

Satisfaction with retention factors as predictors of the job embeddedness of medical and information technology services staff

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ABSTRACT

The objective of the study was to determine whether employees' satisfaction with retention factors (measured by the Retention Factors Scale) significantly predicted their job embeddedness (measured by the Job Embeddedness Scale). A quantitative survey was conducted on a purposive sample ($n=206$) of early career medical and information technology services staff, identified as scarce skills in a South African client services company. Retention factors such as training and development, career opportunities, supervisor support and the characteristics of the job (skills variety, challenge and autonomy) were shown to significantly predict the participants' sense of job embeddedness. Satisfaction with training and development opportunities was the best predictor of organisational fit, while satisfaction with career opportunities was the best predictor of organisational sacrifice. The findings add valuable new knowledge that may be used to inform retention strategies for professional staff with scarce skills in the medical and information technology services sector.

Key words: retention factors, perceived job embeddedness, training and development, career opportunities, job characteristics, supervisor support

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Introduction

Research has shown that medical (Hill 2011; Holtom & O'Neill 2004) and information technology (IT) professionals have a strong tendency to leave the organisations for which they work (Korunka, Hoonakker & Carayon 2008) and the country where they live (Bezuidenhout, Joubert, Hiemstra & Struwig 2009; Rasool & Botha 2011; Statistics South Africa 2005). Professionals such as these are regarded as 'intellectual capital' and are necessary in the knowledge economy; therefore, understanding and managing their turnover can have significant consequences for the organisation's competitive advantage (Niederman, Sumner & Maertz 2007; Powell & Snellman 2004). Consequently, the organisation's ability to retain employees by providing a satisfying work environment has gained great importance. However, employees may still leave a highly regarded organisation to join an organisation that is perceived to have attractive alternative opportunities (Jiang & Klein 2001). Although varying in intensity, the personal and organisational costs of leaving a job are often high and disruptive (Holtom & Inderrieden 2006; Mitchell, Holtom, Lee, Sablynski & Erez 2001).

Apart from the positive impact on an organisation, the retention of loyal, highly skilled and productive professionals has economic implications for both the organisation and, increasingly, for the country's economy as a whole (Roos & Van Eeden 2005). The loss of medical and information technology (IT) personnel with highly specialised skills has a severe impact on the competitive advantage and the ultimate survival of organisations in these fields, as it may be costly to replace and train new employees in these industries (Holtom & O'Neill 2004; McKnight, Philips & Hardgrave 2009; LeRouge, Nelson & Blanton 2006). Retention factors (such as compensation, job characteristics, training and development opportunities, supervisor support, career opportunities and work-life balance) have been shown to facilitate employees' decisions to leave or stay (Döckel 2003; Netswera, Rankhumise & Mavundla 2005). In addition, a high level of job embeddedness (that is, the combination of organisational forces that keep a person from leaving his or her job) can serve as a buffer to shocks and dissatisfaction, which are precursors to turnover (Holtom & Inderrieden 2006; Holtom, Mitchell & Lee 2006; Yao, Lee, Mitchell, Burton & Sablynski 2004). Research provides evidence of a significant negative relationship between employees' turnover intention and their job embeddedness (Burton, Holtom, Sablynski, Mitchell & Lee 2010).

In light of the growing concerns about retaining staff with scarce skills in the medical and IT services industry (Holtom & O'Neill 2004; McKnight et al. 2009; LeRouge et al. 2006), it seems important to explore how employees' satisfaction with organisational retention factors influences their sense of job embeddedness.

Staff satisfaction with organisational retention factors is increasingly recognised by organisations as important in the retention of valuable and talented staff (Döckel 2003).

Research objective

This research set out to examine whether the satisfaction of employees (who were identified to have scarce skills in the medical and IT services sector) with retention factors significantly and positively predicts their job embeddedness. Employees' satisfaction with retention factors and their job embeddedness have been shown to influence their commitment and decision to stay in an organisation (Burton et al. 2010; Döckel 2003; Holtom & Interrieden 2006; Holtom et al. 2006; Netswera et al. 2005; Yao et al. 2004). Should the results reveal a significant relationship between the variables, the findings may potentially contribute to the advancement of organisational retention practices aimed at facilitating the decision of employees to stay in the organisation.

