Behaviour Scale (Van Dyne & LePine, 1998) and four items focused on the Altruism dimension of the Citizenship Behaviour Scale (Smith *et al.*, 1983). The measurement of helping behaviour questions was done by means of nine items, for example, 'How often do you assist others with their work for the benefit of your work group?' All items were scored on a 7-point Likert (frequency rating) scale ranging from 1 ('never') to 7 ('always').

Alienation scale: The alienation scale was used to measure work alienation and consists of two subscales (Korman, Wittig-berman, & Lang, 1981) labelled Personal Alienation (five items) and Social Alienation (three items). The scale used in this study was tailored by combining two separate measures; that is, the 18-item Alienation measure of Korman *et al.* (1981) and the 24-item Alienation scale of Dean (1961). The 18-item Alienation measure yielded an acceptable reliability coefficient of 0.83 (Banai, Reisel, & Probst, 2004) and the 24-item Alienation measure yielded a borderline reliability coefficient of 0.78 (Dean, 1961). The alienation scale has eight items, for example, 'To what extent do you feel that your daily activities don't reflect your real interests and values?'. This response scale was scored on a 7-point Likert scale varying between poles of intensity. The response scale ranged, for example, from 1 ('very much so') to 7 ('not at all'). However, within this study the focus was exclusively on the subscale Personal Alienation due to its superior relevance to work alienation.

Turnover Intentions Questionnaire: The Turnover Intentions Questionnaire developed by Roodt (2004b) was used to measure employee intentions of either staying with or leaving an organisation. Two earlier studies (Jacobs, 2005; Martin & Roodt, 2007) proved Roodt's (2004b) questionnaire to be both reliable ($\alpha = 0.913$ and $\alpha = 0.895$ respectively) and valid. The six most reliable items were used in the construction of the distributed survey, for example, 'How often have you considered leaving your job?'. The response scale was scored on a 7-point Likert scale varying between poles of intensity. The scale ranged, for example, from 1 ('never') to 7 ('always').

Research procedure

An invitation was sent out by means of e-mail communications to each employee within the sample to participate in the research project. The invitation also explained the purpose and significance of the study and included a certificate guaranteeing the confidentiality of the respondents. A web-link was added to each invitation, which provided the respondents with direct access to a web-based survey application. The layout of the web-based application offered versatility in the completion procedures as it enabled employees to complete the survey instruments one at a time.

The confidentiality of respondents was protected by means of complying with the company policy of using the employees' personnel numbers as identifiers, which were deleted from the database when the data was still in raw form. The responses were captured in a Structured Query Language (SQL) database that monitored the responses and restricted it to one per individual, in accordance with the personnel number. The data was immediately available and the SQL database sent out reminders to non-respondents.

Statistical analysis

The SPSS programme Version 15 (Pallant, 2007) was used for the statistical analyses that were conducted by Statkon, the statistical consultation service of the University of Johannesburg. First-

TABLE 2
Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin's Measure of Sampling Adequacy Values of All Scales

Scales	Bartlett's test of Sphericity		Kaiser-Meyer-Olkin of MSA
	χ^2	p	
Work engagement (WE)	30 846.956	0.000	0.962
Burnout (BO)	17 790.323	0.000	0.909
Organisational citizenship behaviour (OCB)	10 631.027	0.000	0.887
Work alienation (AL)	7 406.932	0.000	0.787
Turnover intventions (TI)	4 302.361	0.000	0.838

All scales are significant at the $p \leq 0.001$ level
χ^2, chi-square; MSA, Measure of Sampling Adequecy

and second-order confirmatory factor analyses were conducted to determine the factor structures of the scales. Iterative item analyses were conducted on all scales to assess their internal consistency reliabilities (Cronbach alpha coefficients). The inferential statistics performed for hypothesis testing comprised of multiple regression analyses, *ANOVAS* and independent sample *t*-tests.

RESULTS

Factor and reliability analyses

The large sample size of the study (*n* = 2429) and the acceptable Kaiser-Meyer-Olkin (KMO) of Measure of Sampling Adequacy (MSA) and Bartlett's Test of Sphericity values generated by the SPSS programme Version 15 (Pallant, 2007) established the appropriateness for factor analyses.

