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Rennie Naidoo

University of Pretoria, [rennie.naidoo@up.ac.za](mailto:rennie.naidoo@up.ac.za)

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# Turnover Intentions among South African IT Professionals: Gender, Ethnicity and the Influence of Pay Satisfaction

Research Paper

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Rennie Naidoo

University of Pretoria

[rennie.naidoo@up.ac.za](mailto:rennie.naidoo@up.ac.za)

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## ABSTRACT

The South African ICT industry is struggling with high turnover despite the relatively high remuneration packages it offers to its gender and racially diverse IT professionals. This study explored pay satisfaction levels and its relationship with job satisfaction, organizational commitment, and turnover intentions. Survey responses from 158 IT professionals were subjected to descriptive, correlation and regression analysis. The results show that, irrespective of gender or race, employees generally have low pay satisfaction, low organizational commitment, and only moderate job satisfaction levels. However, black ethnic groups did show a difference in their appraisals of pay satisfaction, expressing slightly lower pay satisfaction than white males. Organizational commitment and job satisfaction were the most important predictors of turnover intentions, and they partially mediated the influence of pay satisfaction on turnover intentions. Employers can reduce IT turnover due to low pay satisfaction by investing in interventions that raise the levels of organizational commitment, job satisfaction, and distributive and procedural justice. Future IT research on the continent needs to include race and gender as distinct analytical categories to better understand turnover intentions.

## Keywords

Pay satisfaction, job satisfaction, organizational commitment, race, gender, turnover intentions.

## INTRODUCTION

Studies globally characterize information technology (IT) personnel as being part of the ‘turnover culture’ (Moore and Burke, 2002). In recent years, turnover rates of North American, European Union and Asian IT personnel averaged between 15 to 20 percent (SamGnanakkan, 2010; Cha and Quan, 2011). This norm of high IT personnel turnover has also been a persistent challenge facing many South African organizations (Igbaria, Meredith, and Smith, 1995; Smith and Speight, 2006; Naidoo, 2016). In fact, South Africa’s ICT industry, one of the leading job sectors, continues to experience high voluntary

turnover rates, despite the double-digit pay increases received by IT Professionals over the last few years and a 15% increase reported in 2016 (Survey ITWeb/CareerWeb IT Salary, 2016). The South African government's National Integrated ICT Policy White Paper (Telecommunications & Postal Services, 2016) recognizes the importance of developing and retaining IT skills in building a digital society. Government policy makers also recognize that the IT skills' supply-demand gap is a major barrier to realizing their objectives (Government Gazette General Notice, 2014). The IT skills gap exacerbated by high turnover rates also impacts the private sector from competing effectively in local and global markets.

Voluntary turnover, which also includes job hopping, is of growing concern because it has significant economic implications for the national ICT sector. Job hopping can lead to a decline in productivity in the national ICT sector (Nzukuma and Bussin, 2011). More specifically, turnover behaviors of IT personnel are costly to organizations in terms of hiring and training costs, as well as investment in training and social capital losses (Ghapanchi and Aurum, 2011). Although skilled IT workers can easily find new jobs, they also incur costs in adjusting to a new job. The scarcity of qualified IT professionals under conditions of permeable employment boundaries has also exacerbated the high mobility of IT talent (Naidoo, 2016). Furthermore, there is a changing race and gender ratio in the industry twenty-three years into South Africa's democratic establishment, as many employers are compelled to address workplace equality (Commission for Employment Equity, 2016).

