

Organisational commitment and job embeddedness of service staff with critical and scarce skills

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Abstract

In the light of the global skills shortage, the retention of staff with critical and scarce skills has become a top priority. The objective of this study was to empirically investigate the relationship between such employees' organisational commitment (measured by the Organisational Commitment Questionnaire) and their job embeddedness (measured by the Job Embeddedness Scale). It also attempted to establish whether gender, race, marital status, tenure and job level groups differ significantly regarding these variables in the South African context. A cross-sectional survey design was used to collect data from a purposive sample of N = 206 staff members identified as possessing critical and scarce skills in a South African medical and IT services company. Descriptive, correlational and inferential statistics were applied to achieve the objectives. The participants showed a high level of affective and continuance commitment with regard to their perceived job embeddedness. The results also confirmed that the biographical groups differed significantly in terms of the variables. The results are of importance for managers interested in retaining staff that have been identified as having critical and scarce skills and could provide valuable pointers for the design of effective human resource retention strategies.

Key words: organisational commitment, job embeddedness, staff retention, gender, marital status, tenure, medical and IT staff

1 Introduction

For the contemporary South African organisation in the medical and information technology (IT) industry, the retention of service staff with scarce and critical skills has become a top priority (Mohlala, Goldman & Goosen 2012; Muteswa & Ortlepp 2011; Van Dyk 2012). The glaring skills crisis in South Africa, especially pertaining to the retention of talent or "knowledge workers" in the services industry, has led to the loss of intellectual and technical personnel, with an accompanying negative impact on economic and social growth in the country (Bagraim 2010; Du Preez 2002; Thomas 2009). Research has shown that medical (Hill 2011; Holtom & O'Neill 2004; Mdindela

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2009; Stanz & Greyling 2010) and IT professionals (Mohlala et al 2012) have a strong tendency to leave their organisations (Korunka, Hoonakker & Carayon 2008) and their country (Bezuidenhout, Joubert, Hiemstra & Struwig 2009; Rasool & Botha 2011; Statistics South Africa 2005). The skills of medical (Holtom & O'Neill 2004) and IT professionals are specialised and generally hard to replace (Ghapanchi & Aurum 2011; McKnight, Philips & Hardgrave 2009). Furthermore, apart from the high costs associated with staff turnover, skills shortages are also regarded as major obstacles to economic growth and job creation in South Africa (Bhorat, Meyer & Mlatsheni 2002; Kraak 2008; Mohlala et al 2012; Rasool & Botha 2011).

Over the past few decades, the role of commitment in the retention of scarce and critical staff has received considerable attention (Döckel 2003; Döckel, Basson & Coetze 2006). Organisational commitment has been related to employees' intention to stay with their organisation (Casper, Harris, Taylor-Bianco & Wayne 2011; Meyer & Allen 1991). This topic is still deemed important today, as it may assist in understanding employees' work-related behaviour (Meyer & Herscovitch 2001) and the nature of the psychological process through which people choose to identify with an organisation (Cohen 2003; Neininger, Lehmann-Willenbrock, Kauffeld & Henschel 2010). Research findings indicate that employees who are strongly committed to their organisation are less likely to leave (Delobbe & Vandenberghe 2000; Spector 2008).

Research is also increasingly focusing on employees' sense of job embeddedness as an aspect of their turnover intention. Job embeddedness represents the collective, generally non-affective reasons why an employee will not leave a job. Lee, Mitchell, Sablenski, Burton and Holtom (2004) view job embeddedness as a retention construct that reflects employees' decisions to participate directly both on and off the job. Moreover, Mitchell, Holtom, Lee, Sablenski and Erez (2001) suggest that when individuals have multiple attachments related to their sense of job embeddedness in an organisation, these attachments are likely to keep them from leaving, even if they think about leaving as a result of particular circumstances (e.g. getting a better offer or a company relocation to a non-preferred location). Individuals who are highly embedded in their jobs might choose to stay with an employing organisation even if the circumstances are less than ideal (Caldarola 2010).

In South Africa, there is a paucity of studies on organisational commitment and job embeddedness in IT and medical services companies. Empirical studies have been conducted in various industries (Curran 2012; Heymann 2010; Martin & Roodt 2008; Mohlala et al 2012; Mrara 2010; Pillay 2009), but with little focus on the two categories studied in this article. The focus of studies conducted in the medical and IT services industries appears to have been largely on determining the turnover intentions of staff (Mdindela 2009; Stanz & Greyling 2010) and retaining the dwindling pool of critical skills, particularly at managerial level (Kerr-Philips & Thomas 2009; Kotzé & Roodt 2005; Lesabe & Nkosi 2007; Muteswa & Ortlepp 2011).

