

# Biographical and demographical variables as moderators in the prediction of turnover intentions

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PO Box 524, Auckland Park  
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**Dates:**

Received: 29 Aug. 2012

Accepted: 29 Oct. 2012

Published: 04 Apr. 2013

**How to cite this article:**

Du Plooy, J., & Roodt, G. (2013). Biographical and demographical variables as moderators in the prediction of turnover intentions. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde*, 39(1), Art. #1070, 12 pages. <http://dx.doi.org/10.4102/sajip.v39i1.1070>

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**Orientation:** The aim of the study was to explore the possible moderation effects of biographical and demographical variables on a prediction model of turnover intention (TI).

**Research purpose:** The main purpose of the study was to determine how biographical and demographical variables have an impact on predictors of turnover intentions.

**Motivation for the study:** Twenty-first century organisations 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 sample ( $n = 2429$ ). Data were collected from a large South African Information and Communication Technologies (ICT) sector company ( $N = 23\ 134$ ).

**Main findings:** The results of the study confirmed significant moderation effects regarding race, age, and marital status in the prediction equations of TIs.

**Practical and managerial implications:** Practical implications of the study suggested increased understanding of workforce diversity effects within the human resource (HR) value chain, with resultant evidence-based, employee retention strategies and interventions. Issues concerning talent management could also be addressed.

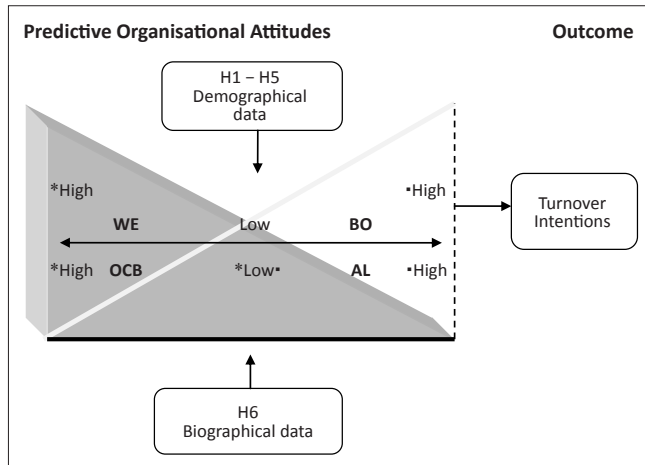
**Contribution and value-add:** The study described in this article took Industrial/Organisational (I/O) psychological concepts and linked them in unique combinations to establish better predictive validity of a more comprehensive turnover intentions model.

## Introduction

Studies reporting results on reasons why employees choose to leave or stay with a particular organisation (Bothma & Roodt, 2012; Du Plooy & Roodt, 2010; Greyling & Stanz, 2010; Griffeth, Hom & Gaertner, 2000; Kotzé & Roodt, 2005; Mendes & Stander, 2011) are gaining importance and most of them focus on a set of negative consequences associated with employee turnover (Bluedorn, 1982; Greyling & Stanz, 2010; Mobley, 1982; Roodt & Bothma, 1997). Corporate sustainability issues are gaining momentum and an example of this is the behaviour of the modern and informed investor who no longer assesses the quality of the organisation at present, but the organisation's risk management and whether it has established sustainability strategies pertinent to its business (King III Report, 2009). As a result, employee turnover and its associated expenses for organisations are a key challenge (Bluedorn, 1982; Greyling & Stanz, 2010; Roodt & Bothma, 1997), specifically within a triple bottom line framework, which binds organisations to corporate strategies focused on profit, people and planet (King III Report, 2009).

The role of biographical and demographical variables in the prediction of TI remains unclear as Industrial and Organisational psychological literature provides very little substantial links between the predictive model of TIs (in the case of this study work engagement (WE), burnout (BO), organisational citizenship behaviour (OCB), work alienation (AL) and biographical and demographical variables. For this reason, it was strongly suggested in an earlier study by Du Plooy (2010) that the possible moderating effects of biographical and demographical variables in predictive models are tested. The suggested moderating effects of biographical and demographical variables in the prediction of TIs are depicted in Figure 1.

It is evident from Figure 1 that variables included in this model have not been related to turnover intentions in previous studies. A more comprehensive or complete understanding of factors contributing to TIs may result in more effective management strategies to curb employee turnover and HR risks as this contributes towards sustainability. The King III Report (2009)



H1, Hypothesis 1; H5, Hypothesis 5; H6, Hypothesis 6; WE, Work engagement; OCB, Organisational citizenship behaviour; BO, Burnout; AL, Work alienation.

**FIGURE 1:** Research model of the predictive relationships with turnover intentions.

clearly states that boards of directors are responsible for the risk management and decision-making in terms of the triple bottom line – profit, people, planet – and to take into account the needs of future generations. Therefore, if employee turnover is better managed, people risks are reduced.

The main objective of the research is to determine whether certain biographical and demographical variables have a moderator<sup>1</sup> effect on the predictive model of TIs. The predictive model of TI has been substantiated, that is, work engagement and organisational citizenship behaviour were negatively related to TI, and burnout and work alienation were positively related to TI (Du Plooy & Roodt, 2010). It is on this predictive model of TIs that the possible moderator effects will be tested.

## A review of the literature

Several authors (Bakker & Demerouti, 2006; Jacobs, 2005; Lee & Mitchell, 1994; Mobley, 1982; Morrell, Loan-Clarke, Arnold & Wilkinson, 2008; Schaufeli & Bakker, 2004; Zeffane, 1994) proposed and/or tested different predictive models for explaining TIs. These models have little in common and are based on different sets of assumptions and conceptualisations. The model of the current study (refer to Figure 1) follows a similar reasoning than those of Bakker and Demerouti (2006) and Schaufeli and Bakker (2004) where engagement is negatively related to turnover intentions and burnout is positively related to TIs.

In the two sections that follow, the moderating role of different biographical and demographic variables will be explained, based on existing literature. The biographical variables are gender, race groups, age, marital status and education level, whilst only one demographical variable, namely job level will be discussed.