Retention factors

'Retention' refers to an organisation's efforts to keep in employment those employees of whom the organisation has a positive evaluation, who would normally only leave the organisation through voluntary resignation (Mengel 2001). Thus, employers need to retain their high performers who have knowledge and skills that are critical for the organisation to maintain a competitive advantage. In addition, Cascio (2003) describes 'retention' as initiatives taken by management to keep employees from leaving the organisation, such as rewarding employees for performing their jobs effectively; ensuring harmonious working relations between employees and managers; and maintaining a safe, healthy work environment.

Netswera et al. (2005) suggest that retention factors influence the turnover intentions of employees (i.e. their intent to leave the organisation) and should be considered in the design of retention strategies. While the importance of employee retention to organisational effectiveness and efficiency is clear, there is currently no single framework that guides research and practice (Cardy & Lengnick-Hall 2011). Regardless of which theoretical model is considered, there are situations in which voluntary employee turnover may be unavoidable and beyond the control of management (Dalton, Todor & Krackhardt 1982). Accordingly, the focus of this study was on factors that management can control and that may influence workers to stay with the organisation. In order to improve our understanding of the effectiveness of

retention factors, it is important to relate these factors to employees' satisfaction with them and how they influence employees' sense of job embeddedness as an important aspect of their decision to stay or leave.

Döckel (2003) identified six factors that may aid in the retention of valuable professional employees in the South African organisational context, as summarised in Table 1. The following six retention factors are therefore relevant to this study: compensation, job characteristics, training and development opportunities, supervisor support, career opportunities and work–life balance.

Table 1: Retention factors identified by Döckel (2003)

Retention factors relevant to the South African context	Frequency of factors in high-technology literature	Rank order of frequency
Training and development opportunities	32	1
Supervisor support (behaviour/ support or feedback)	25	2
Career opportunities (internal to the organisation)	23	3
Job characteristics (skills variety, autonomy, challenge)	52	4
Work-life balance	19	5
Compensation (base salary)	14	6

Compensation

Compensation refers to the competitiveness of a company's remuneration packages (base salary, benefits and incentives), the company's remuneration policy and salary increases (Döckel 2003). Both monetary and non-monetary rewards and incentives can enhance employees' motivation and attachment to the organisation (Bergiel, Nguyen, Clenney & Taylor 2009; Döckel 2003). Research findings suggest that there is a significant and positive relationship between compensation and job embeddedness (Bergiel et al. 2009). Accordingly, it would seem that the higher the compensation, the greater the losses employees would feel if they leave the organisation (Holtom et al. 2006).

Job characteristics

In the context of the present study, job characteristics refer to the positive aspects of the job. Job characteristics may include varied work, opportunities to solve challenging problems, opportunities to work with the best people, freedom, flexibility and being able to pursue interesting assignments (Döckel 2003). Job characteristics that lead to feelings of increased competence and meaningfulness of work were found to increase the retention of employees (Döckel 2003).

Training and development opportunities

Providing employees with sufficient training opportunities should be viewed as an essential investment strategy for employee growth and development (Döckel 2003; Kraimer, Seibert, Wayne, Liden & Bravo 2011). This practice constitutes an important part of the organisation's fulfilment of the informal contract between itself and employees, which deepens employees' sense of attachment to the organisation (Bergiel et al. 2009). With the job embeddedness construct, training and development opportunities should improve the fit between the employee and the job, as well as represent a sacrifice that must be experienced if the employee chooses to take employment elsewhere (Mitchell et al. 2001).

Supervisor support

Supportive supervisors are perceived by employees as valuing a follower's contribution and caring about the wellbeing of the follower (Rhoades & Eisenberger 2002). Different research studies indicate that supervisor support, which includes recognition and feedback to employees, has a positive effect on the retention of valuable employees (Allen, Shore & Griffeth 2003; Bergiel et al. 2009).