The above literature highlights the dire skills shortage that has resulted from employees with critical skills leaving organisations to find better opportunities beyond the borders of South Africa. Against this background and increasing local and global competition, it is crucial for any organisation, particularly those in developing countries with limited skills resources such as South Africa, to ensure that it consistently develops and retains a loyal, committed and able workforce (Heymann 2010; Mohlala et al 2012; Muteswa & Ortlepp 2011; Van Dyk 2012). In the search for solutions to overcome the skills shortages in South African workplaces, it would appear beneficial to gain insight into the relationship between employees' organisational commitment and their

perceived job embeddedness, and the way in which employees who differ in terms of gender, race, marital status, tenure and job level groups may vary regarding these variables. Such knowledge could inform the design of effective strategies for retaining staff with scarce and critical skills in the South African multicultural organisational context.

2 Aims of the study

Against the preceding background to this study, the relationship between the organisational commitment and perceived job embeddedness of medical and IT services staff who have been identified as possessing scarce and critical skills is investigated. The study further aims to investigate how gender, race, marital status, tenure and job level groups differ in terms of these variables. Considering the multicultural diversity of the South African workforce and the fact that attracting and retaining people with scarce and critical skills is becoming more difficult, this study is expected to contribute valuable new knowledge that may inform retention practices in the medical and IT services industry.

3 Organisational commitment

Meyer and Allen's (1991) conceptualisation of organisational commitment is of relevance to the present study. These authors suggest that highly committed employees are more inclined to stay with their organisations. However, the reasons they stay tend to differ in the sense that some employees stay because they feel emotionally attached to the organisation (referred to as *affective commitment*); others stay because they feel they have to (referred to as *continuance commitment*), while still others remain because they feel they ought to (referred to as *normative commitment*).

Affective commitment refers to an employee's connection through an emotional bond with, linkage to or engagement in the organisation, while continuance commitment refers to the employee's perceptions of the benefits and advantages that may be lost when one leaves the relevant organisation. Normative commitment, on the other hand, refers to an employee's sense of indebtedness towards the relevant organisation. Thus, employees may feel obligated to stay at their organisation because of social norms (Meyer & Allen 1991). Affective commitment and normative commitment reflect employees' attitudinal dispositions, whereas continuance commitment indicates their behavioural orientation (Meyer & Allen 1997). Affective commitment creates emotional bonds that can result in the employee's developing a sense of responsibility and duty (normative commitment) towards the organisation. In addition, normative commitment can also lead to continuance commitment owing to an emotional involvement in the organisation that may lead to the desire for continuation (Martin 2008).

According to Meyer and Allen (1991), employees tend to develop a stronger affective attachment to the organisation if their experiences within the organisation are consistent with their expectations and their basic needs are satisfied than if their experiences are less satisfying. Moreover, continuance commitment may develop as employees recognise that they have accumulated investments (Becker 1960) that may be lost if they leave their current organisation, or if alternative employment possibilities are limited. Further, normative commitment develops as a result of socialisation experiences that emphasise the appropriateness of remaining loyal to one's employer (Morrow 2011), or of organisational benefits (e.g. a car allowance, medical aid or study leave). Research by Manetje and Martins (2009) suggests that employees who are

affectively committed to the organisation are more willing to maintain their relationship with the organisation than those who are normatively and continuance committed. Lumley (2009) further suggests that organisational commitment has been found to be related to the major work outcomes of turnover intention and actual turnover. Accordingly, employees who are strongly committed to their organisation are less likely to leave (Delobbe & Vandenberghe 2000; Lumley 2009; Spector 2008).

Research by Coetzee, Schreuder and Tladinyane (2007) found no significant differences between the organisational commitment of black and white people, and males and females. Moreover, Metcalfe and Dick (2002) reported similar findings regarding the organisational commitment of males and females. In terms of age, Bentein, Vandenberghe, Vandenberg and Stinglhamber (2005) found evidence of a linearly declining change of affective commitment and normative commitment over time. Research by Meyer and Allen (1984) indicated that older workers become more attitudinally committed to an organisation, while Ferreira and Coetzee (2010) also found older employees to be affectively and normatively more committed to their organisations than their younger counterparts. Overall, Lesabe and Nkosi (2007) found that organisational commitment, which they describe as a complicated concept, plays an important role in the intended strategic objective of the organisation. These authors further suggest that the concept cannot be studied independently of other work-related attitudes such as job embeddedness and job satisfaction.

4 Job embeddedness

Embeddedness represents the collection of forces that keep an employee in a job (Halbesleben & Wheeler 2008). The construct of embeddedness views employees as embedded in a field of forces that influence turnover decisions, address a variety of aspects such as affect, fit and structural ties, and stress the importance of relationships (Allen 2006). Mitchell et al (2001) suggest that job embeddedness consists of three independent elements: the *fit* (match) between a person's job and their community and their personal life space; the *links* a person has to other people or activities; and the extent to which a person would have to make a *sacrifice* to break these links—hence it represents what an employee will sacrifice on leaving the organisation. In combination these three elements exert pressure on employees to stay at their current organisation (Ng & Feldman 2010).

Job applicants develop perceptions of fit with an organisation based on their values and identities, and will opt out of the recruitment process if they perceive a lack of fit (Ng & Burke 2005). Embeddedness further suggests that a number of strands connect an employee to his or her family in a social, psychological and financial web. This web includes work and non-work friends, groups, the community and the physical environment in which the employee lives. The greater the number of links between the person and the web, the more firmly an employee is bound to the job and the organisation (Mallol, Holtom & Lee 2007).