Results from these tests are reported as follows.

From Table 2 it is clear that the Bartlett's Test of Sphericity yielded chi-square values in respect of the scales WE, BO, OCB, AL and TI that are all statistically significant (*p* = 0.000). This indicates the suitability of the data for factor analysis. The KMO of MSA values for the five scales were all above the minimum value (0.6), which is also indicative of the factorability of the scales. A confirmatory, first-order factor analysis was conducted on scales WE, BO, OCB, AL and TI and an additional second-order factor analysis was conducted on the three subscales of WE and BO. The single factor structures of the three subscales of the UWES-17, namely VI (6 items), DE (5 items) and AB (6 items) and the three MBI-HSS-20 subscales EE (8 items), DP (5 items) and PA (7 items) were confirmed.

The principal axis factor analysis method was used, followed by a Varimax rotation for first-order factor analyses and an Oblimin rotation for second-order factor-analyses, followed by Kaiser's (1970) criterion and a scree test. All scales yielded a single factor structure where all items load onto the particular scale, which is indicative of the factorial validity of the scales. An iterative item reliability analysis was conducted on all items for each scale. Acceptable reliabilities were obtained for all scales and are presented in brackets on the diagonal of the intercorrelation matrix in Table 3. In Table 3 the means, standard deviations, reliability coefficients and Pearson correlation coefficients of the WE, BO, OCB, AL and TI scales are presented.

Not shown in Table 3 are WE's three subscales, that is, VI, DE and AB, which yielded Cronbach alpha coefficients (α) of 0.880, 0.911 and 0.859 respectively. BO's three subscales, namely EE, DP and Diminished PA yielded Cronbach alpha coefficients of 0.887, 0.701 and 0.707 respectively. AL (Personal Alienation) yielded a Cronbach alpha coefficient of 0.812. Overall the scales have acceptable reliability coefficients for proceeding with the next phase of the statistical analysis.

Mediation analysis

In Figure 2, the first hypothesis is graphically represented and predicts that the relationship between WE and TI is mediated by BO. Three issues were considered when the test for mediation was designed for this study. Firstly, the effect that correlations amongst the predictor, mediator and outcome have on the power of the test of mediation was determined (Frazier *et al.*, 2004). In the present study, the Pearson correlation coefficient (*r* = -0.518 as depicted in Table 2) established a strong, negative relationship between WE (predictor) and BO (mediator). A formula to determine the effective sample size for tests of mediation was utilised and, due to the high correlation between WE and BO, the power of the mediation test was reduced to that of a sample size of 1777.

Secondly, Frazier *et al.* (2004) explained that the power of tests of mediation is greatest when relationships of path b and path a present comparable correlation coefficients and, furthermore, when the strength of the relationship of path b exceeds the strength of the relationship of path a. In the present study, the Pearson correlation coefficient of BO (mediator) with TI (outcome) is comparatively similar, but greater than the Pearson correlation coefficient of WE (predictor) with BO (mediator) (0.564 > -0.518). Furthermore, the reliability of the measure of the mediator should be considered (Frazier *et al.*, 2004). In the current study, the reliability coefficient of the MBI-HSS-20 was estimated at 0.836, which is adequate according to Nunnally (1978).

Baron and Kenny's (1986, p. 1176) 'causal chain' method to establishing a mediation relationship through testing three multiple regressions was used. In the current study, an analysis of variance (*ANOVA*) was conducted on the four mediation relationships, which showed that the obtained multiple regressions were highly significant for all (*p* = 0.000). The multiple linear regression method was used. Firstly, the

TABLE 3
Means, standard deviations, reliability coefficients and correlation coefficients of all scales (*n* = 2429)

Scales	M	SD	WE	BO	OCB	AL	TI
Work engagement (WE)	4.502	1.238	(0.952)	-0.518†††	0.349††	-0.621†††	-0.581†††
Burnout (BO)	2.058	0.925	-	(0.836)	-0.211†	0.523†††	0.564†††
Organisational citizenship behaviour (OCB)	5.485	0.963	-	-	(0.863)	-0.131†	-0.108†
Work alienation (AL)	4.094	1.442	-	-	-	(0.812)	0.733†††
Turnover intventions (TI)	4. 02	1.357	-	-	-	-	(0.800)