Despite increased regulatory compliance in the form of employment equity to redress the Apartheid regime's formal and deliberate exclusionary policies on the basis of race and gender in the workplace, white men continue to dominate 70 percent of South Africa's overall workforce at top management and 59 percent at the senior management level (Commission for Employment Equity, 2016). Of the 21 percent of women in the top management, 63 percent are represented by white females (Commission for Employment Equity, 2016). The South African Employment Equity Act of 1998 defines black people as people of African, Colored and Indian descent. Notwithstanding the general scarcity of IT talent, employment equity should be driving higher demand for black ethnic and female IT talent. Gender and race are important variables to consider in the global IT labor market. As pointed out by postcolonial theorists, these variables are especially important in Africa given that historically gender and race were one of the major bases of colonial domination in organizations and broader society (Mbarika, Okoli, Byrd and Datta, 2005; Ravishankar, Pan, and Myers, 2013). Ghapanchi and Aurum's (2011) systematic literature review of 72 IT turnover studies from 1980 to 2008 confirms that IT professionals are treated as a homogenous population. Similarly, a meta analysis of 33 IT turnover studies by Joseph et al. (2007) confirms that researchers either silenced or overlooked the role of gender, race and ethnicity in their analysis. Recently IT researchers have started to emphasize the importance of gender and race issues (Joshi, Kvasny, Unnikrishnan, and Trauth, 2016; Windeler and Riemenschneider, 2016). This study explicitly recognizes race and gender as being part of the IT workplace and includes these variables as distinct analytical categories to understand turnover intentions.

Consequently, this study is designed to be more inclusive by paying special attention to the diversity in the South African IT job market (Nkomo, 1992). Against the historical context of unfair racial and gender discrimination, insufficient staff and resources, career mobility, and lucrative remunerations, it is important to understand the high turnover behavior of South Africa's IT Professionals. Many researchers have shown that pay or compensation satisfaction is an important variable that influences employees' attitudes towards their work, organization and turnover decisions (Urieși, 2016). Pay satisfaction is an

evaluation of the degree of like or dislike of the rewards one receives from one's work (Currall, Towler, Judge, and Kohn, 2005). Several studies report that pay satisfaction is a significant predictor of intended and actual turnover, but there exists a possibility that the different facets of pay satisfaction play different roles in IT turnover. In studies on organizational factors affecting IT personnel's intentions to quit, salary is the most frequently cited (Joseph, Boh, Ang, and Slaughter, 2012). To a lesser extent, fairness of reward and promotability can also affect IT personnel's intentions to leave (Shih, Jiang, Klein, and Wang, 2013).

Pay dispersion, defined as the amount of pay inequality within an organization's pay system, also predicted turnover employees (Holtom, Mitchell, Lee, and Eberly, 2008). Some studies found that pay satisfaction had both direct and indirect effects on turnover intentions. An indirect effect of pay satisfaction occurred through job satisfaction and organizational commitment (Heavey, Holwerda, and Hausknecht, 2013). Because of unfair racial and gender discrimination legislated by the Apartheid government, South African IT employees' experiences of equity in the workplace and fair treatment in employment is different from their counterparts in the West and East (Nkomo, 1992). Although, there has been a dramatic increase of females and black ethnic groups in the IT labor market in recent years, the unique experiences of these IT employees have not been adequately addressed in studies particularly in the African literature. For example, little is known regarding pay satisfaction, job satisfaction, or organizational commitment and turnover intentions of these diverse ethnic and gender groups (Ghapanchi and Aurum's, 2011; Joseph et al., 2007).

The main purpose of this study was to examine how well pay satisfaction, job satisfaction, or organizational commitment predicted turnover intentions in IT. It also examined the relationship between pay satisfaction and overall job satisfaction. Specifically, it addressed these four research questions:

1. which one of organizational commitment, job satisfaction, or pay satisfaction is the best predictor of turnover intentions in IT?
2. does job satisfaction mediate the relationship between pay satisfaction and turnover intentions?
3. does organizational commitment mediate the relationship between pay satisfaction and turnover intentions? and
4. do race and gender groups show significant different levels of pay satisfaction?