Perceived job embeddedness consists of the organisational dimension and the community dimension. Researchers have found that the organisational dimension predicts employee job performance better than the community dimension (Allen 2006; Halbesleben & Wheeler 2008; Lee et al 2004). In addition, findings indicate that, when job relocation is not a factor, the organisational dimension predicts employee retention better than the community dimension (Allen 2006; Halbesleben & Wheeler 2008; Lee et al 2004). Burton, Holtom, Sablinski, Mitchell and Lee (2010) found that the organisational dimension helps to reduce the impact that shocks have on organisational

citizenship and overall job performance. Shocks represent “a push force” on an individual that initiates intentions to leave the organisation (Mitchell et al 2001). Thus, in this study the community dimension (off-the-job factors) of embeddedness will be excluded and the focus will be on the organisational dimension of perceived job embeddedness.

In the context of the present study, the organisational dimension of perceived job embeddedness (Mitchell et al 2001) will be viewed as

- the employee's perceived fit with his or her job (person-job fit)
- the employee's perceived fit with the organisation (person-organisation fit)
- the employee's perceived cost of leaving his or her current job (person-job sacrifice)
- the employee's perceived cost of leaving his or her current organisation (person-organisation sacrifice)

Empirical studies suggest that people who are embedded in their jobs have a lower intention to quit and are less ready to quit than those who are not embedded. Employees who feel strongly embedded and committed may define their relationships with their employers as long-term relationships, as opposed to employees who have lower levels of embeddedness and commitment to their organisations (Heymann 2010; Mallol et al 2007; Mitchell et al 2001).

5 Research design

5.1 Research participants

The sampling method used was dependent on the scarcity and criticality of certain skills, as identified by the senior management in the Human Resources division of the company where the study was conducted, and the willingness and availability of the participants in this study. Because the study focused on scarce and critical skills within a specific company, the medical and IT staff members who were identified for participation in the study were treated as a unitary group. A final sample ($N=206$) of scarce and critical staff members for participation in the study was purposively drawn from the entire population of 2170 staff members in the company.

The sample was skewed towards females (73%) between the ages of 30 and 39 (40%), and 40 and 49 years (30%). The participants were mostly either married (59%) or single/divorced/widowed (41%). In terms of race, whites represented 53% and blacks 47% (Africans 13%; coloureds 22%; Asians 12%) of the sample. As regards level within the company, 69% were employed at the operational level, 15% at the management level and 17% at the senior management level. The majority of the participants had a post-matric qualification (77%), mainly in the form of a certificate (12%), diploma (34%), degree (18%) or postgraduate (13%) qualification. In terms of tenure, the participants had been in the company's employ for less than five years (45%), between six and ten years (23%), and between 11 and 15 years (21%). Only 11% had occupied their positions for 15 years and more. The participants' length of employment in their current position was found to be between three and five years (31%), one and two years (25%), less than a year (21%), between six and ten years (17%) and, finally, more than 11 years (4%). Most participants were employed at a professional level (69%), with 15% at management level and 17% at senior management level.

5.2 Measuring instruments

The measuring battery consisted of the well-established Organisational Commitment Questionnaire (OCQ) (Meyer & Allen 1997) and the Job Embeddedness Scale (JES), which was developed by Mitchell et al (2001).

The OCQ (Meyer & Allen 1997) is a multi-factorial measure for assessing individuals' affective (8 items), continuance (7 items) and normative commitment (7 items) on a six-point Likert-type scale. In terms of internal consistency reliability, Meyer, Allen and Smith (1993) report the following Cronbach's alpha coefficients: affective commitment (0.82), continuance commitment (0.74) and normative commitment (0.83). The median reliabilities for the affective, continuance, and normative scales are 0.85, 0.79 and 0.73 respectively. With few exceptions, the reliability estimates exceed 0.70 (Meyer & Allen, 1997). In terms of the present study, acceptable (high) internal consistency reliabilities were also obtained: affective commitment (0.90), continuance commitment (0.84) and normative commitment (0.70).

The JES (Mitchell et al 2001) is a 23-item self-report inventory that uses a six-point Likert scale to measure perceived job embeddedness and consists of three subscales: fit (7 items), sacrifice (10 items) and links (6 items). The JES (Mitchell et al 2001) comprises two dimensions, namely, organisational and community dimensions. Researchers have found that the organisational dimension is a better predictor of employee performance than the community dimension (Allen 2006; Halbesleben & Wheeler 2008; Lee et al 2004). For the purposes of this study, the examination will be limited to the organisational dimensions relating to the individual's perceived fit and sacrifice. High Cronbach's alpha coefficients (internal consistency reliability) were obtained for the present study: total organisation fit (0.83); person-job fit (0.79); person-organisation-fit (0.83); total organisation sacrifice (0.87); person-job sacrifice (0.86); and person-organisation sacrifice (0.74). The overall internal consistency reliability coefficient for the JES was 0.91.