*Biographical variables* as possible moderators in the prediction of TIs will now be examined. It is theorised that *genders* differ

1.A moderator is defined as "... a qualitative [e.g. gender] or quantitative [e.g. job level] variable which affects the direction and/or strength of the relation' between a predictor variable and an outcome or predicted variable (Baron & Kenny, 1986, p. 1174).

in how they respond to stimuli that may lead to different withdrawal behaviour patterns. Despite the fact that men and women share similar psychological structures and developmental processes during identity formation (Kroger, 1997), their spheres of work differ and are not rated as equal (Béteille, 2002). Several studies support moderator effects of gender in the prediction of TI (Almer & Kaplan, 2002; Burke, Koyuncu & Fiksenbaum, 2008; Cotton & Tuttle, 1986; Coyne & Ong, 2007; Harris, Andrews & Kacmar, 2007; Karatepe & Aleshinloye, 2009; Zhen & Francesco, 2000). Men reported higher levels of depersonalisation than women (Almer & Kaplan, 2002), resulting in the first research hypothesis to be tested.

**Hypothesis 1:** Gender moderates in the prediction of turnover intentions.

It is generally accepted that different culture groups follow different acculturation processes. As a consequence, different culture groups (including *race groups*) attach different values to work (Béteille, 2002). It is argued that the previously disadvantaged groups in South Africa show high job turnover (Jacobs, 2005; Thomas, 2002; Vallabh & Donald, 2001) in an attempt to source the best possible positions and benefits. Another point of view is raised by Zatzick, Elvira, and Cohen (2003) who argued that employees belonging to the larger race group in organisations will tend to stay, owing to the supportive environment created by race group size. However, contradicting research results exist for the relationship between race and the predictive model of TI. In a study investigating possible antecedents of TIs, neither age, education levels, tenure, nor race had any significant impact (Fang, 2001). On the other hand, opposite results were found by Harris *et al.* (2007). Both gender and age were significantly and negatively linked to TIs, but not race. These contradictory findings guided the researchers to the second research hypothesis to be tested.

**Hypothesis 2:** Race moderates in the prediction of turnover intentions.

It is generally assumed that different *age* groups respond differently to stimuli, based on generational or age differences. Cotton and Tuttle (1986) in their meta-analysis of employee turnover, found that age was negatively related to employee turnover. Since then, other research findings on the relationship between age and the predictive model of TI showed that age relates negatively and significantly to an employee's intentions to vacate his or her position (Cropanzo, Rupp & Byrne, 2003; Jacobs, 2005; Harris *et al.*, 2007; Karatepe & Aleshinloye, 2009; Rothrauff, Abraham, Bride & Roman, 2011; Weisberg & Kirschenbaum, 1991), resulting in the third research hypothesis to be investigated.

**Hypothesis 3:** Age moderates in the prediction of turnover intentions.

It is theorised that *marital status* may have a differentiating effect on how people choose to react in a particular situation,

based on their different responsibilities and commitments. Cotton and Tuttle (1986) in their study found that married employees are less likely to resign than unmarried employees, because marital status and the accompanying responsibilities can be viewed as a constraint to resign (Chompookum & Derr, 2004). Results on the relationship between marital status and the predictive model of TI found that employees with a spouse and/or children experiencing work-family conflict, advance more easily into organisational attitudes such as job satisfaction and turnover intentions than their single, childless colleagues (Huffman, Youngcourt, Payne & Castro, 2008). Herewith, the fourth research hypothesis which was tested.

**Hypothesis 4:** Marital status moderates in the prediction of turnover intentions.

It is theorised that people with different *education levels* respond differently to particular situations, based on employment conditions and their own perceived market value. Cotton and Tuttle (1986) found that education level is positively related to employee turnover and possibly for the reason that Thomas (2002) highlighted, namely the better qualified people or candidates get the best job opportunities. However, Mauno, Kinnunen, and Ruokolainen (2007) found that the work engagement subcomponent *dedication* '...was more often experienced among professionals than non-professionals' (p. 164). The findings of Denton, Newton, and Bower (2008) are in line with those of Mauno *et al.* (2007) and stated that the group with additional professional qualifications reported higher WE and lower BO scores. Therefore, the highest educational levels indicated having an effect on the predictive model of TI. These findings guided the researchers to the fifth research hypothesis to be tested.

**Hypothesis 5:** Education level moderates in the prediction of turnover intentions.

The two *demographical variables*, job level and geographic region, as possible moderators of predictor variables in the prediction of TI will be examined next. It is argued that *job level* (which normally co-varies with age, educational level and tenure) may have a differential effect on how people respond to job-related stimuli. Chiu, Chung, Wu, and Ho (2009) found that employees in jobs with high job demands combined with low job control report turnover intentions more frequently. Findings showed that lower organisational levels relate negatively to an employee's intentions to vacate his position (Weisberg & Kirschenbaum, 1991), whilst the results of Almer and Kaplan (2002) prove to be dissimilar. Organisational level has been related to BO (Almer & Kaplan, 2002) and job position has been shown to be significantly related to WE (Kim, Shin & Swanger, 2009). These incongruent findings guided the researchers to the second last research hypothesis to be tested.

**Hypothesis 6:** Job level moderates in the prediction of turnover intentions.

It is hypothesised that *geographic region* may have a differential effect on people's response to job-related stimuli. There are a host of possible reasons why people may be committed to locating in a particular region, such as owning property, availability of educational facilities, cost of living or even recreational facilities. No literature could be found that reported on moderation effects within this particular theoretical framework. The lack of literature guided the researchers to formulate the last hypothesis of this study.

**Hypothesis 7:** Geographic region moderates in the prediction of turnover intentions.

The abovementioned hypotheses can be graphically depicted as in Figure 1 above. The predictive model of TIs, that is, the WE and BO continuum and the constructs OCB and AL (Du Plooy & Roodt, 2010), depicts that both biographic (Hypothesis 1 to Hypothesis 5) and demographic variables (Hypothesis 6 to Hypothesis 7) may moderate this relationship.

## Research design

### Research approach

An SDA was performed on a subsection of the research in progress of Bothma and de Braine's cross-sectional field survey data. The data analyses followed a correlational and *ex post facto* approach.

### Research method

A more detailed discussion of the research method can be found in an earlier article by Du Plooy and Roodt (2010, pp. 5–7) on which this section is based.

**TABLE 1:** Biographical and demographic characteristics of respondents ( $n = 2429$ ).

Variable	Category	<i>f</i>	%
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	9.9
Highest academic qualification	Matriculation 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

*f*, Frequency

†, Coloured is a South African term to describe people of mixed racial descent.

### Research respondents and sampling

A heterogeneous work force of a large South African ICT sector company, consisting of operational and specialist employees up to middle management, represented the target population ( $N = 23\ 134$ ) for this study. A census-based sampling approach was followed to ensure complete enumeration of the target population. The respondent sample ( $n = 2429$ ) yielded a response rate of about 11%.