## LITERATURE REVIEW OF VOLUNTARY IT TURNOVER

### Turnover Intentions

Voluntary turnover occurs when the decision to leave the organization is at the employee's discretion. This is different from involuntary turnover (layoffs, forced resignations, firing) where the organization makes the decision to let go some employees. According to human capital theory, while some voluntary turnover can be functional, it generally has a negative influence on workforce performance (Joseph, Ang, and Slaughter, 2006) First, voluntary turnover depletes the organization specific human capital accumulated by an employee. Second, turnover eliminates the organization's return on its investment from a productive employee. Third, high turnover can disrupt the organization's operations – e.g. managers need to redirect human resources away from maintenance and security to IT project delivery. For practical reasons, most studies focus on involuntary turnover intention as opposed to voluntary

turnover. Voluntary turnover intention is the estimated probability that the employee will leave the organization (Nzukuma and Bussin, 2011). Not surprisingly, voluntary turnover intention is also the best predictor of involuntary turnover and is a popular dependent variable for actual voluntary turnover. Although, theoretical expansion of voluntary (avoidable or sometimes referred to as dysfunctional) turnover has been fruitful over the years, there continues to be a focus on pay satisfaction, job dissatisfaction, and organizational commitment (Joseph, Ng, Koh, and Ang, 2007).

### **Organizational commitment**

Organizational commitment is often regarded as a better predictor of turnover intentions and turnover as compared to job satisfaction (Porter, Steers, Mowday, and Boulian, 1974). Organizational commitment is defined as the strength of an employee's identification and involvement with the organization. According to Porter, Steers, Mowday, and Boulian (1974), organizational commitment can be characterized as follows:

- 1) believing in and accepting the organization's goals and values,
- 2) exerting considerable effort on behalf of the organization, and
- 3) aspiring to maintain organizational membership.

Meyer and Allen's (1991) Organizational Commitment Model (OCM) proposes three components of commitment – affective, continuance and normative commitment. Affective commitment refers to the emotional bond the employee has with the organization. Continuance (economic / calculative) commitment refers to the material benefits of remaining with the organization. Normative or moral commitment reflects a feeling of moral and ethical obligation to continue to stay at the organization (Van Dick et al., 2004).

Organizational commitment of IT professionals is of considerable interest to African employers. The evidence in the literature shows that committed employees are less likely to withdraw, form turnover intentions, or leave (Ghapanchi and Aurum, 2011). When compared to the Western and Eastern organizations, African organizations are generally lagging behind in IT capability. There is a concern among African employers of IT professionals that a lack of commitment and the associated costs of withdrawal behaviors can lead to declining productivity and lack of competitiveness through IT. However, following social exchange theory, work is a reciprocal situation and organizational commitment is a give-and-take relationship (Krishnan and Singh, 2010). Employees expect that in exchange for their effort and commitment their employer will reciprocate with tangible benefits such as equitable pay. South African IT professionals are unlikely to show commitment to a single organization given the increasing trends to relocating IT jobs offshore and contracting work. Furthermore, South African IT professionals are unlikely to show commitment to a single organization given the career mobility and boundaryless working environment they enjoy (Goswami, 2014).

### **Job satisfaction**

Although less stable and enduring than organizational commitment, job satisfaction has been studied extensively in HR literature. A popular theory of job satisfaction is the value-percept model (Judge and Klinger, 2000). The value-percept model expresses job satisfaction in terms of what employees value and the job outcomes (Locke, 1969). This model predicts that discrepancies between employee desires and what is received are dissatisfying only if the job facet is important. While job satisfaction has several definitions, Locke defines job satisfaction as “a pleasurable or positive emotional state resulting

from the appraisal of one's job or job experiences" (Locke, 1976, p.1304). While this definition emphasizes a cognitive (evaluative) and affective (emotional) perspective, other conceptualizations include a behavioral component. A review by Judge and Klinger (2000) found that job satisfaction is related to several workplace behaviors. These include attendance, turnover decisions, decisions to retire, psychological withdrawal behaviors, prosocial and organizational citizenship behaviors, job performance, and workplace incivility. Job satisfaction also shows a strong relationship with employee well-being (Goswami, 2014; Judge and Klinger, 2000). However, while the literature recommends that organizations should value job satisfaction and employee well-being, it does not follow that these insights are applied by South African organizations.