5.3 Research procedure

Ethical clearance to conduct the research was obtained from the participating organisation. The purposively selected individuals were requested to participate voluntarily in the research by completing the questionnaires. The questionnaires were sent to participants via the company's internal mail system. The questionnaires were accompanied by a covering letter explaining the purpose of the study and emphasising the confidentiality of the research project and the fact that all information would be used for research purposes only. All questionnaires were answered anonymously and written informed consent was obtained from all participants. The completed questionnaires were returned to the researchers via an external e-mail system. The researchers were available to respond to any questions or concerns. The confidentiality of the participants was maintained and the completed questionnaires were kept secure. The raw data were captured and converted to an SPSS dataset.

5.4 Statistical analysis

The Statistical Package for the Social Sciences (SPSS, version 17 2008) was used to analyse the data. Descriptive, correlational and inferential statistics were calculated. Cronbach's alpha coefficients were used to assess the internal consistency of the measuring instruments and Pearson product-moment correlations were calculated to assess the direction and strength of the relationships between the variables. In order to counter the probability of a type I error, the significance value was set at the 95%

confidence interval level ($p \leq 0.05$). For the purposes of this study, r values ≥ 0.30 (moderate effect) (Cohen 1992) were regarded as practically significant. T-tests were used to compute the mean differences between the gender groups, while analysis of variance tests (ANOVA) were performed to test for significant mean differences between the various age, race and tenure groups. Cohen's d and eta squared values were computed to assess the magnitude of the differences between the biographical groups. The significance value was also set at the 95% confidence interval level ($p \leq 0.05$) for the interpretation of results. For the purposes of this study, Cohen's d values ≥ 0.50 (moderate effect) and eta squared values $\eta^2 \geq 0.09$ (moderate effect) (Cohen 1992) were regarded as practically significant for subgroup differences.

6 Results

6.1 Descriptive statistics: organisational commitment (OCQ) and perceived job embeddedness (JES)

Table 1 shows the means and standard deviations for both organisational commitment and perceived job embeddedness. The total OCQ mean average score was ($M = 3.82$; $SD = 0.79$). The highest mean score obtained was on the affective commitment subscale ($M = 3.97$; $SD = 0.90$), followed by the normative commitment subscale ($M = 3.78$; $SD = 1.01$). Hence, the lowest mean score was obtained on the continuance commitment subscale ($M = 3.69$; $SD = 1.20$). With regard to perceived job embeddedness, the mean average score of the JES was ($M = 4.12$; $SD = 0.88$). The highest mean score obtained was on the perceptions of person-job fit subscale ($M = 4.75$; $SD = 0.84$), followed by the perceptions of organisation-fit subscale ($M = 4.71$; $SD = 0.88$). Accordingly, the lowest mean score was obtained on the person-job sacrifice subscale ($M = 3.61$; $SD = 1.07$).

Table 1
Means, standard deviations, internal consistency reliability values, and organisational commitment (OCQ) and perceived job embeddedness (JES) ($N = 206$)

Variable	<i>M</i>	<i>SD</i>	Cronbach's alpha coefficients
Affective commitment (OCQ)	3.97	0.90	0.76
Continuance commitment (OCQ)	3.69	1.20	0.84
Normative commitment (OCQ)	3.78	1.01	0.70
Overall organisation-fit (JES)	4.71	0.88	0.83
Person-job-fit (JES)	4.75	0.84	0.82
Person-organisation fit (JES)	4.46	1.43	0.79
Overall organisation-sacrifice (JES)	3.70	1.20	0.87
Person-job sacrifice (JES)	3.61	1.07	0.86
Person-organisation sacrifice (JES)	3.90	1.18	0.74

6.2 Correlation analysis of organisational commitment (OCQ) and perceived job embeddedness (JES)

Table 2 shows that the organisational commitment variables correlated significantly and positively with the perceived job embeddedness variables. Significant correlations of large practical effect ($r \geq 0.50$; $p \leq 0.00$) were obtained between the OCQ affective commitment and the JES variables. Similarly, significant correlations of large practical effect ($r \geq 0.52$; $p \leq 0.00$) were obtained between the OCQ total commitment and the

JES variables: overall organisation-fit, overall organisation-sacrifice, person-job sacrifice, person-organisation sacrifice and overall job embeddedness variables. The OCQ continuance commitment variable also shows significant correlations of large practical effect with the overall organisation-sacrifice, person-job sacrifice, person-organisation sacrifice and overall job embeddedness variables ($r \geq 0.53$; $p \leq 0.00$).

The OCQ normative commitment variable shows significant correlations of moderate practical effect ($r \leq 0.31 \geq 0.37$; $p \leq 0.00$) with the overall organisation-sacrifice, person-job sacrifice, person-organisation sacrifice and overall job embeddedness variables. Similarly, the OCQ continuance commitment variable shows significant correlations of moderate practical effect ($r \leq 0.40 \geq 0.47$; $p \leq 0.00$) with the overall organisation-fit, person-job fit and person-organisation fit variables.