In Table 1 the frequency and percentages of the respondents in relation to their biographic and demographic characteristics were 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 instruments used in the original study will be briefly discussed below.

**Utrecht Work Engagement Scale (UWES-17).** The 17-item version of the UWES was used to measure work engagement and consists of three subscales labelled Vigour (VI), Dedication (DE), and Absorption (AB) (Schaufeli & Bakker, 2003; Schaufeli, Salanova, González-Romá & Bakker, 2002). This version of the UWES was also successfully used in other work engagement research reported in the literature (Bakker, Schaufeli, Leiter & Taris, 2008; Hakonen, Bakker & Schaufeli, 2006; Hakonen, Schaufeli & Ahola, 2008; Simpson, 2008). The current study reported a Cronbach alpha coefficient of .91 for the UWES-17.

**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) reported on a wide range of psychometric analyses on the MBI, which confirmed the reliability and validity of the instrument. The current study reported Cronbach alpha coefficients of .89 for emotional exhaustion .70 for depersonalisation and .71 for reduced personal accomplishment *OCB (helping behaviour questions)*. Nine helping behaviour questions were used to measure OCB, which consisted of five items of the Helping Behaviour Scale (Van Dyne & LePine, 1998) and four items from the Altruism dimension of the Citizenship Behaviour Scale (Smith, Organ & Near, 1983). A Cronbach alpha coefficient of .86 for this scale was reported in the current study.

**Alienation Scale.** The five-item Alienation Scale (Banai, Reisel & Probst, 2004) is based on the scale developed by

Korman, Wittig-Berman and Lang (1981), which was also used in a later study by Banai and Reisel (2007). Banai and Reisel reported a Cronbach alpha of .80 on the scale. The Cronbach alpha coefficient for AL in the current study was .81.

**Turnover Intentions Scale.** The Turnover Intentions Scale was developed by Roodt (2004) as a measure for assessing employees' intentions of either staying with, or leaving an organisation. Two earlier studies (Jacobs, 2005; Martin, 2007) proved Roodt's (2004) questionnaire to be both reliable ( $\alpha = .913$  and  $\alpha = .895$  respectively) and factually valid. A Cronbach alpha coefficient of .80 for TIs was reported in the current study.

For the current study, the authors focused on the data collected from the *biographical and demographical forms*. These were obtained by using a form contained in Bothma and de Braine's self-developed, web-based survey application, devoted to related questions and information available on the organisation's register. 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).

### Research procedure

Du Plooy and Roodt (2010, p. 6) described the research procedure of the cross-sectional survey as follows: a research invitation was emailed to each employee within the sample, explaining the purpose and significance of the study and guaranteeing confidentiality. A web-link was added to each invitation, which provided direct access to a web-based survey application. 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 (version 18.0) programme was used for the statistical analyses. The inferential statistics performed included the use of ANOVAs followed by moderated multiple regression analyses (Pallant, 2007).

## Results

In this study it was postulated that the predictive model of TI was moderated by certain biographical and demographical variables. The predictive model of this study was based on the regression equation of the prediction of TI [ $TI = 1.836 + 0.495AL + 0.318BO - 0.180WE + 0.091OCB$ ] (du Plooy & Roodt, 2010) and moderator effects were tested within this framework.

## Moderator analyses of biographical variables

The hierarchical, multiple regression method was used to test whether gender, race, age, marital status, and highest academic qualification acted as possible moderators in the prediction of TI. (Frazier, Tix & Barron, 2004) suggested that multiple regressions were the preferred method for the testing of moderator effects. Firstly, ANOVAs were conducted on each of the 5 models for each variable presented, however as a result of space limitations these tables were not provided. The *F* statistics of each of the models were statistically significant ( $p \leq .001$ ). A linear relationship between each of the predictor variables of each model and TI therefore exists. The multiple correlation coefficients (*R*) between the predictor variables of Model 5 and the predicted variable (TI) are presented below in Table 2 to Table 6. The model summaries reflect the inclusion of the biographical variables *gender, race, age, marital status and highest academic qualification* and their respective categories, in the multiple regression model of TI. The regression coefficients of Model 5 were provided and the variance each predictor variable contributed to the prediction of TI were shown, when the variance explained by the other variables in the model was controlled. The statistical parameters of gender, race, age, marital status, and highest academic qualification in Table 2 to Table 6 were used to formulate different equations to predict TI. Table 2 presents the possible moderation effect of *gender* on the other variables.

From the ANOVA analysis it follows that the regression model significantly predicted turnover intention,  $F(9, 2419) = 399.801, p \leq .001$ . The proportion variance explained ( $R^2$ ) for the model was .598 and adjusted  $R^2$  was .596. It is clear from Table 2 that there were statistically significant main effects for the different individual predictor variables WE, BO, OCB and AL (respectively  $t = -7.614, p \leq .001$ ;  $t = 11.534, p \leq .001$ ;  $t = 4.769, p \leq .001$ ;  $t = 23.149, p \leq .001$ ) and the gender category female ( $t = -2.217, p = .027$ ). However, no significant interaction terms were found between gender groups and any of the predictor variables in the model. The data did not support Hypothesis 1, which states that gender moderates the prediction of turnover intentions.

Table 3 presents the possible moderation effect of *race group* on the other variables in the model.

From the ANOVA analysis it followed that the regression model significantly predicted turnover intention,  $F(19, 2409) = 192.788, p \leq .001$ . The proportion variance explained ( $R^2$ ) for the model was .603 and adjusted  $R^2$  was .600. It was evident from Table 3 that there were statistically significant main effects regarding the individual predictor variables WE, BO, OCB and AL (respectively  $t = -6.204, p \leq .001$ ;  $t = 9.750, p \leq .001$ ;  $t = 3.259, p \leq .001$ ;  $t = 13.445, p \leq .001$ ), but none for the different race group categories. However, race group categories did have several significant interaction terms in the model, namely between WE and the White group ( $t = 2.172, p = .030$ ); BO and the White group ( $t = -2.690, p = .007$ ); BO and the Coloured group ( $t = -2.060, p = .039$ ); BO and the Asian/Indian group ( $t = -2.650, p = .008$ ); OCB and the Coloured group ( $t = -2.251, p = .024$ ); and AL and the White group ( $t = 3.957, p \leq .001$ ). Engagement and alienation levels were therefore dependent on whether you belonged to the White group and the level of burnout, or whether you belonged to the Coloured or Asian/Indian group in the prediction of TIs. The level of OCB was dependent on the Coloured group only when predicting TIs. Hypothesis 2, which states that race moderates the prediction of turnover intentions, was therefore supported by the data.