Career opportunities

Career opportunities may include the internal and external career options that an employee may have. Internal career opportunities may be in the employee's current organisation, for example, a promotion or movement to a different position within the same organisation. External career opportunities would mean obtaining a position at another organisation (Coetzee & Roythorne-Jacobs 2012). These career orientations of employees may reflect an employee's perceived compatibility or comfort with an organisation (Mitchell et al. 2001).

Work-life balance

In the context of the present study, work-life balance refers to perceiving a satisfactory balance between one's personal life and work schedule, and minimal conflict between the multiple roles one has to fulfil in terms of one's personal and work lives (Döckel 2003). Parkes and Langford (2008) describe work-life balance as an individual's ability to meet both his or her work and family commitments, as well as other non-work responsibilities and activities. In addition, Munsamy and Bosch-Venter (2009) state that the focus of work-life balance is on the notion of a flexible and stress-free work environment by making provision for childcare facilities and access to families. Increasing flexibility around work has therefore become more important to dual-income families. As a result, organisations may be perceived as concerned employers, which positively influences employees and a positive attitude towards the organisation (Döckel 2003).

Job embeddedness

People become embedded in the job in many ways, depending on circumstances, age, gender and other variables. Job embeddedness is defined as "the combined forces that keep a person from leaving his or her job" (Yao et al. 2004: 159). Perceived job embeddedness consists of the organisational dimension and the community dimension, including three sub-dimensions: fit, links and sacrifice, as illustrated in Figure 1. These three sub-dimensions over-arch with the two dimensions: organisation (on-the-job) and community (off-the-job) to generate six dimensions of the job embeddedness construct: fit-organisation, fit-community, links-organisation, links-community, sacrifice-organisation and sacrifice-community. Researchers found that when job relocation is not a factor, the organisational dimension predicts employee retention better than does the community dimension (Allen 2006; Lee, Mitchell, Sablinski, Burton & Holtom 2004).

On the basis of the definition of Mitchell et al. (2001), perceived job embeddedness will be viewed as the employee's perceived fit with his or her job (person-job fit); employee's perceived fit with the organisation (person-organisation fit); employee's perceived link with his or her job (person-job link); employee's perceived link with his or her current organisation (person-organisation link); employee's perceived cost of leaving his or her current job (person-job sacrifice) and employee's perceived cost of leaving his or her current organisation (person-organisation sacrifice). However, as only organisational aspects (i.e. retention factors) are being investigated, this study focuses only on on-the-job job embeddedness dimensions (fit and sacrifice), and off-the-job community embeddedness falls outside the scope of the study reported here.

Fit-organisation

Fit-organisation represents an employee's perception of compatibility with his or her organisation or environment (person–job fit and person–organisation fit); higher fit indicates higher embeddedness (Holtom et al. 2006). The employee's values, career goals and plans for the future must fit with the larger corporate culture as well as the demands of the immediate job (for example, job knowledge, skills and abilities) (Mitchell et al. 2001).