Table 2
Correlation analysis between organisational commitment (OC) and perceived job embeddedness (JE) (N = 206)

Perceived Job Embeddedness (JES)		Affective Commitment (OCQ)	Normative Commitment (OCQ)	Continuance Commitment (OCQ)	Total Commitment (OCQ)
Overall organisation-fit	<i>r</i>	0.61*** +++	0.15* +	0.47*** ++	0.52*** +++
Person-job fit	<i>r</i>	0.51*** +++	0.11	0.40*** ++	0.43*** ++
Person-organisation fit	<i>r</i>	0.60*** +++	0.14* +	0.45*** ++	0.51*** +++
Overall organisation-sacrifice	<i>r</i>	0.62*** +++	0.37*** ++	0.62*** +++	0.68*** +++
Person-job sacrifice	<i>r</i>	0.61*** +++	0.34*** ++	0.60*** +++	0.66*** +++
Person-organisation sacrifice	<i>r</i>	0.50*** +++	0.34*** ++	0.53*** +++	0.58*** +++
Overall job embeddedness	<i>r</i>	0.68*** +++	0.31*** ++	0.62*** +++	0.68*** +++

Note: *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$ (two-tailed)

+++ $r \geq 0.50$ (large practical effect size) ++ $r \geq 0.30 \leq 0.49$ (medium practical effect size)

+ $r \leq 0.29$ (small practical effect size)

6.3 Inferential statistics: tests for significant mean differences (gender)

Differences between gender groups were tested by means of the independent samples t-test. Table 3 reports the significant results and shows that significant differences of small practical effect ($d = 0.27 - 0.31$; small effect size) exist between males and females in terms of only the OCQ affective commitment, JES person-organisation fit and overall job embeddedness subscales. Females scored significantly lower than men on affective commitment ($M = 3.90$ versus $M = 4.18$), person-organisation fit ($M = 4.68$ versus $M = 4.97$) and overall job embeddedness ($M = 4.04$ versus $M = 4.34$) at the $p \leq 0.05$ confidence limit.

Table 3
Significant differences between gender (N = 206)

Variable	Gender	N	Mean	SD	Sig. level (2-tailed)	Cohen's d
Affective commitment (OCQ)	Male	56	4.18	0.83	0.04*	0.27
	Female	150	3.90+	0.91		
Person-organisation fit (JES)	Male	56	4.97	0.84	0.02*	0.31
	Female	150	4.68+	0.88		
Overall job embeddedness (JES)	Male	56	4.34	0.83	0.03*	0.30
	Female	150	4.04+	0.88		

Note: *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; Lower mean+. d $\geq 0.20 \leq 0.50$ = small in effect size.

6.4 Inferential statistics: tests for significant mean differences (race)

The differences in mean scores between the race groups (African, coloured, Indian, and white) on the OCQ and JES were tested by means of ANOVA. As no significant differences were observed between the various race groups, the results are not reported in table format for reasons of space.

6.5 Inferential statistics: tests for significant mean differences (marital status)

The differences in mean scores between the marital status subgroups on the OCQ and JES were obtained by means of ANOVA. The widowed category for marital status was excluded from the analysis since the base size ($N = 6$) was so small.

The results shown in Table 4 indicate significant differences between the marital status of the subgroups with regard to affective commitment ($p \leq 0.05$; $\eta^2 = 0.37$; large practical effect), person-job fit ($p \leq 0.05$; $\eta^2 = 0.01$, small practical effect), and person-job sacrifice ($p \leq 0.05$; $\eta^2 = 0.02$, small practical effect). Married respondents scored significantly higher on affective commitment ($M = 4.11$), and person-job sacrifice ($M = 3.77$) than the other subgroups. On the other hand, single respondents scored significantly higher on person-job fit ($M = 4.57$), while divorced respondents scored significantly lower on affective commitment than the married group.

Table 4
Significant differences between the marital status subgroups (N = 206)

Variable	Marital status	N	Mean	SD	F	df	Sig. level (2-tailed)	Eta Squared η^2
Affective commitment (OCQ)	Single	49	3.75	0.76	4.02	202	0.05*	0.37
	Married	122	4.11+	0.92				
	Divorced	28	3.72	0.90				
Person-job fit (JES)	Single	49	4.57+	0.79	3.14	202	0.05*	0.01
	Married	122	4.54	0.87				
	Divorced	28	3.82	1.02				
Person-job sacrifice (JES)	Single	49	3.42	0.98	3.27	202	0.05*	0.02
	Married	122	3.77+	1.04				
	Divorced	28	3.30	0.97				

Note: *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; Higher mean+. $\eta^2 \geq 0.01 \leq 0.08$ = small practical effect. $\eta^2 \geq 0.25$ = large practical effect

6.6 Inferential statistics: tests for significant mean differences (tenure)

The differences in mean scores between the tenure subgroups were tested by means of ANOVA. The results in Table 5 indicate significant differences ranging from small to moderate in practical effect between the tenure groups with regard to affective commitment ($p \leq 0.01$; $\eta^2 = 0.06$, small practical effect), normative commitment ($p \leq 0.01$; $\eta^2 = 0.05$, small practical effect), total commitment ($p \leq 0.01$; $\eta^2 = 0.06$, small practical effect), person-organisation fit ($p \leq 0.05$; $\eta^2 = 0.01$, small practical effect) and total perceived job embeddedness ($p \leq 0.05$; $\eta^2 = 0.04$, small practical effect). Respondents working for the organisation for fifteen years or longer scored significantly higher on affective commitment ($M = 4.36$), normative commitment ($M = 4.20$), total organisational commitment ($M = 4.17$), person-organisation fit ($M = 5.02$) and total perceived job embeddedness ($M = 4.43$) than the other tenure subgroups.

