The validation of the turnover intention scale

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Orientation: Turnover intention as a construct has attracted increased research attention in the recent past, but there are seemingly not many valid and reliable scales around to measure turnover intention.

Research purpose: This study focused on the validation of a shortened, six-item version of the turnover intention scale (TIS-6).

Motivation for the study: The research question of whether the TIS-6 is a reliable and a valid scale for measuring turnover intention and for predicting actual turnover was addressed in this study.

Research design, approach and method: The study was based on a census-based sample (n = 2429) of employees in an information, communication and technology (ICT) sector company (N = 23 134) where the TIS-6 was used as one of the criterion variables. The leavers (those who left the company) in this sample were compared with the stayers (those who remained in the employ of the company) in this sample in respect of different variables used in the study.

Main findings: It was established that the TIS-6 could measure turnover intentions reliably (α = 0.80). The TIS-6 could significantly distinguish between leavers and stayers (actual turnover), thereby confirming its criterion-predictive validity. The scale also established statistically significant differences between leavers and stayers in respect of a number of the remaining theoretical variables used in the study, thereby also confirming its differential validity. These comparisons were conducted for both the 4-month and the 4-year period after the survey was conducted.

Practical/managerial implications: Turnover intention is related to a number of variables in the study which necessitates a reappraisal and a reconceptualisation of existing turnover intention models.

Contribution/value-add: The TIS-6 can be used as a reliable and valid scale to assess turnover intentions and can therefore be used in research to validly and reliably assess turnover intentions or to predict actual turnover.

Introduction

The retention of staff is considered to be a pressing people issue and consequently much has been published about it (cf. Bothma & Roodt, 2012; Du Plooy & Roodt, 2010; Greyling & Stanz, 2010; Griffeth, Horn, & Gaertner, 2000; Kotzé & Roodt, 2005; Mendes & Stander, 2011). Turnover intentions (intentions to stay or leave the organisation) is an important criterion variable in similar types of studies, but such studies seldom publish any additional validation information on these criterion measures. The challenge and importance of this study therefore is to develop a scale that can serve as a valid and reliable criterion variable in future turnover or retention studies.

Although turnover intention is covered well in the literature, the need remains to validate turnover cognition scales (Sager, Griffeth & Horn, 1998). The motivation for validating the shortened version of the turnover intention scale (TIS-6) is that most other scales use only a limited number of scale items. Martin (2007) observed that various researchers have only used single item scales (Guimaraes, 1997; Lambert, Hogan, & Barton, 2001), with obvious metric limitations. According to Martin (2007), only a limited number of other studies have used more than three items in their instruments (Becker, 1992; Fox & Fallon, 2003; Lum, Kervin, Clark, Reid & Sirola, 1998). It seems that information on the metric properties of such instruments is lacking and that no validation research is reported specifically on the TIS-6 (the studies by Jacobs [2005] and Martin [2007] report on the longer TIS versions).

The main research question of this study is therefore as follows: is the shortened TIS-6 a reliable and valid scale for measuring turnover intention and for predicting actual turnover? The objectives of

the study are to investigate, (1) the reliability, (2) the construct (factorial) validity, (3) the criterion-predictive validity and (4) the differential validity of the TIS-6 within the context of a large South African information, communication and technology (ICT) sector company. The contribution of this study would be that a valid and reliable turnover intention scale is developed for future use as a criterion or predictor variable. It is also important to use valid and reliable scales as a proxy for predicting actual turnover.

Literature review

Defining turnover intention

Bester (2012) noted that turnover intention is seldom precisely defined in reported studies. He concluded that this practice is probably attributable to the assumption that people perceive the term to be self-explanatory. Bester (2012) further argued that many researchers (Horn, Griffeth & Salaro, 1984; Mobley, 1982; Mowday, Steers, & Porter, 1979; Steers, 1977) viewed turnover intention as the final step in the decision-making process before a person actually leaves a workplace. Turnover intention can therefore be described as an individual's behavioural intention or *conation*, in Fishbein and Ajzen's (1975) framework of planned behaviour, to leave the employ of the organisation. Lacity, Lyer and Rudramuniyaiah (2008, p. 228) defined turnover intention as '… the extent to which an employee plans to leave the organisation'. For the purpose of this study, the definition of Tett and Meyer (1993, p. 262) is used, who aptly defined turnover intention as: '… the conscious and deliberate wilfulness to leave the organisation'. The TIS-6 was developed as a conation (intention) to distinguish it from the affective (emotion) and the cognitive (knowledge) components of psychological activities as conceptualised by Fishbein and Ajzen (1975).

Against the background of Fishbein and Ajzen's (1975) theoretical framework, behavioural intention is a reliable determinant of actual behaviour (Jaros, Jermier, Koehler & Sincich, 1993; Muliawan, Green & Robb, 2009). It has also been empirically established that turnover intention (conation) has a positive relationship with actual turnover (actual behaviour) (Byrne, 2005; Hendrix, Robbins, Miller & Summers, 1998; Steensma, Van Breukelen & Sturm, 2004). Several authors argued that turnover intention can be used as a valid proxy for actual labour turnover (Jaros *et al.*, 1993; Muliawan *et al.*, 2009; Tett & Meyer, 1993). Turnover is the result of a coping strategy used by employees to escape the current situation (cf. Petriglieri, 2011). Turnover can be permanent, when employees leave the employment institution, or it can be characterised by horizontal mobility when employees seek and accept transfers to other departments (Kirpal, 2004). Tett and Meyer (1993, p. 262) referred to turnover as '… the last in a sequence of withdrawal cognitions …', a practice that Petriglieri (2011, p. 648) named an 'identity exit'.

Theoretical models that explain turnover intentions

Several authors (Bakker & Demerouti, 2006; Jacobs, 2005; Lee & Mitchell, 1994; Mobley, 1982; Morrell, Loan-Clarke, Arnold & Wilkinson, 2008; Petriglieri, 2011; Schaufeli & Bakker, 2004; Zeffane, 1994) have developed and tested models in an attempt to explain turnover intentions and related constructs. Perhaps the most prominent of these is the job resources-demands (JD-R) model (Bakker & Demerouti, 2006; Bakker, Demerouti & Verbeke, 2004), which provides plausible explanations as to why individuals may choose to leave an organisation. In most studies that used the JD-R model, the path to turnover intention is the result of job demands that cause burnout. An indirect relationship between job demands and turnover intention is therefore proposed. Bester (2012) also suggested that this idea is based upon studies which have found that job demands, especially when there are less resources, stimulate exhaustion (the opposite of engagement) and, in turn, cause turnover intentions (Bakker & Demerouti, 2006; Bakker *et al.*, 2004; Demerouti, Bakker, Nachreiner & Schaufeli, 2000; Schaufeli & Bakker, 2001; Schaufeli & Bakker, 2004). According to Schaufeli and Bakker (2004), the link between work engagement, burnout and turnover intention is well established. The abovementioned studies also indicated that the absence of job resources was related to disengagement, which increased turnover intention. A possible limitation of the JD-R model may be that it mostly emphasises contextual and/or organisational resources and demands and, to a lesser extent, personal resources or the role of personal agency. Sweetman and Luthans (2010), on the other hand, introduced the concept of 'psychological capital' (personal resources), which includes facets such as efficacy, optimism, hope and resiliency that may act as a buffer between contextual demands and turnover intention.