M, mean; *SD*, standard deviation; α's, Cronbach's alpha coefficients, appear on the diagonal in brackets

†, Correlations ranging between $0.10 \leq r \leq 0.29$ (small effect); ††, Correlations ranging between $0.30 \leq r \leq 0.49$ (medium effect); †††, Correlations ranging between $0.50 \leq r \leq 1.0$ (large effect)

WE, work engagement; BO, burnout; OCB, organisational citizenship behaviour (OCB); AL, work alienation; TI, turnover interventions

TABLE 4
Regression Coefficients of Mediation Relationships

Unstandardised regression coefficients			
Relationships (Paths)	**B**	**Standard errors**	**p**
Path c	-0.637	0.018	0.000
Path a	-0.387	0.013	0.000
Path b	0.527	0.026	0.000
Path ċ	-0.433	0.020	0.000

All paths are significant at the *p* ≤ 0.001 level
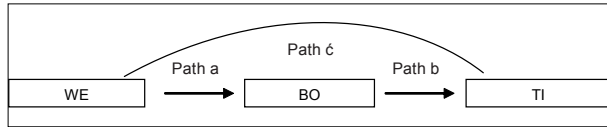
Adapted from Frazier, P.A., Tix, A.P., & Barron, K.E. (2004). Testing moderator and mediator effects in counseling psychology. *Journal of Counseling Psychology*, 51, 115–134.

FIGURE 2
Research model linking WE to TI by means of burnout.

relationship between WE (predictor) and TI (outcome) was established (path c). Secondly, the relationship between WE (predictor) and BO (mediator) was established (path a). Thirdly, the relationship between BO (mediator) and TI (outcome) was established (path b), as well as the estimated relationship between WE and TI controlling for BO (path ċ). Table 4 indicates the regression coefficients of each path.

In Table 4, each path is shown as statistically significant ($p = 0.000$). It is evident that (in absolute terms) path ċ (-0.433) is significantly smaller than path c (-0.637), which suggests a partial mediation relationship. The significance of the mediated effect was tested through computing the product of paths 'a' and 'b' (0.204) and dividing it by the standard error term (0.012) described by Baron and Kenny (1986). The standard error term used is the square root of $b^2sa^2 + a^2sb^2 + sa^2sb^2$, where *a* and *b* are unstandardised regression coefficients and *sa* and *sb* are their standard errors (Baron & Kenny, 1986; Frazier *et al.*, 2004).

The analysis yielded a *z* score of the mediated effect and this *z* score ($Z = 16.748$) confirmed the mediated effect to be highly significant ($p ≤ 0.001$). Therefore, the data supports the alternative hypothesis that the relationship between WE and TI is partially mediated by BO and rejects the null hypothesis.

The second hypothesis (graphically represented in Figure 1) predicts that the high BO groups will obtain statistically significant higher AL scores, but statistically significant lower OCB scores than low BO groups. An independent sample *t*-test was used to determine whether there are statistically significant differences in the mean scores of AL and OCB in respect of low and high BO groups and the results are shown in Table 5. Firstly, Levene's Test for Equality of Variances indicates whether the variances of the AL and OCB scores are equal for low and high BO groups. For AL ($p = 0.484$) the variances were assumed equal and for OCB ($p = 0.000$) the variances were assumed unequal.

It is clear from Table 5 that there are mean score differences between low and high BO groups in respect of the AL and OCB scores. In order to test whether these differences are statistically significant, a *t*-test for Equality of Means (2-tailed) was conducted. The significance column in Table 6 shows significant differences for the AL and OCB mean scores.

From Table 6 it is clear that there are statistically significant differences ($p = 0.000$) between low and high BO groups in respect of the AL and OCB mean scores. Therefore, the data supports the alternative hypothesis that the group with high levels of BO also score highly on AL, but are low on OCBs, as opposed to the low BO group.