Table 5
Significant differences between the tenure subgroups (N = 206)

Variable	Tenure	N	Mean	SD	F	df	Sig. level (2-tailed)	Eta squared η^2
Affective commitment (OCQ)	Less than 5yrs	93	3.76	0.92	4.67	204	0.01**	0.06
	6-10yrs	47	3.97	0.82				
	11-15yrs	44	4.25	0.84				
	15+yrs	22	4.36+	0.84				
Normative commitment (OCQ)	Less than 5yrs	93	3.62	1.06	3.74	204	0.01**	0.05
	6-10yrs	47	3.65	0.91				
	11-15yrs	44	4.08	0.93				
	15+yrs	22	4.20+	0.97				
Total organisational commitment (OCQ)	Less than 5yrs	93	3.67	0.86	4.43	204	0.01**	0.06
	6-10yrs	47	3.75	0.64				
	11-15yrs	44	4.07	0.66				
	15+yrs	22	4.17+	0.84				
Person-organisation fit (JES)	Less than 5yrs	93	4.65	0.90	2.91	204	0.05*	0.01
	6-10yrs	47	4.61	0.82				
	11-15yrs	44	5.00	0.80				
	15+yrs	22	5.02+	0.95				
Overall job embeddedness (JES)	Less than 5yrs	93	3.98	0.89	3.02	204	0.05*	0.04
	6-10yrs	47	4.05	0.80				
	11-15yrs	44	4.36	0.83				
	15+yrs	22	4.43+	0.96				

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; Higher mean+. $\eta^2 \geq 0.01 \leq 0.08$ = small practical effect.

6.7 Inferential statistics: tests for significant mean differences (job level)

The differences in mean scores between the job-level subgroups were tested by means of ANOVA. Job level is the demographic variable that reflects the most differences between the subgroups. The results in Table 6 indicate significant differences between the job-level groups with regard to continuance commitment ($p \leq 0.01$; $\eta^2 = 0.02$, small practical effect), total organisation fit ($p \leq 0.05$; $\eta^2 = 0.02$, small practical effect), total organisation sacrifice ($p \leq 0.01$; $\eta^2 = 0.04$, small practical effect), person-job sacrifice (p

≤ 0.01 ; $\eta^2 = 0.06$, small practical effect) and overall job embeddedness ($p \leq 0.01$; $\eta^2 = 0.04$, small practical effect). Respondents at the senior management level scored significantly higher on continuance commitment ($M = 3.95$), organisation fit ($M = 5.05$), organisation sacrifice ($M = 4.14$), person-job sacrifice ($M = 4.14$) and total perceived job embeddedness ($M = 4.51$) than the other job-level subgroups.

Table 6
Significant differences between job level subgroups (N = 206)

Variable	Job level	N	Mean	SD	F	df	Sig. (2-tailed)	Eta squared η^2
Continuance commitment (OCQ)	Senior management	34	3.95+	1.03	3.03	202	0.05*	0.02
	Management level	30	3.28	1.03				
	Operational level	141	3.71	1.13				
Total organisational commitment(OCQ)	Senior management	34	4.03+	0.59	2.95	202	0.05*	0.02
	Management level	30	3.56	0.75				
	Operational level	141	3.83	0.83				
Organisation fit (JES)	Senior management	34	5.05+	0.75	3.18	202	0.05*	0.03
	Management level	30	4.72	0.69				
	Operational level	141	4.63	0.93				
Organisation sacrifice (JES)	Senior management	34	4.14+	0.94	4.29	202	0.01*	0.04
	Management level	30	3.77	1.03				
	Operational level	141	3.59	0.99				
Person-job sacrifice (JES)	Senior management	34	4.14+	0.94	5.92	202	0.01**	0.06
	Management level	30	3.72	1.03				
	Operational level	141	3.47	0.99				
Overall job embeddedness (JES)	Senior management	34	4.51+	0.78	4.59	202	0.01**	0.04
	Management level	30	4.16	0.83				
	Operational level	141	4.02	0.88				

Note: *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; Higher mean+. $\eta^2 \geq 0.01 \leq 0.08$ = small practical effect.

7 Discussion

The current study contributes to the retention literature by exploring the relationship between the organisational commitment and perceived job embeddedness of staff members identified as possessing scarce and critical skills in a South African medical and IT services company. It also investigated the way different gender, marital status, tenure and job level subgroups differ with regard to their organisational commitment and perceived job embeddedness.