The finding that the absence of job resources stimulated turnover intention was also supported in a study that did not use the JD-R model (Agarwal, Ferrat & De, 2007). Along a similar line, Du Plooy and Roodt (2010) indicated on a bivariate level that both work engagement and organisational citizenship behaviour are negatively related to turnover intention, whilst work alienation and burnout are positively related. In a stepwise multiple regression, however, work alienation explains the largest amount of variance (54%) in turnover intention, whilst the beta weight of organisational citizenship behaviour ($\beta = 0.064$) in the prediction model turned positive. These findings therefore suggest that work engagement and work alienation should rather be viewed as polar opposites with organisational citizenship behaviours and burnout, respectively, as resulting consequences. It seems that in tight economic or labour market conditions, individuals do not wish to 'burn bridges', which may explain the positive relationship between organisational citizenship behaviours and turnover intention.

Jacobs (2005) proposed a different turnover intention model, where positive or negative perceptions of organisational culture (predictors) were related to turnover intentions (criterion). A number of variables mediated this said relationship, such as job satisfaction, organisational citizenship behaviour, organisational commitment and knowledge sharing (cf. Boshoff, Van Wyk, Hoole & Owen,

2002; Wasti, 2003 for similar types of models). Individuals' perception of organisational culture may therefore trigger key mediating variables, which may, again in turn, lead to decisions to leave or stay with the organisation.

Another theoretical framework which may shed light on an individual's decision to exit an organisation is Petriglieri's (2011) theory of identity threat responses. In a nutshell, this theory argues that individuals assess the identity threat and possible coping responses against the threat strength and the background of existing social support. This results in two broad coping strategy categories of either identity protection responses or identity restructuring responses. *Identity exit* is one of the identity restructuring responses which will eliminate the identity threat. This model has particular relevance for turnover within the conceptual framework of work identity.

Implications of turnover intentions

Bothma (2011) argued that leaving a job may not always be an option for an individual. The decision to leave is influenced by many personal and contextual factors such as employability and labour market conditions. An individual's turnover intention is dependent on perceived chances and the ease of finding another job (especially in tough economic conditions), the role of mobility cognitions, as well as individual differences in search behaviour. Alternative employment opportunities therefore influence actual labour turnover behaviour (Agarwal *et al.*, 2007; Akgün & Lynn, 2002; Allen & Meyer, 1996; Bellou, 2008; Boies & Rothstein, 2002; Brown, 1996; Carmeli & Gefen, 2005; Chen, Chu, Wang & Lin, 2008; Jaros *et al.*, 1993; Lee & Mitchell, 1994; Martin & Roodt, 2008; Mobley, 1982; Senter & Martin, 2007; Wheeler, Gallagher, Brouer & Sablynski, 2007).

Bothma (2011) concluded that the turnover phenomenon has significant cost and other negative consequences for any organisation (Bluedorn, 1982; Greyling & Stanz, 2010; Mobley, 1982). Losing employees that are highly skilled may have disruptive implications for organisations, such as impaired organisational functioning, service delivery and administration. It may also contribute to increased costs of re-hiring and re-training employees (Roodt & Bothma, 1997; Sulu, Ceylan & Kaynak, 2010). These mentioned consequences provide a sound rationale for this validation study of the TIS-6.

In summary, this study will investigate and make comparisons of those that leave the employ of the organisation (leavers) versus those that stay in service (stayers) in respect of turnover intentions, work-based identity scores, the three dimensions of work engagement, the three dimensions of burnout, organisational citizenship behaviour, personal alienation and task performance.

Research design

Research approach

The research approach followed in this study is empirical and quantitative, where a cross-sectional field survey generated the primary research data for this study. For data analyses, correlational statistical procedures were applied for generating plausible, *ex post facto* explanations for relationships between variables.

Research method

The research method used in this study will be explained under the headings that follow. A more detailed explication of the research method can also be found in Bothma and Roodt (2012, pp. 6–8), whilst the discussion of the measuring instruments are also detailed in the first author's thesis (Bothma, 2011).

Research participants

A census-based sampling approach[1] was used to survey the target population below middle management (N = 23 134), in the service of a South African ICT sector company. The survey was conducted over a 1-month period with a Web-based questionnaire application. An invitation to participate in the survey was sent to the entire target population via e-mail, with the universal resource locator (URL) address attached for ease of responding. Responses on the Web-based questionnaire were anonymous. A response rate of about 11% yielded a sample of 2429 research participants. This sample was used for the comparisons of leavers and stayers over both the 4-month and the 4-year period.

Table 1 reflects that most participants were men (63.2%). The majority of the participants (44.1%) were White, followed by Black (26.3%), Coloured (16.3%) and Asian or Indian (13.3%). These ethnic proportions reflect the heterogeneity of the company's work force. The mean age of the participants was about 40 years, which reflects a mature labour force. The majority of the respondents were from operational levels (55.0%) and were stationed in the corporate region (25.0%) of the company. About 41.0% of the participants had a Matric or lower qualification, followed by 27.0% that possessed a National or National Higher Diploma.

Measuring instruments

A number of established measuring instruments with known reliabilities and validities were used in this study. Owing to the lack of space, not all the validity and reliability coefficients as reported in previous studies can be reported here. Only brief reference will be made to Cronbach alpha reliabilities reported by the original authors and those found in this study.

Turnover intention scale: Turnover intention (the intention to leave or stay) was measured with a six-item scale

1. Bothma and Roodt (2012) described a census-based sampling approach as follows: 'Before the term census-based sampling can be understood, the terms *census* and *random sample* need to be explained. In a census the whole target population is surveyed and participation is compulsory. A random sample on the other hand is a randomly selected portion of the target population; they can choose whether to participate in the survey or not. A census-based sampling approach enumerates all members of the target population (similar to a census) with the choice to participate in the survey or not. Self-selection bias (which falls outside the control of the researcher) equally affects response rates of census-based as well as other random sampling strategies. Because a census-based sampling approach enumerates the complete population as a sample, it is a more accurate sampling strategy compared to normal random sampling strategies where only small portions of the population are sampled'.