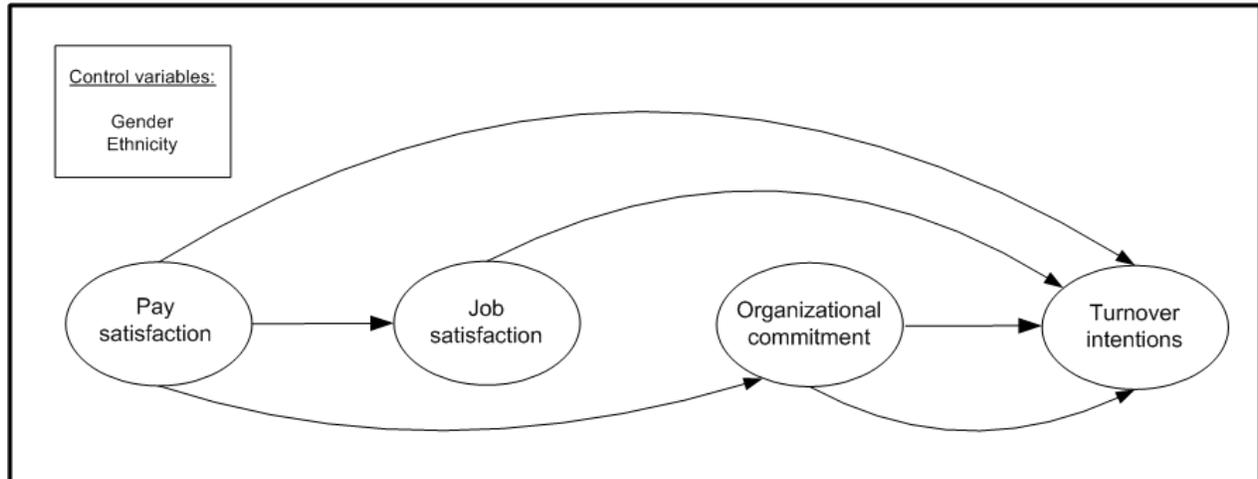
## **Pay satisfaction**

Research on pay satisfaction has received considerable attention during the past five decades (Ghapanchi and Aurum, 2011; Thatcher, Liu, Stepina, Goodman, and Treadway, 2006). Williams, McDaniel and Nguyen (2006) define pay satisfaction as the amount of overall positive or negative affect (or feelings) that individuals have toward their pay. Pay refers to the different forms of compensation the employee receives. It is generally comprised of five components: pay level, pay raises, benefits, structure, and administration (Heneman and Schwab, 1985).

Two theories have guided research on pay satisfaction: the equity theory and the discrepancy theory. According to the discrepancy theory, pay satisfaction is a function of one's actual pay relative to what one thinks one deserves (Berkowitz, Fraser, Treasure, and Cochran, 1987). The equity theory emphasizes an employee's beliefs of how he or she is treated in relation to others (Judge and Welbourne, 1994). Employees' feelings of pay inequity are associated with dissatisfaction. The equity theory is also related to the literature on organizational justice and two key components used to evaluate fairness: distributive justice and procedural justice (DeConinck and Stilwell, 2004). Distributive justice applies to the fairness of the outcome (i.e. in this study, the employee's pay level). Research has shown that distributive justice predicts pay satisfaction (Judge, Piccolo, Podsakoff, Shaw, and Rich, 2010; Singh and Loncar, 2010). Employees' perceptions of procedural justice also increase pay satisfaction. Procedural justice evaluates the fairness of methods and appraisal systems, such as rules and procedures that are implemented to determine the employee's pay level (Singh and Loncar, 2010). Following the logic of equity theory, pay satisfaction levels are likely to be associated with existing, persistent pay differences. According to Herzberg's "dual factor" theory of motivation, psychological rewards that flow directly from the performance of work are more important than financial rewards (Igbaria, Meredith, and Smith, 1995; Mak and Sockel, 2001). In other words, intrinsic factors such as achievement, recognition, work itself, responsibility, and advancement are more important to employees. Personal variables such as salary are not that important (Thatcher, Liu, Stepina, Goodman, and Treadway, 2006). This study contends that although intrinsic motivation is important, personal factors such as pay satisfaction may be exerting a more powerful influence on IT workers' attitudes and turnover behavior in the competitive South African job market context. This study also conceptualizes pay inequities in IT to be related to the South Africa's historical context and the persistence of racial and gender discrimination in the workplace (Commission for Employment Equity, 2016).