Table 4 presents the possible moderation effects between *age groups* and the other variables.

From the ANOVA analysis it followed that the regression model significantly predicted turnover intention,  $F(19, 2409) = 192.474, p \leq .001$ . The proportion variance explained ( $R^2$ ) for the model was .603 and adjusted  $R^2$  was .600. As can be seen from Table 4 there were statistically significant main effects regarding the individual predictor variables WE, BO, OCB and AL (respectively  $t = -3.258, p \leq .001$ ;  $t = 5.390, p \leq .001$ ;  $t = 2.912, p = .004$ ;  $t = 10.706, p \leq .001$ ) and one age category (>50 years) ( $t = -2.730, p = .006$ ), but there was only one significant interaction term,

**TABLE 2:** Moderated multiple regression in terms of gender group.

Model 5	Unstandardised Coefficients		Standardised Coefficients			<i>R</i>	$R^2$	Adjusted $R^2$
	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>t</i>	<i>p</i>			
(Constant)	4.234	0.022	-	191.938	$\leq .001^*$	-	-	-
WE	-0.195	0.026	-0.178	-7.614	$\leq .001^*$	-	-	-
BO	0.335	0.029	0.228	11.534	$\leq .001^*$	-	-	-
OCB	0.119	0.025	0.084	4.769	$\leq .001^*$	-	-	-
AL	0.487	0.021	0.517	23.149	$\leq .001^*$	-	-	-
Female	-0.081	0.036	-0.029	-2.217	$= .027^{**}$	-	-	-
Female $\times$ WE	0.027	0.041	0.016	0.672	$= .501$	-	-	-
Female $\times$ BO	-0.049	0.049	-0.020	-1.007	$= .314$	-	-	-
Female $\times$ OCB	-0.064	0.041	-0.027	-1.568	$= .117$	-	-	-
Female $\times$ AL	0.021	0.034	0.014	0.619	$= .536$	-	-	-
Gender group	-	-	-	-	-	0.773	0.598	0.596

*B*, regression coefficient; *SE*, standard errors; *t*, *t*-test; *p*, probability value; *R*, multiple correlation coefficients;  $R^2$ , proportion variance explained, WE, Work engagement; BO, Burnout; OCB, Organisational citizenship behaviour; AL, Work alienation.

Turnover intention is the dependent variable.

\*, Statistically significant ( $p \leq .001$ ); \*\*, Statistically significant ( $p \leq .05$ )

namely between OCB and >50 years ( $t = -2.802, p = .005$ ) when predicting TIs. Organisational citizenship behaviour level was therefore dependent on whether a person belonged to the age group of 50 and above when predicting TIs. Hypothesis 3, which states that age moderates the prediction of turnover intention was therefore supported by the data.

Table 5 presents the possible moderation effects of *marital status* and other variables.

From the ANOVA analysis it followed that the regression model significantly predicted turnover intention,  $F(14, 2414) = 257.847, p \leq .001$ . The proportion variance explained ( $R^2$ )

**TABLE 3:** Moderated multiple regression in terms of race group.

Model 5	Unstandardised Coefficients		Standardised Coefficients			R	R <sup>2</sup>	Adjusted R <sup>2</sup>
	B	SE	Beta	t	p			
(Constant)	4.250	0.035	-	191.938	≤ .001*	-	-	-
WE	-0.231	0.037	-0.211	-6.203	≤ .001*	-	-	-
BO	0.444	0.046	0.303	9.750	≤ .001*	-	-	-
OCB	0.126	0.039	0.089	3.259	≤ .001*	-	-	-
AL	0.407	0.030	0.432	13.445	≤ .001*	-	-	-
White	-0.065	0.045	-0.024	-1.455	= .146	-	-	-
Coloured†	0.033	0.057	0.009	0.580	= .562	-	-	-
Asian or Indian	-0.103	0.062	-0.026	-1.655	= .098	-	-	-
WE × White	0.104	0.048	0.065	2.172	= .030**	-	-	-
WE × Coloured†	0.101	0.064	0.035	1.581	= .114	-	-	-
WE × Asian or Indian	-0.070	0.067	-0.022	-1.052	= .293	-	-	-
BO × White	-0.155	0.058	-0.071	-2.690	= .007**	-	-	-
BO × Coloured†	-0.156	0.076	-0.041	-2.060	= .039**	-	-	-
BO × Asian or Indian	-0.211	0.079	-0.053	-2.650	= .008**	-	-	-
OCB × White	-0.033	0.048	-0.016	-0.679	= .497	-	-	-
OCB × Coloured†	-0.144	0.064	-0.039	-2.251	= .024**	-	-	-
OCB × Asian or Indian	0.048	0.071	0.012	0.685	= .494	-	-	-
AL × White	0.158	0.040	0.110	3.957	= .001**	-	-	-
AL × Coloured†	0.085	0.052	0.037	1.626	= .104	-	-	-
AL × Asian or Indian	0.602	0.054	0.024	1.130	= .258	-	-	-
Race group	-	-	-	-	-	0.777	0.603	0.600

B, regression coefficient; SE, standard errors; t, t-test; p, probability value; R, multiple correlation coefficients; R<sup>2</sup>, proportion variance explained, WE, Work engagement; BO, Burnout; OCB, Organisational citizenship behaviour; AL, Work alienation.

Turnover intention is the dependent variable.

†, Coloured is a South African term to describe people of mixed racial descent.

\*, Statistically significant ( $p \leq .001$ ); \*\*, Statistically significant ( $p \leq .05$ )