TABLE 1: Biographical and demographical profile of the respondents (n = 2429).

Variable	Category	Frequency (f)	Percentage (%)
Age (years)	20–29	292	12.0
	30–39	960	39.5
	40–49	877	36.1
	50+	300	12.4
Gender	Female	893	36.8
	Male	1536	63.2
Race	Black	640	26.3
	White	1070	44.1
	Coloured	395	16.3
	Asian or Indian	324	13.3
Job tenure (years)	0–1	205	8.4
	2–5	433	17.8
	6–10	700	28.8
	11–15	303	12.5
	16–20	226	9.3
	20+	562	23.1
Education	Grade 12 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
Location	Central	119	4.9
	Corporate	605	24.9
	Eastern	318	13.1
	Gauteng	450	18.5
	North-eastern	336	13.8
	Southern	159	6.5
	Western	442	18.2
Marital status	Single	511	21.0
	Married or cohabiting	1678	69.1
	Divorced or separated	214	8.8
	Widowed	26	1.1
Level	Management	446	18.4
	Operational	1334	54.9
	Specialist	649	26.7

adapted from the 15-item scale initially developed by Roodt (2004). To enhance the reliability of responses, behaviour intention should be measured within a reasonable timeframe after accepting a position within a company. Based on recommendations from literature (Muliawan *et al.*, 2009), this study used a 6-month period.

Examples of items included in the TIS-6 are: 'How often have you considered leaving your job?' and 'How often do you look forward to another day at work?' Jacobs (2005) reported a Cronbach alpha coefficient of 0.91 for the 15-item version of the TI scale. Martin (2007) and Martin and Roodt (2008) in their study reported a Cronbach alpha coefficient of 0.90 for a 13-item version of the scale. The reliability of the TIS-6 will be reported in the 'Results' section.

Alienation scale: The five-item alienation scale (AL) of Banai, Reisel and Probst (2004) is based on the personal alienation scale of Korman, Wittig-Berman and Lang (1981) and was also later used by Banai and Reisel (2007) to measure work alienation in a cross-national study.

Examples of the selected items are: 'To what extent do you feel that your daily activities don't reflect your real interests and values?' and 'How likely is it that you would prefer to live a different life than you are currently doing?' Banai and Reisel (2007) reported a Cronbach alpha coefficient of 0.80 for the AL. The Cronbach alpha reliability for the scale in this study was 0.81.

Helping behaviour: According to Podsakoff, MacKenzie, Paine and Bachrach (2000), helping behaviour includes various conceptualisations such as altruism, peace-making, cheerleading and interpersonal helping. Helping behaviour was measured with a nine-item scale of which five items were from the helping behaviour scale (Van Dyne & LePine, 1998) and four items from the altruism dimension of the citizenship behaviour scale (Smith, Organ & Near, 1983).

Examples of the selected items are: 'How often do you volunteer to do things in your work group?' and 'How often do help others who have heavy workloads?' Van Dyne and LePine (1998) reported Cronbach alpha coefficients for the helping behaviour scale in a range from 0.88 to 0.95. This study reported a Cronbach alpha coefficient of 0.86 for helping behaviour measured by the combined and adjusted scale.

Maslach burnout inventory – human services survey: For the purpose of this study, the Maslach burnout inventory – human services survey (MBI-HSS-20) (Maslach & Jackson, 1981) was used to measure burnout at work. The 20-item instrument is composed of three dimensions, namely emotional exhaustion (EE) (eight items) with Cronbach alpha coefficients ranging from 0.85 to 0.90, depersonalisation (DP) (five items) with Cronbach alpha coefficients ranging from 0.58 to 0.79 and reduced personal accomplishment (PA) (seven items) with Cronbach alpha coefficients ranging from 0.70 to 0.71 (Gil-Monte, 2005; Maslach, Jackson & Leiter, 1996).

Examples of the selected items are: 'I feel emotionally drained from my work' and 'I feel used up at the end of the work day.' A seven-point Likert-type frequency rating scale ranging between extreme values of 0 (never) and 6 (always) was used to rate job burnout items (Maslach, Jackson & Leiter, 1986, 1996). This study found Cronbach alpha coefficients of 0.89 for emotional exhaustion, 0.70 for depersonalisation and 0.71 for reduced personal accomplishment.

Utrecht work engagement scale: The Utrecht work engagement scale (UWES-17) was used to measure work engagement in this study. The 17-item version consists of three dimensions, namely vigour (VI) (six items) with Cronbach alpha coefficients ranging from 0.75 to 0.82, dedication (DE) (five items) with Cronbach alpha coefficients ranging from 0.88 to 0.90 and absorption (AB) (six items) with Cronbach alpha coefficients ranging from 0.70 to 0.77 (Schaufeli, Salanova, Conźalez-Romá & Bakker, 2002).

Examples of scale items are: 'At my work, I feel bursting with energy' and 'Time flies when I'm working'. A seven-point Likert-type frequency rating scale ranging between extreme

values of 0 (never) and 6 (always) was used to rate work engagement items (Schaufeli & Bakker, 2003). This study found a Cronbach alpha coefficient of 0.91 for the UWES-17.

Task performance scale: Task performance assessment was independently conducted by participants' supervisors. These assessments were measured with an adaptation of a nine-item scale (Rotenberry & Moberg, 2007; Williams & Anderson, 1991).

Examples of the scale items are: 'How often does this employee perform the tasks that are expected from him or her?' and 'How frequently does this employee fail to perform essential duties?' Care was taken that the scale did not overlap with items related to contextual, helping behaviour performance as discussed above. Rotenberry and Moberg (2007) reported a Cronbach alpha coefficient of 0.91 for the task performance scale. This study found a Cronbach alpha coefficient of 0.94 for task performance.

Work-based identity scale: Previous attempts were made to measure work-based identity (Aryee & Luk, 1996; Buche, 2003, 2006, 2008; Walsh & Gordon, 2007; Wayne, Randel & Stevens, 2006), but no suitable measuring instrument was found that complied with the theoretical definition of work-based identity. Different scales that measure different facets of work-based identity as defined in the work-based identity prototype (refer to Bothma, 2011), such as work role centrality, person–environment fit, organisational identification, job involvement, occupational and/or professional identity and career identity were sourced, adapted and combined to measure work-based identity (Lauver & Kristof-Brown, 2001; Lodahl & Kejner, 1965; Mael & Ashforth, 1992; Roodt, 1997; Roodt, De Braine, Bothma & Jansen, 2009; Serafini, Maitland & Adams, 2006).

