

## #14 ‘SHOULD I STAY OR SHOULD I GO?’ – ANTECEDENTS OF TURNOVER INTENTIONS OF IT STAFF IN SOUTH AFRICA

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### ABSTRACT

Skilled IT staff are a scarce human resource in organisations around the world and turnover rates are higher than for many other professions. Understanding the determinants of IT staff intentions to leave are critical to understanding the industry as well as for managers wanting to keep their IT talent. The purpose of this paper is to investigate the antecedents of intentions to leave as reported by IT employees in South Africa. This is investigated quantitatively using the data set acquired through the World IT Project. The mediating role of job satisfaction is explored in depth and a large set of independent constructs including individual and organisational demographics, aspects of IT occupational culture, and various IT issues experienced are investigated. A good model fit was found to explain both job satisfaction and intention to leave the organisation

### INTRODUCTION, PURPOSE AND RESEARCH QUESTIONS

The study reported on in this paper forms part of a larger research project, the World IT Project. This project is the largest undertaken within the IS field and its primary aim was to obtain empirical findings that are not biased towards only American and Western views but instead presents a global view of IT/IS issues (Palvia et al. 2017). The main objective of the wider project is to understand the role of personal and organisational factors in a modern, IT global work environment. The results reported on in this paper are based on data obtained from a survey of 301 IT professionals in South Africa. The study was done from the perspective of the employees who are closer to the IT profession and the findings are therefore not highly influenced by management or other stakeholders. Whilst several studies have reported on turnover intentions amongst IT professionals in other countries, and some studies conducted in South Africa in a diverse range of industries (Stoermer et al. 2017), no studies were specific to IT staff turnover in South Africa were identified at the time of writing this paper. The research questions to be answered in this paper are:

- What are the personal and organisational factors, including IT occupational cultural and personal IT issues, influencing IT staff's job satisfaction?
- What are the antecedents of the turnover intention of IT staff?
- How strong is the role of job satisfaction on IT staff turnover intention?

### LITERATURE REVIEW

One of the issues faced by organisations in the IT industry is to become employers that proactively attract, develop and retain valuable talent that can contribute to the greater success of the organisation (Joo and Park 2010). Therefore a sound understanding of the factors influencing turnover is important since they can impact the expected financial performance of an organisation (Lambert et al. 2001). As noted by the U.S Department of Commerce (1997; 1999), job satisfaction, turnover intention and turnover are important human resources (HR) indicators for the IT industry. Turnover rates, employee retention amongst IT professions and the factors influencing these have become popular research topics due to high levels of career abandonment in this industry (Colomo-Palacios et al. 2014; Palvia et al. 2017). Knowledge of these issues are important for managing IT staff and for organisational survival and competitiveness (Jiang and Klein 2002). Understanding turnover may offer managers a better understanding of how to retain valuable talent that ultimately contributes to the greater success of the organisation (Joo and Park 2010).

One of the most commonly reported factors influencing turnover is turnover intention (Lee and Mowday 1987; Michaels and Spector 1982; Mobley et al. 1979). Turnover intention is defined as the degree of resolution to leave an organisation (Mobley et al. 1978). More recently, Lu and Gursoy (2016) describe turnover intention as the “last

in a sequence of withdrawals” that ultimately result in an employee looking for employment elsewhere or a dissatisfied employee within the ranks of the organisation.

In addition to turnover intention, three other primary antecedents of turnover have been reported. These are job satisfaction, work environment factors and demographic characteristics (Mobley et al. 1979). The strong relationship between job satisfaction and turnover intention was confirmed in a large, comprehensive, cross-sectional survey study conducted nationally in the U.S.A (Lambert et al. 2001). In other studies (Joo and Park 2010; Moore 2000a; Moore 2000b) job satisfaction has been reported as a strong antecedent of turnover. A study conducted amongst teachers in Pakistan, confirmed that turnover intention is strongly influenced by job/career satisfaction (Shah and Jumani 2015). More recently, a study in the hospitality industry by Lu and Gursoy (2016) confirmed that there is a significant negative relationship between job satisfaction and turnover intention.