## RESEARCH MODEL AND HYPOTHESES

Figure 1 depicts a conceptual model of pay satisfaction, organizational commitment, job satisfaction, and turnover intention in IT drawn from the HR, organizational and psychology literature (Joseph, Ng, Koh, and Ang, 2007). It is well known that pay satisfaction has a negative relationship with turnover intentions (Ghapanchi and Aurum, 2011), but little is known about the role of cognitive and affective variables in mediating this relationship. Following Joseph et al. (2007), the model suggests distinctive relationships between pay satisfaction, job satisfaction (affective), organizational commitment (attitudinal), and turnover intentions (behavioral) constructs. Pay is viewed here as economic incentives to increase job satisfaction, organizational commitment and staff retention. To investigate these relationships, the model also includes control variables associated with pay satisfaction that is relevant to the South African context. The model includes two demographic factors – race and gender – that have been known to show negative association with pay satisfaction in the general HR literature (Tang and Talpade, 1999). Accordingly, this study focuses on gender and race.



**Figure 1: Hypothesized model of the relationships between pay satisfaction, job satisfaction, organizational commitment, and turnover intentions in IT.**

## Hypotheses

### *Predictors of Turnover Intentions*

South Africa has a shortage of IT professionals and high turnover rates. These high turnover rates may be a consequence of low organizational commitment among IT professionals. Porter et al. (1974) argues that organizational commitment is a better predictor of turnover when compared to job satisfaction and pay satisfaction. IT employees also enjoy considerable labor market power, which promotes mobility across organizations rather than promoting loyalty to a single organization (Goswami, 2014).

Cho and Huang (2012) also found that organizational commitment would be more effective in reducing an IT professionals' intention to leave their organizations. However, Igarria, Meredith, and Smith (1994) found that while organizational commitment is an important predictor of turnover intentions, job

satisfaction is a better predictor. Pay satisfaction has also been found to be negative predictor of turnover (Igbaria et al., 1994). While prior IT studies have found that organizational commitment, job satisfaction and pay satisfaction negatively impact turnover intentions (Joseph et al., 2007), they rarely went a step further to determine the relative importance between them in terms of their effects on turnover intentions. To test which predictor is relatively more important, the first hypothesis states:

**H1:** The general relationship between organizational commitment, job satisfaction, and pay satisfaction on turnover intentions will be negative, but the effects (size) will be different.

### *Job Satisfaction as a Mediator*

The next hypothesis considers the mediating role of job satisfaction on turnover intentions. A negative relationship between pay satisfaction and job satisfaction on turnover intentions has been demonstrated by several IT turnover studies (Joseph, Ng, Koh, and Ang, 2007). For example, Thatcher et al., (2006) found that there is a positive correlation between pay satisfaction and job satisfaction which negatively influences turnover intentions. However, a meta-analysis by Judge, Piccolo, Podsakoff, Shaw, and Rich (2010) found that that pay level is only marginally related to job satisfaction. Some studies suggest that the effect of pay satisfaction on IT employee job satisfaction was not significant (Kim, 2009). Other studies argue that psychological rewards are more important than pay-level satisfaction (Gieter, Cooman, Hofmans, and Pepermans, 2012). However, one of the most important facets of job satisfaction is the financial rewards the employee receives in exchange for their services (Ghapanchi and Aurum, 2011). Thatcher et al. (2002) found that pay satisfaction contributed to job satisfaction, and that job satisfaction in turn reduced turnover intentions. To test if job satisfaction plays a determining factor in the pay satisfaction-turnover intention relationship in the South African context, the second hypothesis states:

**H2:** Job satisfaction mediates the relationship between pay satisfaction and turnover intentions.

### *Organizational Commitment as a Mediator*

While some studies suggest that job satisfaction is a determinant of organizational commitment (Joseph et al., 2007), other studies find little support for this relationship (Curry, Wakefield, Douglas, Price, and Mueller, 1986). Some studies have found that both organizational commitment and pay satisfaction are negatively correlated with turnover intentions (Lum, Kervin, Clark, Reid, and Sirola, 1998). Other studies have also found that organization commitment acts as a mediator of the process between pay satisfaction and turnover intentions (Thatcher et al., 2006). For example, in a study of IT professionals, organizational commitment mediated the influence of pay satisfaction on turnover intentions (Thatcher et al., 2002). To test if organizational commitment plays a determining factor in the pay satisfaction-turnover intention relationship in the South African context, the third hypothesis states:

**H3:** Organizational commitment mediates the relationship between pay satisfaction and turnover intentions.

### *Pay Satisfaction, Gender and Race*

A more inclusive and diverse IT workforce in South Africa calls for an investigation into the influence of organizational diversity on pay satisfaction. In the US, a greater number of African-Americans and Hispanics were at a higher risk of turnover (Holtom et al., 2008; Windeler and Riemenschneider, 2016; Zatzick, Elvira, and Cohen, 2003). In South Africa, Nzukuma and Bussin (2011) found that Black African senior managers were also at a higher risk of turnover because they did not believe that their employers were sincere about developing their careers. Some job sectors can also reverse race and gender discrimination in the workplace. One study found that Latino males and females, and white females experience greater perceived benefits by working in the US military service (Lundquist, 2008). Few studies have examined the relation between gender, race and pay level satisfaction in the postcolonial African context (Stella, 1992). The democratically elected South African government found that there is a persisting wage gap between the dominant minority group (white) earnings and the earnings of other black ethnic groups and the female gender (Commission for Employment Equity, 2016). Thus, white male employees in the South Africa's IT sector can be expected to be more satisfied with their pay level than indigenous or other race or gender groups (Byars-Winston, Fouad, and Wen, 2015). To test if gender and race play a determining factor in the pay satisfaction, the fourth and final hypotheses states:

**H4a:** Women will be less satisfied with their pay when compared to white males.

**H4b:** Black ethnic groups will be less satisfied with their pay when compared to white males.

## **RESEARCH DESIGN**

Empirical data for hypothesis testing were collected via a quantitative survey. Surveys are also more suitable when many variables and hypotheses appear in the same study. Furthermore, a number of past studies adopted a survey approach in studying drivers of turnover intentions. IT project managers, business and systems analysts, business process analysts, and business intelligence professionals were the main groups targeted for this study. The target population of this study's sample was derived from the e-mailing lists of IT professional bodies. Five academic researchers as well as two experienced HRD practitioners pre-tested the survey for face and content validity. Two academics were concerned about asking participants to provide their "race", as this may have been viewed as offensive in the South African context. The label for this question was changed to "population group" and an extra option, "other", was made available for this question so that participants would be able to enter another option if they felt their population group was not available from the list provided. No respondent chose the 'other' option. Prior to the main survey, 20 part-time Masters Students in Information Systems volunteered to complete the pilot survey to ensure face validity of the online survey questionnaire.

The objective of this pilot was to test if the participants understood the questions and that the full spectrum of the scales was utilized. Only minor changes to the questionnaire instructions and the design of the survey form were made. The survey led to 158 usable responses which based on the number of variables in this study is sufficient to test the measurement scales.

The final questionnaire was divided into two main sections. Section A dealt with the demographic information of the respondents, for example gender, age, race, profession, and highest educational qualification. Section B measured the research model's four constructs. The measures used were adapted

from relevant prior studies. To ensure that the measures were applicable to this study, we modified the questions slightly.