A proposed work-based identity scale was compiled, consisting of 36 items representing the different facets of work-based identity, selected from a number of various pre-existing scales. Firstly, items were selected from the organisational-related commitment scale of Roodt (1997). Examples of selected items are: 'To what extent do you regard work as the most important aspect in your life?' and 'To what extent does your job allow for the achievement of personal goals?' Secondly, job involvement was measured with items that were selected from Lodahl and Kejner's (1965) job involvement scale, such as: 'How likely are you to regard your work as only a small part of who you are?' Thirdly, items were selected from three subscales from the functions of identity scale of Serafini *et al.* (2006). The items were selected from the subscales: 'structure' – defined as '… the structure of understanding of who one is' (p. 1), 'goals' – defined as '… meaning and direction through commitments, values and goals' (p. 1) and 'future' – defined as '… meaning and direction through commitments, values and goals and sense of future' (p. 1). Fourthly, organisational identification was measured with the scale of Mael and Ashforth (1992). Examples of the adapted items are: 'How often do you say "we" rather than "they" when you talk about the organisation that you work for?' and 'How interested are you in what others think about the organisation that you work for?' Finally, person-organisation fit was measured with items selected from the scale of Lauver and Kristof-Brown (2001). Examples of the selected items are: 'To what degree do your values match or fit the values of the organisation that you work for?' and 'To what degree are you able to maintain your values at the organisation that you work for?'

Reliability and validity of the instrument was determined by submitting the 36-item questionnaire to first-level and second-level factor analyses to determine the factor structure (Figure 1). Three columns can be identified in Figure 1. The left-hand column shows the theoretical sub-constructs as explained above with their respective reliabilities. The middle column shows the results of the first-level factor analysis based on the six postulated factors and their respective reliabilities. The right-hand column shows the results of the second-level factor analysis and the respective reliabilities of the two postulated factors. The factor analyses yielded a 28-item, one-dimensional work-based identity scale with a Cronbach alpha coefficient of 0.95 (Roodt *et al.*, 2009). The second factor, labelled 'future', was omitted because it was based on experimental items.

Research procedure

An electronic invitation to participate in the survey was sent to all ICT sector company employees up to middle management. The survey instrument was designed in such a way that it allowed for 'one-at-a-time completion' of separate components of the survey. The successful completion of the questionnaire by the participants activated the last survey instrument, the task performance scale, to be completed by their immediate supervisor. Electronic reminders were sent out on a weekly basis to all participants requesting and reminding them to participate (or thanking those that participated already). Participation was voluntary, responses were treated as confidential and no incentives were provided to enhance participation.

In the 4-month period *after* the initial survey was conducted it was established that 84 respondents left the service of the company (identified by means of the company's PERSAL system) – this group was labelled the 'leavers'. A random sub-sample of 88 was drawn from the remainder of the initial sample – and this group was labelled the 'stayers'. The leavers and stayers were compared in terms of the different variable mean scores. The same procedure was then repeated *after* a 4-year period, where 405 leavers of the same initial sample were compared with 405 randomly selected stayers from the remaining sample. By only using their PERSAL numbers, all the participants remained anonymous to the researchers.

Statistical analysis

All statistical analyses were conducted with the standard SPSS (version 18.0) software program (Pallant, 2007) by the Statistical Consultation Service (Statcon) of the University of Johannesburg. These analyses were conducted in two

Theoretical sub-constructs			First-level factor analysis			Second-level factor analysis		
Item per dimension	Item – total correlation	Dimension reliability	Item	Item – total correlation	Factor reliability	Item	Item – total correlation	Construct reliability
DQ1	0.72	Work α = 0.82	DQ18	0.78	WI 1 α = 0.94	DQ18	0.74	Work-based identity α = 0.95
DQ2	0.69		DQ17	0.77		DQ17	0.73	
DQ3	0.73		DQ7	0.76		DQ7	0.69	
DQ4	0.54		DQ8	0.76		DQ8	0.72	
DQ16	0.49		DQ10	0.76		DQ10	0.74	
EQ1	0.42		DQ9	0.63		DQ9	0.53	
DQ5	0.62	Job α = 0.82	DQ5	0.74		DQ5	0.69	
DQ6^{R}	0.40		DQ2	0.72		DQ2	0.66	
DQ9	0.55		DQ19	0.71		DQ19	0.70	
DQ13	0.41		DQ3	0.74		DQ3	0.69	
DQ14	0.40		DQ12	0.75		DQ12	0.75	
DQ15	0.50		EQ1	0.51		EQ1	0.48	
DQ17	0.71		DQ6^{R}	0.45		DQ11	0.73	
DQ19	0.69		DQ11	0.67		DQ1	0.69	
DQ20	0.46		DQ1	0.67		DQ4	0.55	
DQ7	0.72	Career or occupation α = 0.85	DQ4	0.54		DQ20	0.48	
DQ8	0.76		DQ20	0.47		GQ19	0.55	
DQ18	0.70		EQ4	0.44		GQ20	0.48	
DQ10	0.58	Organisational identity α = 0.87	GQ19	0.76	WI 2 α = 0.87	GQ17	0.56	
DQ11	0.63		GQ20	0.69		GQ18	0.63	
DQ12	0.61		GQ17	0.71		GQ15	0.55	
GQ15	0.66		GQ18	0.72		GQ16	0.36	
GQ16	0.44		GQ15	0.66		DQ15	0.55	
GQ17	0.68		GQ16	0.47		DQ14	0.42	
GQ18	0.72		DQ15	0.58	WI 3 α = 0.74	DQ16	0.57	
GQ19	0.70		DQ14	0.53		DQ13	0.47	
GQ20	0.62		DQ16	0.58		EQ7	0.57	
GQ21^{R}	0.20		DQ13	0.41		EQ8	0.50	
EQ2	0.94	Future α = 0.72	EQ2	0.65	WI 4 α = 0.78	EQ2	0.46	Future α = 0.74
EQ3	0.56		EQ3	0.65		EQ3	0.52	
EQ4	0.30		EQ7	0.69	WI 5 α =0 .82	EQ5	0.70	
EQ5	0.66		EQ8	0.69		EQ6	0.56	
EQ6	0.51		EQ5	0.67	WI 6 α = 0.80			
EQ7	0.52	Person–environment fit α = 0.60	EQ6	0.67				
EQ8	0.57							
EQ9^{R}	0.20							

Source: Adapted from Bothma, F.C. (2011). *The consequences of employees' work-based identity*. Unpublished DCom thesis, University of Johannesburg, Johannesburg.
Boxes shaded in grey denote deleted items or factors, whilst different colours indicate items of different theoretical dimensions.
WI 1 – WI 6 denote items included in first-level and/or second-level factors by using different colours

FIGURE 1: Factor analyses results of the work-based identity scale.

phases. In the first phase, descriptive statistical analyses, factor and iterative item reliability analyses and correlations between all the variables were conducted. In the second phase, inferential statistical analyses were conducted.