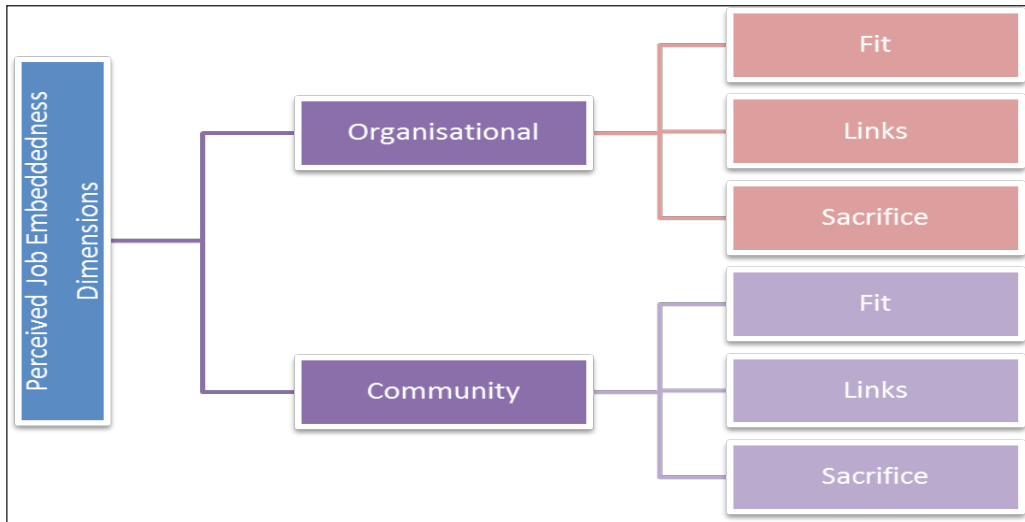
Links-organisation

Likewise, links are characterised as formal and informal connections between a person and institutions or other people (Mitchell et al. 2001). Links are viewed as threads that connect an employee with his or her work team members, supervisors or colleagues. Thus, as the number of those links increases, embeddedness is higher (Holtom et al. 2006).

Sacrifice-organisation

Finally, sacrifice (person–job sacrifice and person–organisation sacrifice) represents the perceived cost of monetary and non-monetary benefits that are forfeited by organisational departure (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 et al. 2006).

Unlike turnover theories that rely on affective predictors of turnover, job embeddedness is a prescriptive theory. Accordingly, it would seem that management needs specific and accessible levers (such as, for example, retention factors) for influencing turnover. Organisational job embeddedness can be manipulated by increasing the use of work teams or providing work, salary and benefit flexibility that most employees would not want to sacrifice (Bowman 2009). In the context of the present study, job embeddedness is seen as the result of positive forces that keep employees in their jobs (Ng & Feldman 2009). For instance, employees often value developing close ties with co-workers and work groups (links). Moreover, individuals are usually pleased to find jobs that are compatible with their goals and values (fit) and that provide desirable perks (sacrifice) (Ng & Feldman 2009, 2010). Thus, embeddedness can be a good thing for both the employee and employer, particularly when it is borne in mind that turnover is expensive, especially when it entails replacing highly trained employees or employees who cannot easily pass on their knowledge to their replacements (Johnson, Sachau & Englert 2010).



Source: Based on Mitchell et al. (2001)

Figure 1: Dimensions of perceived job embeddedness

Considering also that research shows that both retention factors (Döckel 2003; Netswera et al. 2005) and job embeddedness (Burton et al. 2010) are related to employees' turnover intentions and that organisational retention factors can be used as accessible levers for influencing turnover intention, it is therefore hypothesised that employees' satisfaction with retention factors may significantly and positively influence their job embeddedness. This leads to the following research hypothesis:

H₁: Individuals' satisfaction with retention factors significantly and positively predicts their job embeddedness.

The next section discusses the research approach and method that were followed to test the research hypothesis.

Research design

Research approach

A quantitative cross-sectional survey design using primary data was used to fulfil the research objective.

Participants

An initial purposive sample ($n = 843$) was drawn from the entire population of 2170 professional and managerial level staff identified as having scarce skills in the medical and information technology services company. They were all invited to participate in the study. The final sample that voluntarily participated in the study yielded a response rate of 24.44% ($n = 206$).

The sample was skewed towards females (73%) in the early career stage, that is, between the ages of 30 and 49 years (70%). Whites represented 53% and blacks 47% (Africans 13%; coloureds 22%; Asians 12%) of the sample. The majority of the participants had a post-matriculation qualification (77%). The participants' length of employment in their current position ranged between one and five years (77%), between six and ten years (17%), and more than 11 years (6%). The participants were employed at a professional level (69%), with 31% being at management level.