7.1 Relationship between organisational commitment and perceived job embeddedness

Overall, the results suggest that the participants' organisational commitment is significantly related to their perceived job embeddedness. Moreover, it was found that the participants' perceptions of strong compatibility with the organisation (person-job fit and person-organisation fit) have significantly increased their emotional connection to the company. Muteswa and Ortlepp (2011) highlight the importance of person-organisation fit, especially for management-level employees considered to have scarce skills. Essentially, if an employee and the organisation have common characteristics, the likelihood of that employee remaining in the organisation is high.

The strong positive relationship identified between the affective commitment of the participants and their job embeddedness suggests that the emotional bonds created by their motivation to stay with the company also significantly influence their perceptions of what they will have to sacrifice in terms of their jobs and the company should they decide to leave the organisation. In contextualising the findings to the medical and IT services environment, it can be argued that the affective commitment of these knowledge workers, specifically their commitment to their fellow employees, encourages emotional bonds, supportive behaviours and low intention to leave the organisation (Bagraim 2010). This is affirmed by Manetje and Martins (2009), who found that employees who are affectively committed to the organisation tend to be highly motivated to maintain their relationship with the organisation.

The strong association between the participants' normative and continuance commitment and the sacrifice dimensions of their perceived job embeddedness suggests that their sense of obligation to stay with the company (normative commitment) and their perceptions of the benefits and advantages that they may lose if they leave the organisation (continuance commitment) significantly influence their perceptions of what they will have to sacrifice should they decide to leave the organisation. Sacrifice (person-job sacrifice and person-organisation sacrifice) represents the perceived cost of the monetary and non-monetary benefits that are forfeited when one leaves the organisation (Mitchell et al 2001). For example, leaving an organisation may imply personal losses such as contact with friends, projects or perks. Thus, the higher the perceived costs the greater the embeddedness (Holtom, Mitchell & Lee 2006).

7.2 Differences between biographical groups

Gender: The results showed that female participants experienced a lower level of emotional attachment to the organisation, apparently because they perceived a lower fit with the organisation and experienced lower levels of job embeddedness as opposed to their male counterparts. In contrast to the findings of this study, research by Coetzee et al (2007) found no significant differences between organisational commitment and gender. This is an interesting finding when considering that the majority of the sample consisted of female participants. Kotzé and Roodt (2005) reported a difference with a small practical effect between males and females. This supports arguments proposed by Lumley (2009) that gender and affective commitment are unrelated.

Marital status: The single participants experienced significantly higher levels of person-job fit than their married counterparts. The results further suggest that the divorced participants experienced lower levels of emotional attachment to their organisation than the single and married participants, with the married participants experiencing higher levels of emotional attachment to the organisation than their single or divorced counterparts. In addition, the married participants seemed to perceive a higher level of sacrifice in terms of what they would have to give up when leaving their current job. This could be attributed to the sense of responsibility that the married participants most probably feel as regards caring for their families and what they would have to sacrifice in terms of the perceived cost of monetary and non-monetary benefits that are forfeited when they leave the organisation (Mitchell et al 2001). Lumley (2009) found that married people have a stronger preference for a secure and stable work environment. This is because married people generally tend to have greater financial responsibilities and family commitments which seemingly enhance the need for a stable and secure work environment (Martin & Roodt 2008). By contrast, Stanz and Greyling

(2010) found that marital status does not influence the decision of medical services staff either to remain with the organisation or to leave.

Tenure: Employees who had worked for the organisation for fewer than five years experienced a significantly lower level of satisfaction on affective commitment than the other groups. This finding suggests that the longer individuals work for their organisation the more emotionally attached they may become to it. In terms of normative commitment, it appears that the longer the employee has worked for the organisation, the higher the level of normative commitment and total organisational commitment. In agreement with the observations of Martin (2008), the findings of the current study suggest that the more obligated individuals feel to remain with their organisation the more attached (committed) they may become to the organisation.

Employees who had worked for the organisation for longer than 15 years are significantly more satisfied with their person-organisation fit and total perceived job embeddedness, and indicate a higher level of commitment to the organisation. The findings may suggest that the longer individuals work for the organisation, the higher their level of perceived fit with the organisation, the more embedded they may become and the happier they may feel about the organisation generally. Hom, Tsui, Wu, Lee, Zhang, Fu and Li (2009) state that individuals who feel strongly embedded may define their relationships with employers as longer-term relationships, while individuals who perceive their psychological contracts as relational may become more embedded in their organisations over time.

Middle and late career workers are more concerned with job security and career stability than with career exploration; therefore, high levels of embeddedness may be particularly satisfying for older employees (Ng & Feldman 2010). Mohlala et al (2012) say that organisations are eager to attract and retain knowledge workers with critical skills and years of experience. Meyer and Allen (1997) also suggest that an employee's commitment can be expected to change over a period of time and then stabilise with tenure. These findings appear to support research by Ferreira and Coetzee (2010), who found older employees to be affectively and normatively more committed to their organisations than their younger counterparts. Kotzé and Roodt (2005) found that the longer employees remain in the organisation, the less able or willing they are to deal with and accept changes in the organisation. These authors suggest that the retention of staff could therefore be enhanced by means of strategies or interventions that are targeted at tenured employees with critical skills.