Results

A summary of the factor analysis procedure and results on the TIS-6 is presented in Table 2. The second column in Table 2 refers to the item loadings (ranging between 0.73 and 0.81) on the single extracted factor and the third column to the scale internal consistency reliability (item GQ2 was reflected). A single factor was extracted (principal axis factoring with varimax rotation) with a Cronbach alpha reliability coefficient (α = 0.80) for the TIS-6. These findings confirm the factorial validity as well as the reliability of the TIS-6.

Similar factor analytic procedures were repeated for the other variables used in the study (which are not repeated here), but their reliabilities were reported individually earlier under the sub-heading 'Measuring instruments'. The intercorrelations between the different variables are presented in Table 3, in which it is evident that the different variables are all significantly related. More specifically, the correlations between turnover intentions and other variables range between $r(2428) = -0.11$, $p = 0.050$ for helping behaviour and $r(2428) = 0.73$, $p = 0.001$ for alienation. In the first case, turnover intention would decrease if helping behaviour

TABLE 2: Factor analysis results of the turnover intention scale.

Scale reliability	Scale Items	Item loadings
Turnover intention α = 0.80	GQ1	0.733
	GQ2R	0.772
	GQ3	0.815
	GQ4	0.733
	GQ5	0.767
	GQ6	0.779

R, item score is reflected.

increases. In the second case, turnover intention would increase if alienation increases.

The data profiles of the 84 employees who resigned from the ICT company over the 4-month period after the survey was conducted were compared with the data profiles of the 88 employees drawn randomly from the remaining sample ($n = 2345$) who stayed with the company. Independent sample *t*-tests were conducted to compare the different variable scores of those employees who resigned versus those who stayed. The following analyses (displayed in Table 4) provide evidence that the turnover intention score can be used as a proxy for actual labour turnover. The guidelines of Cohen (1988, pp. 284–287) were followed to calculate the effect sizes for independent-sample *t*-tests, expressed as partial eta-squared. The variance strength of partial eta-squared is indicated as ranging between $0.01 \leq \eta_p^2 \leq 0.05$ (small*), $0.06 \leq \eta_p^2 \leq 0.13$ (moderate**) and $\eta_p^2 \geq 0.14$ (large***) effect.

There was a significant difference in the turnover intention scores of those employees who resigned (M = 5.14, SD = 1.26) compared to those who stayed (M = 4.13, SD = 1.28): $t(170) = 5.20$, $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = 1.01, 95% CI: 0.63 to 1.39) has a large effect ($\eta_p^2 = 0.14$). This finding supports the criterion-predictive validity of the TIS-6 to predict actual turnover.

There was a significant difference in the work-based identity scores of those who resigned (M = 4.16, SD = 1.22) compared to those who stayed (M = 4.96, SD = 0.92): $t(153.8) = -4.84$, $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = -0.79, 95% CI: -1.12 to -0.47) has a moderate effect ($\eta_p^2 = 0.12$).

TABLE 3: Intercorrelation matrix (Pearson correlations) of the different variables.

Variables used in the study	M	SD	WI	AL	H-OCB	PA	EE	DP	WE	TI	TP
WI	136.80	29.0	[0.95]	–	–	–	–	–	–	–	–
AL	20.76	7.0	-0.56**	[0.81]	–	–	–	–	–	–	–
H-OCB	49.36	8.7	0.37**	-0.13**	[0.86]	–	–	–	–	–	–
PA	29.15	7.6	0.35**	-0.22**	0.29**	[.71]	–	–	–	–	–
EE	19.82	12.0	-0.39**	0.51**	-0.11**	-0.05*	[0.89]	–	–	–	–
DP	8.49	6.3	-0.26**	0.33**	-0.07**	-0.05*	0.66**	[0.70]	–	–	–
WE	24.13	7.0	0.71**	-0.62**	0.35**	0.42**	-0.40**	-0.27**	[0.91]	–	–
TI	25.21	8.1	-0.56**	0.73**	-0.11**	-0.20**	0.56**	0.37**	-0.58**	[0.80]	–
TP	51.75	8.8	0.08**	-0.13**	0.11**	0.08**	-0.06**	-0.07**	0.09**	-0.13**	[0.94]

WI, work-based identity; AL, alienation; H-OCB, helping behaviour; PA, reduced personal accomplishment; EE, emotional exhaustion; DP, depersonalisation; WE, work engagement; TI, turnover intention; TP, task performance; M, mean; SD, standard deviation.
Coefficient alphas are presented in square brackets along the diagonal.
*$p \leq 0.050$; **$p \leq 0.001$
$n = 2429$

TABLE 4: Independent-samples *t*-tests comparing group means (4-month period).