Measuring instruments

The Retention Factors Scale (RFS) (Döckel 2003) was used to measure the participants' satisfaction with regard to the retention factors. The RFS is a self-report measure that contains 40 items measuring satisfaction with six retention factors: (1) compensation (13 items, for example, "satisfaction with my current total salary package – base pay, benefits and incentives"); (2) job characteristics (four items, for example, "the job requires me to use a number of complex or high-level skills"); (3) training and development opportunities (seven items, for example, "there are enough development opportunities for me in this company"); (4) supervisor support (six items, for example, "my supervisor often lets me know how well he thinks I am performing on the job"); (5) career opportunities (six items, for example, "there are enough career opportunities for me in this organisation"); and (6) work–life balance (four items, for example, "my work schedule is often in conflict with my personal life"). Responses were captured on a six-point Likert scale. The RFS has evidenced good psychometric validity and reliability in other South African multicultural samples (Döckel 2003; Döckel, Basson & Coetzee 2006). Medium to high Cronbach's alpha coefficients (internal consistency reliability) were obtained for the present study: compensation (0.95), job characteristics (0.67), training and development opportunities (0.88), supervisor support (0.83), career opportunities (0.73) and work–life balance (0.88).

The Job Embeddedness Scale (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 (seven items, for example, "my values are compatible with the organisation's values"), sacrifice (ten items, for example, "I

would sacrifice a lot if I left this job”) and links (six items, for example, “how many coworkers are highly dependent on you?”). The JES (Mitchell et al. 2001) comprises two dimensions, namely organisational and community dimensions. Researchers have found that the organisational dimension better predicts employee performance than the community dimension does (Allen 2006; Halbesleben & Wheeler 2008; Lee et al. 2004). For the purposes of the present study, the examination was limited to the organisational dimensions relating to the individual’s perceived organisational fit and sacrifice. High Cronbach’s alpha coefficients (internal consistency reliability) were obtained for the present study: organisation fit (0.83) and organisation sacrifice (0.87). The overall internal consistency reliability coefficient for the JES was 0.91.

Research procedure

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

Statistical analysis

The Statistical Program for Social Sciences (SPSS 2008) was used to analyse the data. Cronbach’s alpha coefficients were used to assess the internal consistency of the measuring instruments. Descriptive statistics and standard multiple regression analysis were conducted to identify the RFS variables that predicted or provided the best explanation for the portion of the total variance in the scores of the dependent variables (the JES variables). A number of independent (RFS) variables had to be considered, and therefore the value of the adjusted R^2 was used to interpret the results. The F-test was used to test whether there was a significant regression between the independent and the dependent variables. For the purposes of this study, R^2 values

larger than 0.13 (medium effect) were regarded as practically significant (Cohen 1992).

Research results

Descriptive statistics

Table 2 summarises the descriptive statistics and Cronbach's alpha coefficients for the subscales of the measuring instruments. The RFS job characteristics subscale ($M = 4.53$; $SD = 1.06$) obtained the highest mean score. The lowest mean score was obtained on the training and development subscale ($M = 3.47$; $SD = 1.30$). In terms of the JES, Table 2 shows that the highest mean score obtained was on the organisation fit subscale ($M = 4.71$; $SD = 0.88$).

Table 2: Means, standard deviations and Cronbach's alpha coefficients ($n = 206$)

Variables	Mean	SD	Cronbach's alpha coefficient
Retention Factors Scale (scale overall)			0.93
Compensation	3.53	1.18	0.95
Job characteristics	4.53	1.06	0.67
Training and development opportunities	3.47	1.30	0.88
Supervisor support	4.23	1.17	0.83
Career opportunities	3.59	1.00	0.73
Work-life balance	3.95	1.41	0.88
Job Embeddedness Scale (scale overall)			0.91
Perceptions of organisation fit	4.71	0.88	0.83
Perceptions of organisation sacrifice	3.70	1.02	0.87

Multiple regression analysis

In terms of the RFS and JES variables, three statistically significant regression models explaining 47% to 63% of the variance in the JES variables were produced. Table 3 reports only the significant results and shows that the regression models explain large ($R^2 \geq 0.26$; $p \leq 0.001$) practical effect percentages of the variance in the JES as

dependent variable. Table 3 shows that the training and development opportunities ($\beta = 0.24$; $p \leq 0.00$), job characteristics ($\beta = 0.20$; $p \leq 0.00$) and career opportunities ($\beta = 0.23$; $p \leq 0.00$) retention factor variables contributed significantly and positively to explaining the variance in perceived overall job embeddedness.