The third hypothesis (graphically represented in Figure 1) predicts that the group with high WE scores will obtain statistically significantly lower AL scores, but statistically significantly higher OCB scores, than low WE groups. In a similar vein as the above stated hypothesis, an independent sample *t*-test was also done to determine whether there are statistically significant

TABLE 5
Means and standard deviations of low and high burnout groups' work alienation and organisational citizenship behaviourscores and equality of variances tests (*n* = 2429)

							Levene's Test for Equality of Variances	
	BO *Mdn*	**N**	**M**	**SD**	**Std. Error M**		**F**	**p**
Work alienation (AL)	Low BO	1210	3.479	1.304	0.037	Equal variances	0.489	0.484
	High BO	1219	4.705	1.307	0.037	assumed		
Organisational citizenship behaviour (OCB)	Low BO	1210	5.627	0.885	0.025	Equal variances	18.727	0.000*
	High BO	1219	5.343	1.014	0.029	not assumed		

Mdn, Median, *N*, Sample size; *M*, Mean; *SD*, Standard deviation, BO, burnout
*, Statistically significant (*p* ≤ 0.001)

TABLE 6
Independent sample t-tests for low and high burnout groups' work alienation and organisational citizenship behaviour scores (*n* = 2429)

		t-test for Equality of Means			
		t	**df**	**p (2-tailed)**	**Mean differences**
Work alienation (AL)	Equal variances assumed	-23.152	2427	0.000	-1.226
Organisational citizenship behaviour (OCB)	Equal variances not assumed	7.365	2387.909	0.000	0.284

df, degrees of freedom
All *t*-values are significant at the *p* ≤ 0.001 level

TABLE 7
Means and standard deviations of low and high work engagement groups' work alienation and organisational citizenship behaviour scores and equality of variances tests (*n* = 2429)

							Levene's Test for Equality of Variances	
	WE *Mdn*	**N**	**M**	**SD**	**Std. Error M**		**F**	**p**
Organisational citizenship behaviour (OCB)	Low WE	1159	5.204	1.018	0.029	Equal variances	40.444	0.000*
	High WE	1270	5.74	0.831	0.023	not assumed		
Work alienation (AL)	Low WE	1159	4.895	1.232	0.036	Equal variances	2.130	0.145
	High WE	1270	3.364	1.214	0.034	assumed		

Mdn, Median, *N*, Sample size; *M*, Mean; *SD*, Standard deviation, WE, work engagement
*, Statistically significant (*p* ≤ 0.001)

TABLE 8
Independent sample t-tests for low and high work engagement groups' work alienation and organisational citizenship behaviour scores (n = 2429)

		t-test for Equality of Means			
		t	*df*	*p* (2-tailed)	Mean differences
Organisational citizenship behaviour (OCB)	Equal variances not assumed	-14.140	2238.842	0.000	-0.536
Work alienation (AL)	Equal variances assumed	30.829	2427	0.000	1.531

df, degrees of freedom
All *t*-values are significant at the $p \leq 0.001$ level

differences in the mean scores of OCB and AL in respect of the low and high WE groups. Firstly, Levene's Test for Equality of Variances (Table 7) indicates whether the variances of the OCB and AL scores are equal for high and low WE groups. For AL ($p = 0.145$) the variances were assumed equal and for OCB ($p = 0.000$) the variances were assumed unequal.

It is clear from Table 7 that there are mean score differences between low and high WE groups in respect of the OCB and AL scores. The *t*-test for Equality of Means (2-tailed) was conducted to test for statistically significant differences. The significance column in Table 8 shows significant differences between high and low BO groups for OCB and AL mean scores.

From Table 8 it is clear that there are statistically significant differences ($p = 0.000$) for low and high WE groups in respect of the OCB and AL mean scores. Therefore, the data supports the alternative hypothesis that the group high on WE is also high on OCBs, but low on AL, as opposed to the low WE group. High WE and low BO thus show similar effects in respect of the AL and OCB scores. And again, low WE and high BO show similar effects in respect of the AL and OCB scores, thereby suggesting that WE and BO may be polar opposites.