Variable	Equal variances (assumed or not assumed)	Levene's test for equality of variances		*t*-Test for equality of means							
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	SE difference	95% Confidence interval of the difference		Eta squared
									Lower	Upper	
Work-based identity	Assumed	7.110	0.018	-4.84	170.000	0.001	-0.79	0.16	-1.12	-0.47	–
	Not assumed	–	–	-4.81	153.849	0.001	-0.79	0.17	-1.12	-0.47	0.12**
Personal alienation	Assumed	0.020	0.889	3.43	170.000	0.001	0.73	0.21	0.31	1.14	0.07**
	Not assumed	–	–	3.43	169.319	0.001	0.73	0.21	0.31	1.14	–
Emotional exhaustion (BO1)	Assumed	0.730	0.392	-2.18	170.000	0.030	-0.34	0.16	-0.65	-0.03	0.03**
	Not assumed	–	–	-2.18	169.819	0.030	-0.34	0.16	-0.65	-0.03	–
Depersonalisation (BO2)	Assumed	1.720	0.191	4.06	170.000	0.001	0.86	0.21	0.45	1.28	0.09**
	Not assumed	–	–	4.07	169.999	0.001	0.86	0.21	0.45	1.28	–
Reduced personal accomplishment (BO3)	Assumed	1.310	0.253	2.32	170.000	0.021	0.45	0.19	0.07	0.83	0.04**
	Not assumed	–	–	2.32	168.025	0.021	0.45	0.19	0.07	0.83	–
Turnover intention	Assumed	0.640	0.423	5.20	170.000	0.001	1.01	0.19	0.63	1.39	–
	Not assumed	–	–	5.21	169.827	0.001	1.01	0.19	0.63	1.39	0.14***
Vigour (WE1)	Assumed	14.010	0.000	-4.24	170.000	0.001	-0.78	0.18	-1.14	-0.42	–
	Not assumed	–	–	-4.21	150.503	0.001	-0.78	0.18	-1.14	-0.42	0.09**
Dedication (WE2)	Assumed	12.540	0.001	-4.32	170.000	0.001	-1.00	0.23	-1.46	-0.54	–
	Not assumed	–	–	-4.28	145.060	0.001	-1.00	0.23	-1.46	-0.54	0.10**
Absorption (WE3)	Assumed	14.540	0.000	-3.93	170.000	0.001	-0.73	0.19	-1.10	-0.36	–
	Not assumed	–	–	-3.90	145.300	0.001	-0.73	0.19	-1.10	-0.36	0.08**
Helping behaviour (H-OCB)	Assumed	2.604	0.108	-1.565	170.000	0.119	-0.25	0.16	-0.56	0.07	Not sig.
	Not assumed	–	–	-1.558	162.188	0.121	-0.25	0.16	-0.56	0.07	–
Task performance	Assumed	0.934	0.335	-1.566	154.000	0.120	-0.25	0.16	-0.57	0.07	Not sig.
	Not assumed	–	–	-1.554	144.947	0.122	-0.25	0.16	-0.57	0.07	–

F, *F*-value; Sig., significance; *t*, *t*-value; *df*, degrees of freedom; SE, standard error; Eta squared, where the partial eta-squared of the variance strength is indicated as 0.01 (small*), 0.06 (moderate**) and 0.14 (large***) effects.
The researchers followed the guidelines of Cohen, J.W. (1988). *Statistical power analysis for the behavioral sciences*. (2nd edn.). Hillsdale: Lawrence Erlbaum, p. 284.

There was a significant difference in the personal alienation scores of those who resigned (M = 4.85, SD = 1.40) and those who stayed (M = 4.12, SD = 1.37): $t(170) = 3.43$, $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = 0.73, 95% CI: 0.31 to 1.14) has a moderate effect ($\eta_p^2 = 0.07$).

There was a significant difference in the emotional exhaustion (BO1) scores of those who resigned (M = 3.06, SD = 1.36) compared to those who stayed (M = 2.19, SD = 1.42): $t(170) = -2.18$, $p = 0.030$ (two-tailed). The difference in the means (mean difference = 0.86, 95% CI: -0.65 to -0.03) has a small effect ($\eta_p^2 = 0.03$).

There was a significant difference in the depersonalisation (BO2) scores of those who resigned (M = 1.93, SD = 1.31) compared to those who stayed (M = 1.48, SD = 1.23): $t(170) = 4.06$, $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = 0.45, 95% CI: 0.46 to 1.28) has a moderate effect ($\eta_p^2 = 0.09$).

There was a significant difference in the reduced personal accomplishment (BO3) scores of those who resigned (M = 3.92, SD = 0.98) compared to those who stayed (M = 4.26, SD = 1.06): $t(170) = 2.32$, $p = 0.021$ (two-tailed). The difference in the means (mean difference = -0.34, 95% CI: 0.07 to 0.83) has a small effect ($\eta_p^2 = 0.04$).

There was a significant difference in the vigour (WE1) scores of those who resigned (M = 3.96, SD = 1.38) compared to those who stayed (M = 4.73, SD = 1.00): $t(151) = -4.24$, $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = -0.78, 95% CI: -1.14 to -0.42) has a moderate effect ($\eta_p^2 = 0.09$).

There was a significant difference in the dedication (WE2) scores of those who resigned (M = 3.60, SD = 1.78) compared to those who stayed (M = 4.60, SD = 1.21): $t(145) = -4.32$, $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = -1.00, 95% CI: -1.46 to -0.54) has a moderate effect ($\eta_p^2 = 0.10$).

There was a significant difference in the absorption (WE3) scores of those who resigned (M = 3.86, SD = 1.43) compared to those who stayed (M = 4.59, SD = 0.97): $t(145.3) = -3.94$, $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = -0.73, 95% CI: -1.10 to -0.36) has a moderate effect ($\eta_p^2 = 0.08$). All the effect sizes in respect of individual variables as reported above support the criterion-predictive and the differential validity of the TIS-6 in the 4-month period after the survey.

There was no significant difference in the helping behaviour scores of those who resigned (M = 5.27, SD = 1.13) compared to those who stayed (M = 5.51, SD = 0.95): $t(170) = -1.565$, $p = 0.119$ (two-tailed). The difference in the means (mean difference = -0.25, 95% CI: -0.56 to 0.07) was insignificant.

There was no significant difference in the task performance of those who resigned (M = 5.51, SD = 1.07) compared to those who stayed (M = 5.76, SD = 0.93): $t(154) = -1.566$, $p = 0.120$ (two-tailed). The difference in the means (mean difference = -0.25, 95% CI: -0.57 to 0.07) was insignificant.

The data profiles of the 405 employees who resigned from the ICT company over the 4-year period *after* the survey was conducted were compared with the data profiles of 405 employees drawn randomly from the remaining sample ($n = 2024$) who stayed with the company. Independent-sample *t*-tests were conducted to compare the different variable scores of those employees who resigned versus those who stayed. The following analyses (displayed in Table 5) provide evidence that turnover intention scores can be used as a proxy for actual labour turnover.

There was a significant difference in the turnover intention scores of those employees who resigned (M = 4.41, SD = 1.42) compared to those who stayed (M = 4.03, SD = 1.30): $t(801) = -4.10$; $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = -0.39, 95% CI: -0.58 to -0.20) has a small effect ($\eta_p^2 = 0.02$).

There was a significant difference in the work-based identity scores of those who resigned (M = 4.71, SD = 1.13) and those who stayed (M = 4.99, SD = 0.99): $t(793) = 3.88$; $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = 0.29, 95% CI: 0.14 to 0.43) has a small effect ($\eta_p^2 = 0.02$).

There was a significant difference in the personal alienation scores of those who resigned (M = 4.34, SD = 1.49) and those who stayed (M = 3.89, SD = 1.34): $t(798.9) = -4.55$; $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = -0.45, 95% CI: -0.65 to -0.26) has a small effect ($\eta_p^2 = 0.02$).