Table 3 shows that the training and development opportunities ($\beta = 0.24$; $p \leq 0.00$), job characteristics ($\beta = 0.23$; $p \leq 0.00$) and supervisor support ($\beta = 0.12$; $p \leq 0.04$) retention factor variables contributed significantly and positively to explaining the variance in organisational fit. Table 3 further shows that the career opportunities ($\beta = 0.26$; $p \leq 0.00$), training and development opportunities ($\beta = 0.22$; $p \leq 0.00$) and job characteristics ($\beta = 0.13$; $p \leq 0.01$) of the retention factor variables contributed significantly and positively to explaining the variance in organisational sacrifice.

The results provide support for hypothesis H₁: Individuals' satisfaction with retention factors significantly and positively predicts their job embeddedness.

Discussion

Overall, the results suggest that the participants' satisfaction with training and development opportunities, career opportunities and the characteristics of their jobs (autonomy, skills variety and challenge) significantly and positively predicted their perceived job embeddedness (organisational fit and sacrifice). Satisfaction with training and development opportunities was the best predictor of overall job embeddedness and organisational fit, while satisfaction with career opportunities was the best predictor of organisational sacrifice. Satisfaction with supervisor support significantly predicted the participants' sense of organisational fit.

Satisfaction with training and development opportunities and job embeddedness

The participants' satisfaction with training and development opportunities significantly and positively predicted their overall sense of job embeddedness, the perceived fit between their personal values and those of the organisation and what they would have to sacrifice should they decide to leave the organisation. Training and development opportunities include individuals' need for professional development and job-specific training, and opportunities to apply the newly gained skills and knowledge on the job (Döckel 2003). Du Toit and Coetzee (2012) found employees' need for learning, developing and applying new knowledge and skills in the workplace to be positively related to their perceptions of subjective career success. Training and development opportunities have also been related to commitment, which may lead to higher chances of retention (Baruch 2004; Tladinyane 2012).

Table 3: Significant multiple regression analysis: satisfaction with retention factors (RFS) on job embeddedness (JES) ($n = 206$)

Model	Variable	Unstandardised coefficient		Standardised coefficient	t	p
		<i>b</i>	SE <i>b</i>	β		
1	Total perceived job embeddedness (constant)	1.01	0.19		5.18	0.00
	Training and development opportunities	0.16	0.03	0.24	4.50	0.00
	Job characteristics	0.16	0.03	0.20	4.44	0.00
	Career opportunities	0.20	0.04	0.23	4.18	0.00
	Adjusted $R^2 = 0.63+++$; $F(p) = 86.1***$ $R = 0.79$					
2	Organisational fit (constant)	b 1.92	SE b 0.23		8.32	0.00
	Training and development opportunities	0.16	0.04	0.24	4.10	0.00
	Job characteristics	0.19	0.04	0.23	4.26	0.00
	Supervisor support	0.09	0.04	0.12	2.12	0.04
	Adjusted $R^2 = 0.47+++$; $F(p) = 45.1***$ $R = 0.69$					
3	Organisational sacrifice (constant)	0.38	0.24		1.57	0.00
	Career opportunities	0.26	0.06	0.26	4.34	0.00
	Training and development	0.17	0.04	0.22	3.84	0.00
	Job characteristics	0.13	0.04	0.13	0.13	0.01
	Adjusted $R^2 = 0.56+++$; $F(p) = 67.5***$ $R = 0.69$					

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$
 + $R^2 \leq 0.12$ (small practical effect size)
 ++ $R^2 \geq 0.13 \leq 0.25$ (medium practical effect size)
 +++ $R^2 \geq 0.26$ (large practical effect size)