The fourth hypothesis (graphically depicted in Figure 1) postulates that WE and OCBs will have a negative, predictive relationship to TI; whilst BO and AL will have a positive, predictive relationship to TI. In Table 3, the Pearson correlation coefficients of the predictor variables WE, BO, OCB and AL with TI are presented. The correlation coefficients of both WE and OCB are negatively related to TI ($r_{(df = 2428; p \leq 0.01)}$ = -0.581 and $r_{(df = 2428; p \leq 0.01)}$ = -0.108 respectively), with statistical significance and a concomitant low practical significance level. The correlation coefficients of both BO and AL are positively related to TI ($r_{(df = 2428; p \leq 0.01)}$ = 0.564 and $r_{(df = 2428; p \leq 0.01)}$ = 0.733 respectively), with statistical significance and a concomitant high practical significance level. Therefore, on a bivariate level the data supports the alternative hypothesis that WE and OCBs have a negative predictive relationship to TI; whilst BO and AL have a positive predictive relationship to TI.

To explore this relationship further on a multi-variate level, an *ANOVA* was conducted on each of the predictor variables WE, BO, OCB and AL. The *F* statistics in respect of WE, BO, OCB and AL are all statistically significant ($p = 0.000$). The null hypotheses were rejected and a linear relationship between each of the predictor variables and TI were established. The stepwise

multiple regression method was used and the model summary in Table 9 reflects the different properties of the regression model.

In Table 9, the multiple correlation coefficients (R) between the predictor variables of each model and the predicted variable (TI) are presented. The obtained variance (R^2) is the proportion of the variance that is attributable to the regression equation of TI. The Adjusted R^2 is the corrected version of the R^2 to better fit the population and is used to compare the models with other predictor models. The regression analysis of the model accounted for 59.6% of the variance of TI of the sample group ($\Delta R^2 = 0.596$). The regression coefficients are ranked in Table 9, from the predictor variable contributing the most variance to the least, when the variance explained by the other variables in the model is controlled. The beta coefficients reflect the regression weights that each predictor variable carries in the prediction of TI.

In Table 9, the stepwise multiple regression coefficients (R^2) of AL, BO, WE and OCB in predicting TI are provided. The significance levels ($p = 0.000$) of all the predictor variables listed in Table 9 are less than the critical value of 0.001 and therefore uniquely contribute to the prediction of TI. The regression equation for the prediction of TI can be formulated as:

$$TI = 1.836 + 0.495AL + 0.318BO - 0.180WE + 0.091OCB$$

Thus, evidence for the support of the alternative hypothesis of hypothesis 4 is hereby provided.

DISCUSSION

The main purpose of the study was to determine whether different constructs such as work engagement, burnout, OCB and work alienation are related to (and predictors of) turnover intentions. To the authors' knowledge this is the first study that includes the WE-BO continuum and constructs, such as OCB and work alienation as predictors of TI. In addition, WE and OCB were related to TIs in a negative and predictive manner and BO and AL were related to TIs in a positive and predictive manner.

Summary of results
Overall the scales and subscales used in the study yielded acceptable reliability coefficients, which is indicative of the internal consistency of the scales in relation to the ICT sector sample group. These reliabilities are shown in Table 3 and

TABLE 9
Stepwise multiple regression of work alienation, burnout, work engagement and organisational citizenship behaviour on turnover intervention

Predictor variables	*R*	*R²*	Standardised *R²*	Unstandardised Coefficients		Standardised Coefficients		
				B	Standard errors	Beta	*t*	*p*
Constant				**1.836**	**0.160**		**11.485**	**0.000**
Work alienation (AL)	0.733a	0.538	0.537	0.495	0.016	0.526	30.196	0.000
Burnout (BO)	0.763b	0.582	0.582	0.318	0.023	0.217	13.684	0.000
Work engagement (WE)	0770c	0.593	0.592	-0.180	0.020	-0.164	-9.085	0.000
Organisational citizenship behaviour (OCB)	0.772d	0.597	0.596	0.091	0.020	0.064	4.624	0.000