There was no significant difference in the emotional exhaustion (BO1) scores of those who resigned (M = 2.73, SD = 1.57) and those who stayed (M = 2.56, SD = 1.49): $t(808) = -1.58$; $p = 0.113$ (two-tailed). The difference in the means (mean difference = -0.17, 95% CI: -0.38 to 0.04) was insignificant.

There was a significant difference in the depersonalisation (BO2) scores of those who resigned (M = 1.74, SD = 1.29) and those who stayed (M = 1.63, SD = 1.24): $t(808) = -1.22$; $p = 0.223$ (two-tailed). The difference in the means (mean difference = -0.11, 95% CI: -0.28 to -0.07) was insignificant.

There was no significant difference in the reduced personal accomplishment (BO3) scores of those who resigned (M = 1.87, SD = 1.11) and those who stayed (M = 1.81, SD = 1.00): $t(808) = -0.96$; $p = 0.339$ (two-tailed). The difference in the means (mean difference = -0.07, 95% CI: -0.22 to 0.07) was insignificant.

There was a significant difference in the vigour (WE1) scores of those who resigned (M = 4.45, SD = 1.26) and those who stayed (M = 4.71, SD = 1.16): $t(802.5) = 3.07$; $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = 0.26, 95% CI: 0.09 to 0.43) has a small effect ($\eta_p^2 = 0.01$).

TABLE 5: Independent-samples *t*-tests comparing group means (4-year period).

Variable	Equal variances (assumed or not assumed)	Levene's test for equality of variances		*t*-Test for equality of means							
		F	Sig.	*t*	*df*	Sig. (two-tailed)	Mean difference	SE difference	95% Confidence interval of the difference		Eta squared
									Lower	Upper	
Work-based identity	Assumed	7.64	0.006	3.88	808.00	0.001	0.29	0.07	0.14	0.43	–
	Not assumed	–	–	3.88	793.03	0.001	0.29	0.07	0.14	0.43	0.02*
Personal alienation	Assumed	7.31	0.007	-4.55	808.00	0.001	-0.45	0.10	-0.65	-0.26	–
	Not assumed	–	–	-4.55	798.94	0.001	-0.45	0.10	-0.65	-0.26	0.02*
Emotional exhaustion (BO1)	Assumed	1.66	0.198	-1.58	808.00	0.113	-0.17	0.11	-0.38	0.04	Not sig.
	Not assumed	–	–	-1.58	805.92	0.113	-0.17	0.11	-0.38	0.04	–
Depersonalisation (BO2)	Assumed	0.58	0.445	-1.22	808.00	0.223	-0.11	0.09	-0.28	0.07	Not sig.
	Not assumed	–	–	-1.22	806.62	0.223	-0.11	0.09	-0.28	0.07	–
Reduced personal accomplishment (BO3)	Assumed	3.72	0.054	-0.96	808.00	0.339	-0.07	0.07	-0.22	0.07	Not sig.
	Not assumed	–	–	-0.96	800.04	0.339	-0.07	0.07	-0.22	0.07	–
Turnover intention	Assumed	3.86	0.050	-4.10	808.00	0.001	-0.39	0.10	-0.58	-0.20	–
	Not assumed	–	–	-4.10	801.90	0.001	-0.39	0.10	-0.58	-0.20	0.02*
Vigour (WE1)	Assumed	8.52	0.004	3.07	808.00	0.002	0.26	0.09	0.09	0.43	–
	Not assumed	–	–	3.07	802.47	0.002	0.26	0.09	0.09	0.43	0.01*
Dedication (WE2)	Assumed	10.51	0.001	3.49	808.00	0.001	0.38	0.11	0.17	0.59	–
	Not assumed	–	–	3.49	797.92	0.001	0.38	0.11	0.17	0.59	0.01*
Absorption (WE3)	Assumed	15.19	0.000	3.57	808.00	0.001	0.31	0.09	0.14	0.48	–
	Not assumed	–	–	3.57	797.04	0.001	0.31	0.09	0.14	0.48	0.02*
Helping behaviour (H-OCB)	Assumed	0.13	0.724	0.02	808.00	0.983	0.00	0.05	-0.10	0.11	Not sig.
	Not assumed	–	–	0.02	807.98	0.983	0.00	0.05	-0.10	0.11	–
Task performance	Assumed	0.52	0.471	2.69	808.00	0.007	0.18	0.07	0.05	0.31	0.01*
	Not assumed	–	–	2.69	804.25	0.007	0.18	0.07	0.05	0.31	–

F, *F*-value; Sig., significance; *t*, *t*-value; *df*, degrees of freedom; SE, standard error; Eta squared, where the partial eta-squared of the variance strength is indicated as 0.01 (small*), 0.06 (moderate**) and 0.14 (large***) effects.
The researchers followed the guidelines of Cohen, J.W. (1988). *Statistical power analysis for the behavioral sciences*. (2nd edn.). Hillsdale: Lawrence Erlbaum, p. 284.

There was a significant difference in the dedication (WE2) scores of those who resigned (M = 4.15, SD = 1.60) and those who stayed (M = 4.55, SD = 1.44): $t(797.9) = 3.49$; $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = 0.38, 95% CI: 0.17 to 0.59) has a small effect ($\eta_p^2 = 0.01$).

There was a significant difference in the absorption (WE3) scores of those who resigned (M = 3.53, SD = 1.31) and those who stayed (M = 3.84, SD = 1.16): $t(797) = 3.57$; $p \leq 0.001$ (two-tailed). The difference in the means (mean difference = 0.31, 95% CI: 0.14 to 0.48) has a small effect ($\eta_p^2 = 0.02$).

There was no significant difference in the helping behaviour scores of those who resigned (M = 5.12, SD = 0.75) and those who stayed (M = 5.12, SD = 0.75): $t(808) = 0.02$; $p = 0.983$ (two-tailed). The difference in the means (mean difference = 0.00, 95% CI: -0.10 to 0.11) was insignificant.

There was a significant difference in the task performance of those who resigned (M = 5.70, SD = 0.99) and those who stayed (M = 5.87, SD = 0.93): $t(808) = 2.69$; $p = 0.007$ (two-tailed). The difference in the means (mean difference = 0.18, 95% CI: 0.05 to 0.31) has a small effect ($\eta_p^2 = 0.01$). All the effect sizes in respect of the individual variables reported above are small, but still significant (except where stated as insignificant) and do therefore still support the criterion-predictive and the differential validity of the TIS-6 in the 4-year period after the survey.