Job/career satisfaction is one of the most important constructs reported in management literature (Joo and Park 2010; Judge et al. 2001; Judge and Ilies 2004) and is defined as a reaction to a project or job, through an affective or emotional reaction culminated from the comparison of actual outcomes against the required outlined outcomes (Locke 1976). That is, in exchange for their employment, employees expect a combination of incentives that preferentially distinguishes them from their colleagues (Egan et al. 2004). Similarly, Buitendach and de Witte (2005) describe job satisfaction as the evaluation and perception of an employees’ job that is influenced by the unique needs, circumstances, values and expectations that are faced by employees in their work environments. In further appreciating job satisfaction, researchers and managers should acknowledge that job satisfaction does not exist in a vacuum (Egan et al. 2004). In a study conducted in a Korean context, organisational commitment was a significant predictor of turnover intention (Joo and Park 2010). Another reported antecedent of job satisfaction is job insecurity (Greenhalgh and Rosenblatt 1984; Serenko et al. 2015). Job security is described as including “those features of the job situation which lead to assurance for continued employment, either within the same company or within the same type of work or profession” (Herzberg et al. 1959). This definition focuses on continuity of employment as the main core of job security. It also suggests a useful distinction between organisational security and occupational or professional security. Job security has also been shown to be impacted by different organisational phenomena. These include organisational climate (Boss et al. 1979) and job enrichment (Fein 1974), amongst others.

In the Canadian study of the World IT project (Serenko et al. 2015), responses to the survey were obtained from 311 IT professionals. The results revealed that job insecurity decreases job satisfaction and has an impact on two types of turnover intention, organisational turnover intention and IT occupation turnover intention. When IT employees feel threatened in their current job, they reduce their loyalty to their current employers and start looking for employment in alternate positions in the IT industry and sometimes even in other industries. The results also revealed that job satisfaction directly impacts both organisational turnover and IT occupation turnover intentions and that the relationship between job satisfaction and turnover intention is stronger at the level of the organisation than at the occupational level. This could be because IT employees that are not satisfied in their job may find it easier and less stressful to seek a new job in the same industry rather than to move out of the IT industry altogether. Lastly, the study findings revealed that employees who had never been laid off from an IT position had a positive relationship between job insecurity and intentions to leave their occupation.

Studies suggest that the ICT professional in South Africa, particularly those in lower levels (e.g. helpdesk tech support and IT technicians), do not feel adequately compensated nor respected for the work they perform. Jackson (2014) makes an explanation to this from the viewpoint of the weakness of trade unions for these conditions. He postulates that there are generally weak trade unions and ineffective institutionalised regulatory processes for collective bargaining and dispute resolution with many organisations perceiving trade unions with suspicion (Jackson 2014). Many foreign organisations in need of local skills such as in ICT have taken advantage of the institutional weakness to adopt low wage – low cost strategies. The controversies around these strategies often involve accusations of foreign exploitation of local workers (Horwitz 2017).

## **RESEARCH METHODOLOGY**

This research took a positivist stance towards explaining the intention of IT staff to leave their organisation or even exit the IT industry. Quantitative data was collected from IT employees by means of a survey using a cross-sectional time-frame. The sampling approach was a mixture between stratified, convenience and purposive sampling. The

WorldIT project focusses on larger organisations and the three South African-based (“local”) researchers were each allocated a geographic region of the country based on the location of their home university. The researchers used their personal contact lists to target both large organisations as well as individuals.

The rather long instrument was a standardised questionnaire designed and prescribed by the WorldIT project to allow for international comparability. For most of the attitudinal variables used in this paper, a Likert scale response was required. The motivation for and list of constructs used, as well as their sources, is described in detail in Palvia et al. (2017). The instrument was presented as an online survey (205 responses) as well as a paper-based format (105 responses). Only nine of the responses had to be excluded because of insufficient quality. Generally the quality of responses was very high as evidenced in a number of validity tests as well as the high reliability of sub-construct test items where some were phrased negatively. Statistica was used for statistical analysis and MS-Excel for some of the descriptive analysis. Ethics approval was obtained from the respective home universities of the researchers as well as the corporates who agreed to participate officially (i.e. in a named capacity) with the survey.