Job level: Participants at the senior management level had significantly higher satisfaction levels on continuance commitment, organisation fit, organisation sacrifice, person-job sacrifice and total perceived job embeddedness as opposed to the other job-level groups. The findings suggest that employees at the senior management level tend to experience a higher level of fit with their organisation (Amabile, Conti, Coon, Lazenby & Herron 1996; Ng & Feldman 2010; Oldham & Cummings 1996). The results suggest that the senior management level participants perceived that they would be giving up a lot if they were to leave their job (person-job sacrifice) and organisation (organisation sacrifice). In line with these results, Holtom et al (2006) state that the higher individuals perceive the cost of leaving their job and organisation to be, the more embedded those individuals are in terms of the job and the organisation.

The results further indicate that the operational level participants experienced lower levels of sacrifice in their job or organisation. This finding suggests that the operational level participants perceived that they have less to give up when leaving their job and organisation as opposed to the participants at more senior job levels. Shaw, Delery,

Jenkins and Gupta (1998) found that the more an employee would be giving up when leaving an organisation, the more difficult it is to terminate employment with the organisation. Non-portable benefits like stock options or defined benefit pensions undoubtedly involve sacrifice when leaving an organisation (Mallol et al 2007).

8 Conclusions, implications and recommendations

Overall, the study contributed valuable new knowledge that may be used to inform organisational retention strategies in the South African medical and information technology services work setting. The results indicate that the participants' feelings of organisational commitment significantly influenced their perceived job embeddedness and vice versa. The different gender, marital status, tenure and job level groups tend to differ significantly regarding their organisational commitment and sense of job embeddedness. In the light of South Africa's diverse multicultural workforce, the observed differences between the biographical groups' organisational commitment and job embeddedness need to be considered when adopting strategies for retaining critical and scarce skills in the medical and IT services environment. The current study has confirmed that the closer the match between employees and the job or organisation, the more likely it is that employees will be committed to the organisation. This results in tenured staff and the retention of critical skills (Mohlala et al 2012).

The results suggest that human resource retention practices should be implemented that increase the perceived sacrifice (in terms of compensation and benefits) and the perceived fit (compatibility between the individual's career and job satisfaction needs and the organisation's cultural values and practices) for employees with critical and scarce skills, especially in the case of female, single and divorced participants, those with less than five years' tenure and those functioning at an operational level. Strengthening these employees' sense of job embeddedness by increasing the forces that keep them strongly connected to their jobs and the company may lead to greater commitment levels and an incentive to stay with the respective organisation.

Based on the results of the current study, it is suggested that human resource retention practices for staff members with scarce and critical skills in the medical and IT services environment should emphasise competitive remuneration, monetary and non-monetary benefits and rewards, performance management initiatives that enhance person-job fit and person-organisation fit, morale, motivation and interpersonal relationship building initiatives. The intention is therefore to create positive emotional bonds between people, supervisor and peer support, mentoring and coaching and career advancement planning.

According to Muteswa and Ortlepp (2011), employees with critical skills leave organisations in South Africa because of poor relationships between the employee and his/her immediate manager; a lack of career advancement plans; a poor match between the employee and the job or organisation; uncompetitive compensation; rewards (bonuses and incentives) that are not linked to performance; the need to have stimulating and meaningful work; a lack of appreciation, recognition and rewards; insufficient coaching and feedback; aspects related to the dynamics of the work team; and insufficient alignment between the employee's work and the achievement of organisational objectives. Lesabe and Nkosi (2007) also suggest that compensation, benefit packages, morale and motivation, career development, leadership, nature of the job itself, training and development, performance management and work environment all have a bearing on an organisation's ability to retain employees.

9 Limitations and recommendations for future research

As with all studies, the current study was subject to certain constraints. The major constraint in this study was that it was conducted in a single company. The study would have been more authoritative had more than one company been used for the investigation. Further, the study would have been more beneficial if the data analysis had differentiated between the medical and the IT staff, as it would have given a better indication of which group of specialised staff would be more inclined to leave the organisation. A random sampling method, as opposed to the purposive sampling method applied here, might have rendered results that were more generalisable to the industry as a whole. Owing to the limited scope of the study it is recommended that further studies be undertaken in order to address these limitations. In addition, it is recommended that the environmental dimension of job embeddedness be included to add depth to the study and to provide a more holistic view of job embeddedness with regard to organisational commitment and retention strategies.

However, despite these limitations, the results of this study show potential for the analysis of the relationship between organisational commitment and perceived job embeddedness, as well as differences between the biographical groups' experiences of these constructs in the South African services industry. The study is original research that adds new insights to the psychological factors that influence the retention of critical and scarce skills in a South African medical and IT services company. The results of this study may be used as a basis for informing effective human resource retention strategies.

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