**TABLE 4:** Moderated multiple regression in terms of age group.

Model 5	Unstandardised Coefficients		Standardised Coefficients			R	R <sup>2</sup>	Adjusted R <sup>2</sup>
	B	SE	Beta	t	p			
(Constant)	4.226	0.054	-	77.982	≤ .001*	-	-	-
WE	-0.173	0.053	-0.158	-3.258	≤ .001*	-	-	-
BO	0.359	0.067	0.244	5.390	≤ .001*	-	-	-
OCB	0.150	0.052	0.107	2.912	≤ .004*	-	-	-
AL	0.480	0.045	0.510	10.706	≤ .001*	-	-	-
30–39	0.055	0.061	0.020	0.900	= .368	-	-	-
40–49	-0.051	0.062	-0.018	-0.820	= .412	-	-	-
50 and over	-0.209	0.076	-0.051	-2.730	= .006*	-	-	-
WE × 30–39	-0.025	0.061	-0.015	-0.402	= .688	-	-	-
WE × 40–49	0.021	0.063	0.011	0.333	= .739	-	-	-
WE × 50 and over	0.020	0.082	0.006	0.240	= .810	-	-	-
BO × 30–39	-0.010	0.077	-0.004	-0.133	= .894	-	-	-
BO × 40–49	-0.060	0.077	-0.025	-0.780	= .436	-	-	-
BO × 50 and over	-0.094	0.093	-0.023	-1.010	= .313	-	-	-
OCB × 30–39	-0.033	0.060	-0.015	-0.554	= .580	-	-	-
OCB × 40–49	-0.076	0.061	-0.031	-1.242	= .214	-	-	-
OCB × 50 and over	-0.220	0.078	-0.052	-2.802	= .005**	-	-	-
AL × 30–39	-0.016	0.052	-0.010	-0.304	= .761	-	-	-
AL × 40–49	0.015	0.053	0.009	0.291	= .771	-	-	-
AL × 50 and over	0.067	0.065	0.026	1.026	= .305	-	-	-
Age group	-	-	-	-	-	0.776	0.603	0.600

B, regression coefficient; SE, standard errors; t, t-test; p, probability value; R, multiple correlation coefficients; R<sup>2</sup>, proportion variance explained, WE, Work engagement; BO, Burnout; OCB, Organisational citizenship behaviour; AL, Work alienation.

Turnover intention is the dependent variable.

\*, Statistically significant ( $p \leq .001$ ); \*\*, Statistically significant ( $p \leq .05$ )

TABLE 5: Moderated multiple regression in terms of marital status.

Model 5	Unstandardised Coefficients		Standardised Coefficients			R	R <sup>2</sup>	Adjusted R <sup>2</sup>
	B	SE	Beta	t	p			
(Constant)	4.185	0.039	-	107.743	≤ .001*	-	-	-
WE	-0.159	0.040	-0.145	-3.997	≤ .001*	-	-	-
BO	0.414	0.049	0.282	8.364	≤ .001*	-	-	-
OCB	0.108	0.039	0.076	2.750	≤ .006**	-	-	-
AL	0.433	0.033	0.460	12.988	≤ .001*	-	-	-
Married and cohabiting	0.039	0.044	0.013	0.876	= .381	-	-	-
Divorced or separated or widowed	-0.058	0.068	-0.013	-0.846	= .398	-	-	-
WE × Married and cohabiting	-0.039	0.047	-0.029	-0.831	= .406	-	-	-
WE × Divorced or separated or widowed	0.058	0.073	0.016	0.790	= .430	-	-	-
BO × Married and cohabiting	-0.127	0.057	-0.072	-2.228	= .026**	-	-	-
BO × Divorced or separated or widowed	-0.088	0.087	-0.019	-1.043	= .297	-	-	-
OCB × Married and cohabiting	-0.025	0.046	-0.015	-0.545	= .586	-	-	-
OCB × Divorced or separated or widowed	0.009	0.077	0.002	0.110	= .912	-	-	-
AL × Married and cohabiting	0.072	0.039	0.063	1.854	= .064	-	-	-
AL × Divorced or separated or widowed	0.152	0.061	0.051	2.476	= .013**	-	-	-
Marital status	-	-	-	-	-	0.774	0.599	0.597

B, regression coefficient; SE, standard errors; t, t-test; p, probability value; R, multiple correlation coefficients; R<sup>2</sup>, proportion variance explained, WE, Work engagement; BO, Burnout; OCB, Organisational citizenship behaviour; AL, Work alienation. Turnover intention is the dependent variable.

\*, Statistically significant ( $p \leq .001$ ); \*\*, Statistically significant ( $p \leq .05$ )

for the model was .599 and adjusted  $R^2$  was .597. It is evident from Table 5 that there were statistically significant main effects regarding the individual predictor variables WE, BO, OCB and AL (respectively  $t = -3.997, p \leq .001$ ;  $t = 8.364, p \leq .001$ ;  $t = 2.750, p = .006$ ;  $t = 12.988, p \leq .001$ ), but not for any of the marital status categories. Two significant interaction terms were found, namely between BO and married or cohabiting ( $t = -2.228, p = .026$ ) and AL and divorced or separated ( $t = 2.476, p = .013$ ). These findings therefore suggested that the level of burnout was dependent on whether a person was married or cohabiting and the level of alienation on whether a person was divorced or separated. Hypothesis 4, which states that marital status moderates the prediction of turnover intentions was therefore supported by the data.

Table 6 presents possible moderation effects between *education levels* categories and other variables in the model.

From the ANOVA analysis it followed that the regression model significantly predicted turnover intention,  $F(19, 2409) = 191.681, p \leq .001$ . The proportion variance explained ( $R^2$ ) for the model was .602 and adjusted  $R^2$  was .599. It is evident from Table 6 that there were statistically significant main effects regarding the individual predictor variables WE, BO, OCB and AL (respectively  $t = -6.207, p \leq .001$ ;  $t = 7.875, p \leq .001$ ;  $t = 3.079, p = .002$ ;  $t = 19.695, p \leq .001$ ) and the academic qualification level categories post-school certificate or diploma ( $t = 2.461, p = .014$ ); national or higher diploma ( $t = 3.307, p \leq .001$ ) and bachelor's degree or its equivalent ( $t = 2.567, p = .010$ ), but that there were no significant interaction effects between academic qualification categories

and the predictor variables in the model. The data therefore did not support Hypothesis 5, which states that academic qualification moderates the prediction of turnover intentions.

### Moderator analyses of demographical variables

As in the case of the first group of hypotheses, a (similar) hierarchical multiple regression method was used to test whether job level and geographical region acts as a moderator in the prediction of TI. Stating the procedure briefly, ANOVAs were conducted on each of the 5 models for the variable and significant levels for the  $F$  statistics ( $p \leq .001$ ) were obtained for each of the models, suggesting that a linear relationship between the predictor variable and TI did exist. The correlation coefficients ( $R$ ) between the predictor variable of Model 5 and the predicted variable (TI) were presented. The model summaries presented reflect the inclusion of the demographical variables *job level* and *geographical region* and their respective categories, in the multiple regression models of TI. The regression coefficients of Model 5 will be provided in the next two tables (Table 7 to Table 8) as well as the variance each predictor variable contributed to prediction of TI. Table 7 below shows the possible moderation effects of job level and other variables in the model.