## **DATA ANALYSIS AND DISCUSSION**

### **Descriptive Analysis**

Although 310 responses were received, nine were rejected due to quality issues, resulting in 301 usable responses. Respondents were generally young (38% aged 30-39 years and a further 32% aged 21-29), mostly male (72%) and well-educated (48% has a bachelor’s degree, 16% a masters or PhD with only 11% a high-school or less). This corresponds well with the IT industry’s overall demographic profile and thus our sample can be seen to be representative of the IT industry, albeit with perhaps a slight bias towards better educated employees. The respondents appear to be fairly experienced with one-third of respondents having between 10 and 19 years of work and IT experience. Most work for large organisations i.e. those with more than 1000 employees but with medium- sized IT departments (51 to 100 IT staff). This represents a bias towards the larger organisations in line with the intended focus of the world IT survey. However, our sample still contains a significant number of employees working in small and medium-sized organisations.

Encouragingly, only 36 respondents (12%) intend to leave their current employer before the next year although a further 31 respondents (an additional 11%) thinks of leaving by the following year and the figure increases marginally to a total 27% intending to leave within 5 years. This compares fairly favourably with the current perception around high staff turnover. However, in both cases, a quarter of respondents is undecided about their intention to leave in the next two years and less than 32% is confident that they will still work for the same employer in five years’ time.

### **Reliability and Validity Analysis**

Reliability and validity analysis was performed for the multi-item perception items namely IT culture and individual issues. The test items for the individual issues generally loaded almost perfectly on their respective constructs (Table omitted due to space limitations). This testifies to the high quality of the data set, especially since a number of test items were reverse-coded. The independent variables of work load, work/home balance, strain, professional self-efficacy as well as the mediating job satisfaction and the dependent variables (intention to leave employer or IT occupation turnover intention) all load perfectly on a single, separate factor. The only exception is job (in)security where test item 148 did not load and was omitted for subsequent analysis.

### **Determinants of IT Job Satisfaction**

Although the main focus of the paper is the determining of the antecedents of organisational IT staff turnover as measured by the intention to leave, IT job satisfaction has been singled out in prior studies as the most important determinant and can be seen as a critical mediating factor for a number of other variables. Thus the antecedents of IT job satisfaction are important.

Correlation analysis uncovered the following highly and significantly correlated constructs, in order of magnitude of the Pearson correlation coefficient:

- A strong negative correlation (-0.44) with *strain*: the degree of strain experienced by employees is the most highly (negatively) correlated independent variable with job satisfaction. Although the correlation itself is intuitively evident, the important fact remains that it is the most important determinant.
- A good positive correlation (+0.38) with professional self-efficacy: the more positive self-perceived self- efficacy is, the higher the job satisfaction.
- A small but still very significant negative correlation (-0.26) with work/home conflict.
- A small correlation (+0.25) with how much fun/joy (working in) the IT department (culture) is: the pre-occupation of high tech organisations with making the workplace fun seem to be vindicated by this high positive correlation.
- A significant negative correlation (-0.22) with work load. Although the negative correlation between job satisfaction and work load is to be expected, it is important and perhaps surprising to note that the actual strain experienced is much more important, and even factors such as ‘fun’ can outweigh heavy workload.
- The challenge of a fast-changing industry environment decreases job satisfaction (-0.20 correlation) with the speed of the industry/environment.
- There is also a significant correlation (-0.17) with perceived job insecurity, validating Serenko et al (2015).
- Interestingly there is also a very small but significant correlation of 0.14 with gender with female IT staff reporting *lower* job satisfaction levels than males (the t-test for difference of means is significant at  $p = 0.040$ ). This important finding, if validated, should certainly be investigated further, ideally through qualitative research. Interestingly, this is only one of a larger number of gender-based differences in the entire data set, as measured through (difference of means) t-tests.
- An equally important finding is that job satisfaction does *not* appear to be correlated significantly with any of the individual attributes of the job such as autonomy, structure, innovativeness, etc.

In order to take into account the secondary between-variable correlations, a multiple regression was performed to see how much of the IT job satisfaction variance can be explained from the independent variables. Table 1 summarises the significant variables; overall, 40% of the variance can be explained (adjusted  $R^2 = 0.3349$ ).