The independent sample *t*-tests that were conducted to compare the different variable scores of those employees who resigned and those who stayed differed significantly in nine of the 11 *t*-tests (over a 4-month period after the initial survey) and seven of the 11 *t*-tests (after a 4-year period after the initial survey). These results confirm the differential validity of the turnover intention scale over these two time periods, as well as its use as a proxy for actual labour turnover.

Ethical considerations

All ethical protocols of the institution were observed and adhered to in conducting this research.

Discussion

Despite the fact that turnover intention scales are frequently used as criterion variables, little is known about their metric properties. No previous studies were conducted to assess the reliability and the validity of the shortened TIS-6, besides the studies of Jacobs (2005) and Martin (2007) that used a longer version of the scale, but did not investigate the relationship with actual turnover. The research objectives of the present study were therefore to evaluate the reliability, the factorial, criterion-predictive and differential validity of the TIS-6 in measuring turnover intentions or predicting actual turnover. This study will add to the validity and reliability information of the TIS, in general, and the TIS-6, specifically, and will contribute towards establishing its credibility for future use in the scientific community.

Summary of key findings

An exploratory factor analysis (EFA) using principal axis factoring and varimax rotation established that the TIS-6 is a one-dimensional construct, thereby confirming the construct (more specifically the factorial validity – cf. Allen & Yen, 1979) of the scale. The item loadings (ranging between 0.73 and 0.81) on the single extracted factor and the overall reliability ($\alpha = 0.80$) of the TIS-6 is on an acceptable level, thereby confirming the reliability of the scale. It was also established that scores of the TIS significantly relate to all other variables in this study, namely work engagement, work-based identity, burnout, helping behaviour, work alienation and task performance. These findings confirm previous research conducted by Bakker and Demerouti (2006), Bakker *et al.* (2004), Demerouti *et al.* (2000), Schaufeli and Bakker (2001) and Schaufeli and Bakker (2004), mainly within the JD-R framework that linked turnover intention to work engagement and burnout. The relationships between turnover intention and work alienation and work-based identity have not been reported on previously.

In order to establish the criterion-predictive validity of the scale the TIS-6, mean score differences for those who resigned were compared to a randomly selected group from the sample of those who stayed with the organisation (respectively for the 4-month and 4-year periods after the survey). The obtained TIS-6 mean score differences were significant and the effect size was large (for the 4-month period), which suggest that the TIS-6 could effectively predict actual turnover. These findings confirm previous research conducted by Byrne (2005), Hendrix *et al.* (1998) and Steensma *et al.* (2004) that turnover intention and actual turnover are positively related. It also confirms the research by Jaros *et al.* (1993), Muliawan *et al.* (2009) and Tett and Meyer (1993) that turnover intentions can be used as a proxy for actual turnover. The criterion-predictive validity of actual turnover of the TIS-6 was hereby established.

In order to establish the differential validity of the scale, independent-sample *t*-tests were conducted in respect of the other variables to establish whether the mean scores of those employees who resigned ($n = 84$) and those who stayed ($n = 88$) differed significantly. More specifically, significant mean score differences (independent-sample *t*-tests) were found in eight of the 10 remaining variables (work-based identity, personal alienation, three work engagement dimensions and three burnout dimensions), with effect sizes ranging between moderate and small (in the 4-month period after the survey).

The same procedure was repeated on a data set in a 4-year period after the survey where scores of leavers ($n = 405$) and stayers ($n = 405$) were compared in respect of the same variables. More specifically, significant mean score differences were found in six of the 10 remaining variables (work-based identity, personal alienation, three work engagement dimensions and task performance), but in this case all the effect sizes were small. No previous research could shed light on these longitudinal findings over both a short term and a medium term.

These results (both on a 4-month and a 4-year period after the survey) confirm the differential validity of the TIS-6. These results show that the TIS-6 is a reliable and valid measure to assess the construct turnover intention and to validly predict actual turnover behaviour, as was suggested by Jaros *et al.* (1993) and Muliawan *et al.* (2009). These results also confirm the differential validity of the TIS-6 as well as its use as a proxy for actual labour turnover.

Practical implications and recommendations

Turnover intention in this study significantly relates to a number of other variables outside the JD-R framework, such as work-based identity, personal alienation, the three dimensions of work engagement (vigour, dedication and absorption) and the three dimensions of burnout (emotional exhaustion, depersonalisation, reduced personal accomplishment), and not only to the suggested chain of resources and demands as suggested by Bakker and associates (Bakker & Demerouti, 2006; Bakker *et al.*, 2004; Demerouti *et al.*, 2000; Schaufeli & Bakker, 2001, 2004). These findings, in combination with the different models proposed by the Du Plooy and Roodt (2010) study, Jacobs (2005), Lee and Mitchell (1994), as well as Petriglieri's (2011) findings, necessitate a reappraisal and a reconceptualisation of models that portray individuals' cognitive processes before leaving or exiting the organisation. Petriglieri's model, especially within an identity framework, shows potential in this regard. The potential buffering role that psychological capital facets (Sweetman & Luthans, 2010) may play in these cognitive processes also warrants further research.

The findings of this study further suggest that the TIS-6 can be used as a reliable and valid measure to assess turnover intention. The TIS-6 can therefore be used for business applications and academic research to validly and reliably assess turnover intention or to predict actual turnover.

Limitations and suggestions for future research

A possible limitation of the study is that the TIS-6 was only applied in a single organisational setting. However, a strength of the study was that it yielded a fairly large sample representing most of the different cultural groups in the South African work context. Besides the suggestion of reappraising and reconceptualising the cognitive processes involved before individuals are making the decision to leave the organisation, another suggestion for future research may be to compare the scores of the TIS-6 across different cultural groups in order to test for possible differential item functioning and for measurement invariance. There is a possibility that cultural groups may respond differently to TIS-items and to antecedents leading to turnover decisions. A third suggestion may be to investigate the role of psychological capital facets as possible buffers between contextual job demands and turnover intentions.

Conclusion

This study set out to determine whether the TIS-6 is a reliable and valid instrument to assess turnover intentions and to predict actual turnover. The results of the study confirm the scale's reliability, as well as its factorial, criterion-predictive and differential validity. The research objectives of the study are hereby achieved.

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Competing interests

The authors declare that they have no financial or personal relationships which may have inappropriately influenced them in writing this article.

Authors' contributions

F.C.B. (University of Johannesburg) conducted the research as a part of this doctoral study. G.R. (University of Johannesburg) was the supervisor for this study. G.R. wrote the largest portion of this article, whilst F.C.B conducted the statistical analyses on which this article reported.

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