From the ANOVA analysis it followed that the regression model significantly predicted turnover intention,  $F(14, 2414) = 256.741, p \leq .001$ . The proportion variance explained ( $R^2$ ) for the model was .598 and adjusted  $R^2$  was .596. As can be seen from Table 7 the individual predictor variables WE, BO and AL (respectively  $t = -3.828, p \leq .001$ ;  $t = 5.754, p \leq .001$ ;  $t = 12.217, p \leq .001$ ) had statistically significant main effects, but there were no significant interaction terms

**TABLE 6:** Moderated multiple regression in terms of educational levels.

Model 5	Unstandardised Coefficients		Standardised Coefficients			R	R <sup>2</sup>	Adjusted R <sup>2</sup>
	B	SE	Beta	t	p			
(Constant)	4.120	0.028		149.736	≤ .001*	-	-	-
WE	-0.185	0.030	-0.169	-6.207	≤ .001*	-	-	-
BO	0.288	0.037	0.196	7.875	≤ .001*	-	-	-
OCB	0.093	0.030	0.066	3.079	≤ .002*	-	-	-
AL	0.501	0.025	0.533	19.695	≤ .001*	-	-	-
Post-school certificate or diploma	0.118	0.048	0.035	2.461	≤ .014*	-	-	-
National or higher diploma	0.144	0.043	0.047	3.307	≤ .001*	-	-	-
Bachelor's degree or equivalent or more	0.149	0.058	0.037	2.567	≤ .010*	-	-	-
WE × Post-school certificate or diploma	0.013	0.054	0.005	0.248	= .804	-	-	-
WE × National or higher diploma	0.016	0.050	0.007	0.319	= .750	-	-	-
WE × Bachelor's degree or equivalent or more	-0.012	0.064	-0.004	-0.182	= .855	-	-	-
BO × Post-school certificate or diploma	0.039	0.067	0.012	0.606	= .545	-	-	-
BO × National or higher diploma	0.105	0.057	0.037	1.848	= .065	-	-	-
BO × Bachelor's degree or equivalent or more	-0.011	0.077	-0.003	-0.139	= .889	-	-	-
OCB × Post-school certificate or diploma	-0.079	0.054	-0.024	-1.458	= .145	-	-	-
OCB × National or higher diploma	0.067	0.049	0.025	1.386	= .166	-	-	-
OCB × Bachelor's degree or equivalent or more	0.000	0.064	0.000	0.007	= .994	-	-	-
AL × Post-school certificate or diploma	-0.049	0.045	-0.024	-1.087	= .277	-	-	-
AL × National or higher diploma	-0.009	0.041	-0.005	-0.211	= .833	-	-	-
AL × Bachelor's degree or equivalent or more	0.057	0.053	0.022	1.076	= .282	-	-	-
Educational levels	-	-	-	-	-	0.776	0.602	0.599

B, regression coefficient; SE, Standard errors; t, t-test; p, probability value; R, multiple correlation coefficients; R<sup>2</sup>, proportion variance explained, WE, Work engagement; BO, Burnout; OCB, Organisational citizenship behaviour; AL, Work alienation.

Turnover intention is the dependent variable.

\*, Statistically significant ( $p \leq .001$ ); \*\*, Statistically significant ( $p \leq .05$ )

**TABLE 7:** Moderated multiple regression in terms of job levels.

Model 5	Unstandardised Coefficients		Standardised Coefficients			R	R <sup>2</sup>	Adjusted R <sup>2</sup>
	B	SE	Beta	t	p			
(Constant)	4.297	0.045	-	95.326	≤ .001*	-	-	-
WE	-0.234	0.061	-0.214	-3.828	≤ .001*	-	-	-
BO	0.301	0.052	0.205	5.754	≤ .001*	-	-	-
OCB	0.103	0.055	0.073	1.886	= .059	-	-	-
AL	0.519	0.043	0.552	12.217	≤ .001*	-	-	-
Operational workers	-0.111	0.051	-0.041	-2.179	= .029**	-	-	-
Specialist workers	-0.088	0.057	-0.029	-1.539	= .124	-	-	-
WE × Operational workers	0.072	0.066	0.052	1.086	= .278	-	-	-
WE × Specialist workers	0.011	0.073	0.005	0.154	= .878	-	-	-
BO × Operational workers	0.020	0.061	0.011	0.334	= .738	-	-	-
BO × Specialist workers	0.027	0.070	0.009	0.393	= .694	-	-	-
OCB × Operational workers	-0.020	0.060	-0.011	-0.339	= .735	-	-	-
OCB × Specialist workers	0.013	0.067	0.005	0.195	= .846	-	-	-
AL × Operational workers	-0.033	0.048	-0.026	-0.686	= .493	-	-	-
AL × Specialist workers	-0.018	0.053	-0.010	-0.340	= .734	-	-	-
Job levels	-	-	-	-	-	0.773	0.598	0.596

B, regression coefficient; SE, standard errors; t, t-test; p, probability value; R, multiple correlation coefficients; R<sup>2</sup>, proportion variance explained, WE, Work engagement; BO, Burnout; OCB, Organisational citizenship behaviour; AL, Work alienation.

Turnover intention is the dependent variable.

\*, Statistically significant ( $p \leq .001$ ); \*\*, Statistically significant ( $p \leq .05$ )

between job level categories and the predictor variables included in the model. The data therefore did not support Hypothesis 6, which states that job level moderates the

prediction of turnover intentions. Table 8 below shows the possible moderation effects of geographical region and other variables in the model.