All regression coefficients are significant at the $p \leq 0.001$ level
a, Predictor: (Constant), AL; b, Predictors: (Constant), AL, BO; c, Predictors: (Constant), AL, BO, WE; d, Predictors: (Constant), AL, BO, WE, OCB; e, Dependent variable: TI
WE, work engagement; BO, burnout; OCB, organisational citizenship behaviour (OCB); AL, work alienation; TI, turnover interventions

mentioned in the discussion that follows Table 3. The study yielded even greater reliability coefficients for the UWES (α = 0.952) and its subscales than reported in the relevant literature (cf. Schaufeli *et al.*, 2002; Shimazu *et al.*, 2008; Storm & Rothmann, 2003). According to the psychometric guideline of a 0.80 acceptance level for Cronbach alpha coefficients (Nunnally, 1978), the MBI-HSS subscales, DP (α = 0.701) and diminished PA (α = 0.707) seem to provide inconclusive results as to whether it is reliable or not. However, the reliability coefficients of these two subscales were consistent with previous research findings (Kop *et al.*, 1999; Schaufeli *et al.*, 2001) and are not isolated cases.

Hypothesis 1 tested for a mediation effect of BO in the predictive relationship between WE and TI and the results supported the hypothesis. According to the reviewed literature, this particular mediation relationship has never been tested before. The different variables were regressed onto one another and the test for mediation showed the effect to be highly significant. However, the relationship between WE and TI is only partially mediated by BO. This finding comes as no surprise, seeing that two previous studies (Fogarty *et al.*, 2000; Huang *et al.*, 2003), albeit with different predictor variables, also found BO to only partially mediate similar BO relationships with TI. The tendency of BO to mediate relationships with TI only to a partial extent may point to the possibility of multiple variables mediating this relationship. Therefore, BO's mediation effect may be constrained to partiality in the relationship between WE and TI, due to multiple mediators contributing to this effect.

Both hypotheses 2 and 3 were confirmed by the results of the independent *t*-tests conducted (refer to Tables 5–8) and both delivered results of combination variables that has not been reported in previous literature. Hypothesis 2 stated that high BO groups will obtain statistically significantly higher AL scores, but statistically significantly lower OCB scores than low BO groups. The opposite relations were postulated for low BO groups.

Hypothesis 3 stated that groups with high levels of WE will obtain statistically significantly higher OCB scores, but statistically significantly lower AL scores than low WE groups. The opposite relations were postulated for low WE groups. The confirmation of this hypothesis also provides support for the effectiveness of the broaden-and-build theory of positive emotions (Fredrickson, 2001) and the COR theory (Hobfoll, 2001) regarding the upward spiral effect of positive emotions and anticipated outcomes of groups with high levels of both WE and OCB.

The existence of the WE-BO continuum is also supported by the results of hypotheses 2 and 3, which illustrate that similar results were obtained for high WE groups and low BO groups and high BO groups and low WE groups. These results are aligned with those of a study linking Type A behaviour with BO and WE (Hallberg *et al.*, 2007) that suggested the functioning of the WE-BO continuum in a similar indirect manner. However, it has to be made clear that separate measuring instruments for WE and BO, the UWES-17 and the MBI-HSS-20, were used for this study. The rationale behind measuring WE as a separate construct from BO and vice versa, is the recognised theoretical subcomponents of each of the two constructs. WE is characterised by vigour, dedication and absorption (Schaufeli & Bakker, 2004), whilst BO is characterised by emotional exhaustion, depersonalisation and diminished personal accomplishment (Maslach & Jackson, 1981). The single-factor structures of the three subscales of both WE and BO were also confirmed in this study. Therefore, it is not suggested that WE and BO are inseparable and co-dependent constructs, but rather that WE and BO may be polar opposites.

Hypothesis 4 was firstly addressed on a bivariate level (refer to Table 3). The negative, predictive relationship of WE and OCB with TI and the positive, predictive relationship of BO and AL with TI were confirmed. Secondly, the hypothesised predictive relationship of WE, BO, OCB and AL with TI was tested on a multi-variate level (refer to Table 9). All the predictor variables were found to uniquely contribute to the prediction of TI, with AL contributing the most variance, then BO, followed by WE and lastly OCB.

Managerial implications and recommendations

The study explored various antecedents of TI, which indicated that individuals who exhibit WE and OCB qualities are less likely to experience TIs, whilst those who exhibit BO and AL symptoms are more likely to experience TIs. The aim of the study described in this article was to increase management's understanding of the voluntary employee turnover process and, in doing so, improve the management of employee turnover statistics and its associated costs. The costs associated with the departure and replacement of employees can have a significant and detrimental effect on an organisation (Bluedorn, 1982).