Variable	b*	t-value	p-value
Strain	-0.393	-5.326	0.0000***
Professional Self-efficacy	0.220	3.816	0.0001***
Work Experience	-0.282	-2.734	0.0067**
IT Experience	0.267	2.603	0.0098**
Org IT Fun	0.138	2.470	0.0142*
Educational level	-0.126	2.215	0.0277*
Gender	0.116	2.157	0.0320*
Org Environment Speed	-0.123	-1.959	0.0513
N=272; 28 variables; $R^2 = 0.4036$ ; Adjusted $R^2 = 0.3349$ ; $F(28,243)=5.8738$ ; $p<0.0000$			

**Table 1:** Multiple regression analysis for IT job satisfaction

Although most of the highly correlated factors re-appear in the multiple regression analysis, there are some interesting differences with the correlational analysis. In particular, the work/home conflict and work overload variables have disappeared, due to their high correlation with strain (60% and 63% respectively). On the other hand, personal demographic variables such as work/IT experience and educational level have become significant explanatory variables. Very interestingly and somewhat surprising is that the isolated effects of work experience is *negative* whereas IT experience makes a positive contribution. This merits further research. Note that the speed of change (an organisational environment variable) just fails the 5% significance level when taken into account with the other variables although it is significantly correlated on its own.

### Antecedents of Organisation IT Staff Turnover

A number of measured variables are significantly correlated with the staff turnover intention, when this intention is measured as the average of the three test-items. In particular, the following significant correlations are found:

- Job satisfaction (-0.62 correlation): the very high negative correlation between job satisfaction and intention to leave validates the core hypothesis of the paper: job satisfaction is the key cause for IT staff turnover.

- Professional self-efficacy (0.26): the high (second-highest) positive correlation of self-rated professional self-efficacy is perhaps somewhat of a surprise. However, it can possibly be explained by the high correlation with job satisfaction and the fact that IT staff that are skilled have more job opportunities especially in the South African job market where good IT skills are relatively scarce.
- Strain (0.23): the third-highest correlated factor is no surprise given its high impact on job satisfaction.
- (Years of) Work Experience (0.23) and IT experience (0.18): these are both positively correlated; there is no clear intuitive explanation for this.
- Age (0.22): the fact that older staff have slightly higher intentions to leave is perhaps counter-intuitive but may be related to the positive correlations with experience above.
- The degree of “fun/joy” in the work environment (-0.15): this agrees strongly with the finding above: a fun working environment provides high job satisfaction and reduces staff turnover.
- Organisational size (-0.13) has small negative correlation: staff in smaller organisations are less likely to leave; the speed of change in the environment has a small (but statistically significant) positive correlation(0.13).

Importantly, turnover intention is *not* correlated (significantly) with gender, organisational environment (except marginally with speed of change) or any of the individual attributes of the job (autonomy, structure, innovativeness, etc. except for a small -0.13 negative correlation with the degree of skills required)

To account for the inter-construct correlations, a multiple regression was run in order to uncover those variables which collectively explain the most variance of intention to leave. Although 29 variables were added in the model, only three variables exhibit a p-value < 5%. Job satisfaction explains the huge majority of the variance in intention to leave with organisation size (+) and IT department size (-) secondary factors. Only two other variables have a significance level p<10%, namely work/home conflict (-) and the learning opportunities provided by the job (+); however the signs of the relationship are counter-intuitive. Table 2 lists the most significant influencing variables (in order of t/p-value).

Influencing Variable	b*	t-value	p-value
Job Satisfaction	-0.6403	-10.677	0.0000***
Organisation size (number of employees)	0.1782	2.081	0.0384*
IT Department size (number of employees)	-0.1569	-1.981	0.0488*
Work/Home conflict	-0.1306	-1.955	0.0518
Knowledge/Learning opportunities	0.1153	1.880	0.0614
N=272; 29 variables; R <sup>2</sup> = 0.4809; Adjusted R <sup>2</sup> = 0.4187; F(29,242)=7.7318; p<0.0000			

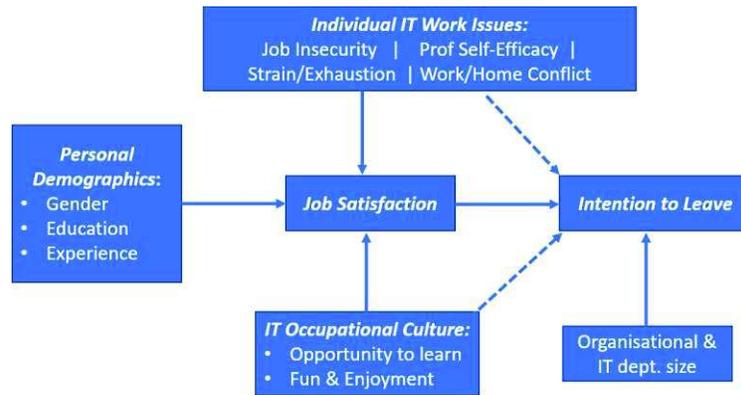
**Table 2:** Multiple regression analysis for intention to leave the organisation