**TABLE 8:** Moderated multiple regression in terms of geographic region.

Model 5	Unstandardised Coefficients		Standardised Coefficients			R	R <sup>2</sup>	Adjusted R <sup>2</sup>
	B	SE	Beta	t	Significance			
(Constant)	4.103	0.080	-	51.607	≤ .001*	-	-	-
WE	-0.161	0.090	-0.147	-1.793	= .073	-	-	-
BO	0.275	0.110	0.187	2.508	= .012**	-	-	-
OCB	-0.043	0.089	-0.030	-0.484	= .629	-	-	-
AL	0.504	0.071	0.535	7.093	≤ .001*	-	-	-
Corporate head office	0.127	0.087	0.040	1.457	= .145	-	-	-
Eastern	-0.014	0.094	-0.003	-0.149	= .881	-	-	-
Gauteng central	0.181	0.090	0.052	2.009	= .045**	-	-	-
Northeast	0.085	0.093	0.022	0.915	= .360	-	-	-
Southern	0.063	0.106	0.012	0.601	= .548	-	-	-
Western	0.118	0.090	0.034	1.311	= .190	-	-	-
WE*Corporate head office	0.017	0.098	0.008	0.173	= .863	-	-	-
WE*Eastern	-0.004	0.106	-0.001	-0.040	= .968	-	-	-
WE*Gauteng Central	-0.083	0.101	-0.035	-0.823	= .410	-	-	-
WE*Northeast	-0.084	0.106	-0.026	-0.789	= .430	-	-	-
WE*Southern	0.077	0.123	0.017	0.630	= .529	-	-	-
WE*Western	0.007	0.101	0.003	0.068	= .946	-	-	-
BO*Corporate head office	0.090	0.119	0.030	0.759	= .448	-	-	-
BO*Eastern	0.009	0.127	0.002	0.072	= .943	-	-	-
BO*Gauteng Central	-0.019	0.123	-0.006	-0.156	= .876	-	-	-
BO*Northeast	0.119	0.127	0.030	0.933	= .351	-	-	-
BO*Southern	0.012	0.144	0.002	0.085	= .933	-	-	-
BO*Western	0.009	0.124	0.003	0.075	= .941	-	-	-
OCB*Corporate head office	0.116	0.097	0.041	1.196	= .232	-	-	-
OCB*Eastern	0.118	0.107	0.028	1.102	= .270	-	-	-
OCB*Gauteng Central	0.163	0.099	0.051	1.644	= .100	-	-	-
OCB*Northeast	0.253	0.103	0.067	2.454	= .014	-	-	-
OCB*Southern	0.095	0.118	0.018	0.809	= .419	-	-	-
OCB*Western	0.109	0.100	0.033	1.093	= .274	-	-	-
OCB*Corporate head office	0.027	0.078	0.015	0.349	= .727	-	-	-
AL*Eastern	-0.013	0.084	-0.005	-0.157	= .875	-	-	-
AL*Gauteng Central	-0.049	0.081	-0.022	-0.609	= .542	-	-	-
AL*Northeast	-0.061	0.084	-0.022	-0.728	= .466	-	-	-
AL*Southern	0.095	0.099	0.025	0.958	= .338	-	-	-
AL*Western	-0.014	0.081	-0.006	-0.167	= .867	-	-	-
Geographic region	-	-	-	-	-	0.776	0.602	0.596

B, regression coefficient; SE, standard errors; *t*, *t*-test; *p*, probability value; *R*, multiple correlation coefficients; *R*<sup>2</sup>, proportion variance explained, WE, Work engagement; BO, Burnout; OCB, Organisational citizenship behaviour; AL, Work alienation.

Turnover intention is the dependent variable.

\*, Statistically significant ( $p \leq .001$ ); \*\*, Statistically significant ( $p \leq .05$ )

From the ANOVA analysis it followed that the regression model significantly predicted turnover intention,  $F(34, 2394) = 106.404, p \leq .001$ . The proportion variance explained ( $R^2$ ) for the model was .602 and adjusted  $R^2$  was .596. It is evident from Table 8 that only the individual predictor variables BO, AL and region Gauteng Central presented significant main effects (respectively  $t = 2.508, p = .012; t = 7.093, p \leq .001; t = 2.009, p = .045$ ), but there were no significant or interpretable interaction terms between the geographical region categories and the predictor variables in the model. The data therefore did not support Hypothesis 7 which states that geographical region moderates in the prediction of turnover intention.

## Discussion

The aim of this paper was to establish whether selected biographical and demographical variables possibly have a moderating effect on predictor variables work engagement, burnout, OCB, and work alienation in the prediction of TI. To

the researchers' knowledge this is the first study that include the effect biographical and demographical variables may have on WE, BO, OCB and AL as predictors of TI. Several biographical moderators were established in controlling an effect in the predictive model of TI – these were race, age, and marital status. Two demographic variables, namely job level and geographic region, were tested for a moderator effect in the predictive model of TI, and were found to be a non-statistically significant moderator.

## Summary of results

In the current study biographical (gender, race, age, marital status, and academic qualification) and demographical variables (job level and geographic region) are related to variables (as portrayed in Figure 1) such as WE, BO, OCB and AL in the prediction of turnover intentions. The following paragraphs provide a summary of these findings and possible explanations.

Hypothesis 1 states that *gender* moderates the prediction of turnover intentions. The current study's findings, however, do not support Hypothesis 1 and subsequently contradict the findings of previous studies (Almer & Kaplan, 2002; Burke, Koyuncu, & Fiksenbaum, 2008; Cotton & Tuttle, 1986; Coyne & Ong, 2007; Harris, Andrews & Kacmar, 2007; Karatepe & Aleshinloye, 2009; Zhen & Francesco, 2000) that reported moderation effects of gender in predicting TIs. This result is unexpected, and cannot be easily explained. The most plausible explanation would be that both genders are exposed to the same stimuli (practices and procedures) in their work environment and consequently do not differ in their response to these factors.

Hypothesis 2 states that *race* moderates the prediction of turnover intention. The findings of this study support Hypothesis 2 and also confirm research conducted previously by Fang (2001) and Harris *et al.* (2007). It is also argued by Jacobs (2005); Thomas (2002); Vallabh and Donald (2001) that previously disadvantaged groups exhibit higher job mobility. The current study found that engagement and alienation levels are dependent on whether you belonged to the White group and burnout levels whether you belong to the White, Coloured or Asian and Indian groups in the prediction of TIs. Level of OCB is dependent on the Coloured group only when predicting TIs. These differences may relate to employment market conditions where groups respond differently to workplace conditions in terms of their coping styles, by either displaying citizenship behaviours, becoming engaged or alienated, or in extreme cases, experience burnout.

Hypothesis 3 states that *age* moderates the prediction of turnover intention. This study supports Hypothesis 3, where OCB level is dependent on whether a person belonged to the age group of 50 and above when predicting TIs. The current study therefore supports previous research findings on the relationship between age and turnover intentions, showing that age is negatively related to an employee's intentions to vacate his position (Cotton & Tuttle, 1986; Cropanzo *et al.*, 2003; Jacobs, 2005; Harris *et al.*, 2007; Karatepe & Aleshinloye, 2009; Rothrauff *et al.*, 2011; Weisberg & Kirschenbaum, 1991). The stated hypothesis is, in this case, only applicable to the age group of 50 and above. This indicates that the older age group may be more cautious to resign because of the difficulty of finding alternative employment.