This study analysed the events leading up to voluntary employee turnover. Certain indicators of TIs, such as the BO and AL levels of employees, have been identified. Certain work experiences, such as WE and OCBs, were found to reduce TI. These results could be applied in the construction of evidence-based recruitment and selection procedures, retention strategies and training and development interventions. A possible scenario where it will be beneficial to the organisation to make use of a selection instrument that also taps into the turnover propensities of candidates is that of a civil engineer vacancy. The employer would want to select a candidate less likely to quit for the duration of important projects. Also, in situations where management wishes to safeguard the company's clientele, as in the case of lawyers and marketing consultants, a similar selection procedure would prove beneficial. Therefore, human resource (HR) practices could benefit from the predictive validity this study provides and it could be used in the reduction of employee turnover.

The results may increase the accuracy of anticipated employee turnover expenses or may be used to reduce employee turnover and its associated costs (cf. Bluedorn, 1982). One specific managerial challenge is employee retention. Employee retention has become a more complex business outcome to pursue, seeing that high-potential (high flyer) employees tend to leave an organisation first. This is due to the plentiful options outside of the organisation offered by global or local competitors (Ready, Hill, & Conger, 2008). The results of this study could also be used to address some of the talent management and human capital issues modern-day organisations are grappling with. The practical implications of the study will, therefore, impact on all the HR value chain activities, ranging from employee entrance level right through to employee exit level.

Suggestions for future research

The literature provided evidence of linear relationships between all predictor variables and TIs (Coyne & Ong, 2007; Knudsen *et al.*, 2006; Koyuncu *et al.*, 2006; Leiter *et al.*, 2009; Lingard, 2003; Rothmann & Joubert, 2007; Saks, 2006; Schaufeli & Bakker, 2004; Sims, 2007; Wegge *et al.*, 2006), with the exception of work alienation. However, no substantial evidence of a relationship between the predictive model as a whole and TI is provided in I/O psychological literature and needs to be addressed in future longitudinal research projects. In this study, roughly 40% of the variance in TI remains unexplained, which begs the question as to what other variables should be included in this model? Future research can explore the possibility of an extended model that better explains TI.

Future researchers are urged to match greater numbers of predictive variables when attempting to explain organisational attitudes and behaviour (such as TIs). This will afford other researchers and HR practitioners the luxury of having access to more comprehensive and pragmatic predictive models. It is also

strongly suggested that the contributing effects of biographical and demographical variables be tested, seeing as very little literature is currently available on the interaction between these variables and the predictive model of TI. The I/O psychological meaning of the construct *work alienation* can also be explored in more detail (cf. Roodt, 2004a). A complete absence of research on the link between work alienation and TIs exists, even though this study has established a highly significant, positive link between these variables. This relationship needs to be further investigated in future research projects related to withdrawal behaviours and voluntary employee turnover.

Possible limitations of the study

A first limitation of this study is its cross-sectional field survey design, which hinders the credibility of its causal relationships. Longitudinal designs are usually preferred over cross-sectional designs for the establishment of causal relationships. A second limitation is, as Mouton (2001) also pointed out, the fact that a SDA was performed. Possible data collection errors could not be controlled by the authors and the study was restricted to the original research objectives. A third limitation is the specific focus on an ICT sector sample group. Although the sample size is large (n = 2429) and heterogeneous in respect of gender, race, age, marital status, education and job levels, generalising the results to the population outside the ICT sector should be done with caution. A fourth limitation is the exclusive use of self-report measures as data collection tools. A certain amount of social desirability, impression management and random responding are expected in self-report measures.

Conclusion

Firstly, the main objective of the study was to test the predictive model of the WE-BO continuum and the related concepts OCB and AL, to TI on a sample of a large ICT sector company. The predictive model of TI was indeed substantiated by the data as well as other predictive relationships with TI. WE and OCB were negatively related to TI and BO and AL were positively related to TI. Secondly, third-variable relationships were also tested for in the prediction of TI. BO was established as a partial mediator in the WE-TI relationship.

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