The above analysis treats the dependent construct – the average of the responses on a 5-point Likert scale – as a continuous variable. However, the intention to leave can also be seen as a binary variable with many people have no such intention, a relatively small number indicating such intention (agree or strongly agree) and a significant portion undecided. A discriminant analysis to see which variables discriminate maximally between those intending to leave and those that don't was run on the responses for two test-items: a short-term definite intention to leave (“I will take steps during the next year to secure a job at a different organisation”: 67 agree (strongly); 154 disagree and a long term intention to stay (“I will be with this organisation five years from now”: 81 agree; 95 disagree). Apart from the expected job satisfaction, perceived job insecurity and the IT culture of being able to learn new skills are the two other highly significant discriminators for short term intention to leave. This is interesting because perceived job insecurity was only a minor determinant for job satisfaction, the key mediating variable in the model. Most of the other variables in the discriminant model (the ‘fun-ness’ of the IT culture, the degree of work/home conflict and gender) were previously uncovered as significant determinants, either indirectly of job satisfaction or else directly on the overall intention to leave construct. The only additional variable in the model is another IT occupation culture variable namely the ‘precision in communication’.

The long-term intention to stay or, reversed, the turnover intention (intention to leave) is more nuanced given that 12 variables were retained in the stepwise regression but only five have p-values < 0.05. The two most significant ones, job satisfaction and work/home conflict confirm the factors found in earlier analysis above. However, the next four most discriminating variables of the generated model were previously not identified as significant predictors: the education level, the innovation culture of the IT department, the managerial level, the degree of structure in the IT

department. Four of the six remaining variables were previously encountered, except for the predictability of the organisational environment or the maturity level of the organisation’s IT maturity level.

Combining the findings from the correlation, multiple regression and discriminant analysis suggests the following model (Figure 1), including only constructs that were statistically significant in at least two of the three analyses.



**Figure 1:** Proposed final model for turnover intention with job satisfaction as mediator.

The final proposed model, grounded in the empirical dataset, shows job satisfaction as a strong mediating construct explaining most of the variance in the IT professional’s intention to leave the organisation. Job satisfaction is determined mainly by selected personal demographics; individual IT issues experienced such as strain/work exhaustion, job insecurity, professional self-efficacy and work/life balance; and selected elements of the IT occupational culture, specifically the opportunity to learn and fun/enjoyment. Marginal residual effects of the experienced individual IT issues as well as the occupation culture may also impact the intention to leave directly, as does organisation and IT department size.

## CONCLUSION

This research set out to determine the antecedents of IT employees’ intention to leave in South African organisations, postulating job satisfaction as the key mediating construct. A high quality data set with 301 respondents was acquired by means of the South African arm of the World IT Project (Palvia et al., 2017). The availability of a large number of valid constructs enabled us to validate extant literature as well as extend the findings from the literature through correlational, multiple regression and discriminant analysis. We managed to explain more than 33% of the variance in both job security and 41% of the intention to leave. Job satisfaction is influenced by a large number of antecedents, including personal demographics (gender, education level & experience); individual IT issues experienced (strain/work exhaustion, job insecurity, professional self-efficacy and life/work balance); and IT occupational culture (the opportunity to learn and fun/enjoyment). Turnover intention is mainly determined by job satisfaction although organisation size, individual IT issues and occupation culture also have small impacts (Figure 1). These findings are of both academic and practical usefulness. Academics will hopefully find value in a more refined model of IT job satisfaction and turnover intention. Managers in organisations trying to cope with a scarce skills phenomenon for IT staff can use the model to identify interventions aimed at reducing IT staff turnover rates; in particular by focussing on the identified individual IT (job) issues as well as the IT culture (provide opportunities to learn and make the environment more fun and enjoyable). In future research, given that that the World IT project has collected similar datasets across 45 countries, we hope to compare our results to other country contexts.

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## REFERENCES

The references were omitted due to space limitations but available on simple request from the authors.