Hypothesis 4 states that *marital status* moderates the prediction of turnover intentions. Hypothesis 4 is supported in this study where the level of burnout is dependent on whether a person is married or cohabitating (probably based on conflicting work and private life demands) and the level of alienation based on whether a person is divorced or separated (probably as a result of too many demands and consequential withdrawal behaviour) when predicting TIs. This confirms research by Cotton and Tuttle (1986), who argued that married employees are less likely to resign than unmarried employees, because marital status and the accompanying responsibilities can be viewed as a constraint to resign (Chompookum & Derr, 2004). To the contrary, research by Huffman *et al.* (2008) reported that employees with a spouse and/or children who experienced work versus

family conflict, advanced more easily into organisational attitudes, such as job satisfaction and turnover intentions than their single, childless colleagues.

Hypothesis 5 states that *education levels* moderate the prediction of turnover intentions. The current study could not establish any support for Hypothesis 5. Cotton and Tuttle (1986) reported that education level is *positively* related to employee turnover, because the better qualified a person is, the better their possible job opportunities (Thomas, 2002). Mauno *et al.* (2007) found that the work engagement subcomponent dedication '...was more often experienced among professionals than non-professionals' (p. 164). The findings of Denton *et al.* (2008) are in line with those of Mauno *et al.* (2007) who found that the group with additional professional qualifications reported higher WE and lower BO scores. This relationship between education level and turnover intentions may however, only be visible under normal market conditions, but South Africa's 'abnormal' market conditions, where Black Economic Empowerment and other restrictive labour legislation and associated practices prevent normal market forces to come into play, *may* be the reason for not finding support for Hypothesis 5.

Hypothesis 6 states that *job level* moderates the prediction of turnover intentions. The current study could not establish any support for Hypothesis 6. Findings by Weisberg and Kirschenbaum (1991) showed that lower organisational levels relate negatively and significantly to an employee's intentions to resign.

Organisational levels with high demands have been related to BO and turnover intentions (Almer & Kaplan, 2002; Chiu *et al.*, 2009), but job position also showed to be significantly related to WE (Kim *et al.*, 2009). It is known that job levels and education levels normally co-vary to some degree. A similar explanation may be provided as in the case of Hypothesis 5 above, where restrictive labour legislation and associated practices distort and prevent normal market forces to come into play.

Hypothesis 7 states that *geographic region* moderates the prediction of turnover intentions. The current study could not establish any support for Hypothesis 7. No previous literature could shed any light on this finding, but it was theorised that geographic region may be related to differences in cost of living, educational facilities, property ownership and recreational facilities, which may influence employees' choices to locate in a particular region.

## Managerial implications and recommendations

The study explored various antecedents of TI and included the biographical and demographical differences that tended to influence the prediction of TI within this sample group. A practical contribution of this study will be an increased understanding of the implications with regard to workforce diversity and the prediction of such trends in the South African ICT sector. These antecedents of TI could therefore act as identifiers and applied in evidence-based recruitment and selection procedures, retention strategies and talent

management interventions. Human resources practices could benefit from the predictive validity this study provides to improve on sustainability strategies and could be used in the reduction of employee turnover or at least in the accurate anticipation of employee turnover and associated expenses. 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 thereby suggesting that no 'one size fits all strategy' could be imposed. HR practices should therefore differentiate in terms of these moderating variables. A Chinese study, viewed as being knowledgeable about organisational attitudes and demography of employees in the prediction of TIs as managerially empowering (Zhen & Francesco, 2000), supports these results.

### Suggestions for future research

This study only investigated job level (managers, operational workers and specialist workers) as demographical variable moderating the predictive model of turnover intentions. Future researchers are urged to match other contributing effects of biographical and demographical variables when attempting to explain organisational attitudes and behaviour (such as TIs), taking into account that very little literature on the interaction between these variables and the predictive model of TI is currently available. Future research should also explore the longitudinal implications of biographic and demographic variables on the turnover intentions model as the current study's findings are limited in terms of causal relationship implications. Lastly, it is suggested that research endeavours focus on developing tangible and best-practice recruitment, selection and retention strategies and talent management interventions that comply with current Employment Equity legislation and are based on the outlined antecedents of TIs within the ICT sector.

### Possible limitations of the study

One limitation of this study is its cross-sectional field survey design, which hinders the credibility of its causal relationships. Longitudinal designs are usually preferred to cross-sectional designs for the establishment of causal relationships. Another limitation is, as Mouton (2001) also pointed out, the fact that an 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 apply to the population outside the ICT sector company 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. A fifth limitation refers to strict compliance to *Employment Equity Act No. 55* (1998) legislation regarding fair and unbiased selection practices when consulting findings on biographical and demographical indicators to turnover intentions.

### Conclusion

The purpose of the study described in this article was to increase management understanding of sustainability and risk issues relating to *people retention* in terms of the triple bottom line – profit, people, planet (King III Report, 2009). The study highlighted the moderating role of some biographical and demographical variables in the voluntary employee turnover process. The associated impact of voluntary employee turnover on profit margins is well documented in relevant literature (Bluedorn, 1982; Greyling & Stanz, 2010; Mobley, 1982).

### Acknowledgements

I would like to thank Roslyn de Braine and Chris Bothma for their kindness in sharing the use of their dataset to conduct the SDA for this study. The research reported in this article is the product of a collaborative research project between the University of Johannesburg and the Vrije Universiteit, Amsterdam. Financial support from SANPAD for conducting this research is hereby acknowledged. Conclusions drawn or opinions expressed in this article are those of the author and do not necessarily reflect the views of SANPAD. A more limited version of this research article was presented as a paper at the XXVIII Pan Pacific Business Conference, 26–29 May 2011, Daejeon, Korea and was also published under the title of: 'The Role of Biographical and Demographical Variables as Moderators in the Prediction of Turnover Intentions' in the *Proceedings of the Pan Pacific Conference*.

### Competing interests

The authors of this did not receive any funding from any individual or institution in conducting this research. The authors therefore declare that they have no financial or personal relationship(s) which may have inappropriately influenced them in writing this paper.

### Authors' contributions

J.d.P. (University of Johannesburg) was the first author of this article that forms a second (but unrelated part) of a first article by the same authors. J.d.P. conducted this research in the partial fulfillment of her master's degree. In this capacity she conducted the statistical analyses and wrote large portions of the article. G.R. (University of Johannesburg) was the project leader of the SANPAD project and also the supervisor of J.d.P.'s study. In this capacity he made conceptual contributions to the study and wrote portions of the article.

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