Satisfaction with career opportunities and job embeddedness

Career opportunities relate to the participants' satisfaction with the chances of internal promotion, career development support and opportunities for further growth and advancement within the company (Döckel 2003). Satisfaction with career

opportunities significantly influenced the participants' overall job embeddedness and perceptions of the company benefits (that is, compensation, retirement and continued employment) that they would have to sacrifice should they decide to leave the organisation. João (2010) found in this regard that the need for career growth and advancement opportunities and challenging work were significant factors that keep professionally qualified employees from leaving their organisations. A lack of growth opportunities (perceived career advancement, and training and development opportunities) has been found to have a negative influence on an individual's attitude towards the organisation, which in turn influences the intention to leave, leading to turnover behaviour (Allen et al. 2003; Vallabh & Donald 2001).

Satisfaction with job characteristics and job embeddedness

The results indicated that positive job characteristics such as autonomy, independence, freedom, variety, application and use of complex, high-level skills on the job (Döckel 2003) significantly influenced the participants' perceived job embeddedness and sense of organisational fit and sacrifice. Job variety, learning opportunities and autonomy play an intrinsic motivational role by fostering employees' growth, learning and development (Coetzer & Rothmann 2007). Lumley (2009) found employees' satisfaction with job characteristics to be related to their job satisfaction. Döckel (2003) posits that job characteristics lead to feelings of increased competence and meaningfulness. These feelings could have increased the participants' sense of embeddedness in their jobs and organisations in terms of their fit and the perceived benefits that they would have to sacrifice should they decide to leave the organisation or their jobs. Shaw, Delery, Jenkins and Gupta (1998) found that the more an employee feels he or she has to sacrifice when leaving the organisation, the more difficult it is to sever employment with the organisation.

Satisfaction with supervisor support and job embeddedness

The present study indicated that supervisor support positively enhanced the participants' feelings of organisational fit. Such feelings include satisfaction with the feedback provided by the supervisor, feeling valued by the supervisor, and being rewarded and recognised for ideas and work well done (Döckel 2003). Positive supervisor behaviours seemed to have increased the participants' sense of fit between their personal values and the perceived organisational culture and values. Shared values, that is, alignment between the personal values and expectations of employees and those of the organisation, generally result in positive work attitudes, organisational

commitment, performance and intention to stay (Amos & Weathington 2008). Allen et al. (2003) also found supervisor support in the form of recognition and feedback to positively influence employees' intention to stay.

Limitations and recommendations

The sample was not representative of the South African population in terms of gender, age, race, marital status, tenure or job level groups, thus reducing the power of this study and the potential to generalise the results to other occupational groups and industries. A random sampling method, as opposed to the purposive sampling method applied here, may also have rendered more generalisable results. Despite these limitations, the results of this study show potential for the analysis of the relationship between individuals' satisfaction, and retention factors and their perceived job embeddedness.

Owing to the limited scope of the study, it is strongly recommended that further studies be undertaken involving other occupational groups in order to address the limitations of the present study. In addition, it is recommended that the links and environmental dimensions of job embeddedness be included to add depth to the study, and provide a more holistic view of job embeddedness with regard to retention factors.

Conclusions and implications for practice

Overall, it can be concluded that individuals' satisfaction with organisational retention factors (training and development, career development, positive job characteristics and supervisor support) significantly and positively enhance their sense of job embeddedness. These retention factors can be considered to increase the sense of job embeddedness of employees with scarce skills in the medical and IT services industries, with a view to retaining these employees. Given the paucity of research on the retention factors that may assist in retaining staff with scarce skills in the medical and IT services industries, the findings of the study contribute valuable new knowledge to the retention literature. The findings of the study may be utilised as a basis for understanding the relationships between the satisfaction of valuable, scarce-skilled employees' retention factors, and their sense of job embeddedness, in order to inform the formulation of effective retention strategies in the South African organisational context.

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