Items for measuring job satisfaction were adapted from (Pond and Geyer, 1991). The construct's four indicators are:

- All things considered, how satisfied are you with your current job, 1("Very dissatisfied") to 5("Very satisfied")
- In general, how much do you enjoy your job, 1("Don't like it at all") to 5("Like it very much")
- Knowing what you now know, would you take up your current job again, 1("Definitely would not take this job") 5("Would take this job without hesitation"),
- How does this job compare to your ideal job 1("Far from ideal") to 5("Close to ideal").

Five items were used to measure the pay satisfaction (Heneman and Schwab, 1985). The indicators from 1("Very dissatisfied") to 5("Very satisfied") were:

- How would you rate your satisfaction with the salary you receive?
- How would you rate your satisfaction with the last salary increase you received?
- How would you rate your satisfaction with the salary you received when compared to other organizations?
- How would you rate your satisfaction with the benefits you receive?
- How would you rate your satisfaction with the process used to determine annual raises?

The remaining items were measured by using a 5-point Likert scale which ranged from *strongly disagree* (1) to *strongly agree* (5). The turnover intention construct's three indicators adapted from Allen and Meyer (1990) are:

- I often think about quitting my job
- As soon as I find a better job, I will leave this organization
- I will probably look for a new job in the near future.

Items measuring organizational commitment were adapted from (Blomme, van Rheede, and Tromp, 2010). The construct's four indicators are:

- I would be very happy to spend the rest of my career with this organization.
- the organization has a great deal of personal meaning to me.
- I really feel as if the organization's problems are my own.

The combined e-mail lists of the targeted groups for this study had approximately 1200 unique email addresses. Subjects who volunteered to complete the online questionnaire were prompted via a short email; they were directed to the survey via a hyperlink. The email briefly outlined the purpose of the study and instructions on completing the survey. Using an online survey was found more advantageous for this study, since it will be possible to get a reasonably large sample size when compared to

traditional methods, in a shorter time frame, and at a lower cost. The online survey was appropriate since IT professionals were the focus of the study. The University's Ethics Committee granted permission as the study complied with protocols relating to voluntary participation and anonymity of respondents.

Following a single round of data collection, 163 responses were collected giving an estimated response rate of 16.3% (It was not clear how 'fresh' the email listing was and to what extent the survey response was hindered by spam filters). The responses were screened to identify any data entry errors as well as for univariate outliers. Of these 163 responses, five cases were found to contain more than 10% of missing data and were ignored (Hair, Black, Babin, and Anderson, 2014). The final data for analysis consisted of 158 usable responses. The number of responses received was considered sufficient based on the number of variables and the techniques that were to be used to test the hypotheses (Hair et al., 2014).

### Statistical analysis

Data analysis for this study was performed using SPSS (version 22.0). Factor analysis was used to reduce the number of related variables. Construct validity for each scale was assessed using coefficient alpha (Churchill, 1979). A minimum factor loading of 0.60 was deemed to be acceptable (Hair et al., 2014). Correlation analysis was used to assess the direction and strength of the linear relationships between the variables in hypotheses 1, 2, and 3 (Hair et al., 2014). We adopted the procedure to obtain a Pearson product-moment correlation ( $r$ ). Next, standard multiple regression was used to determine how much of variance is explained by each of the three constructs: organizational commitment, job satisfaction, and pay satisfaction. The most and lesser important independent variables driving turnover intentions could be determined. Following this, an independent-samples t-test was used to compare the differences in pay satisfaction mean scores between gender and race groups.

## RESULTS

Characteristics of the respondents are presented in Table 1. The age of the respondents varied from 20 to 65 years with a mean age of 36 years. Of these, 67.8% were male and 32.2% female. While the sample consisted of a biased spread of male compared to female respondents this response is perhaps not atypical of the South African IT work context. Ethnicity was represented by the different population groups. Not surprisingly, the White group (41.0 %) accounted for most of the responses, African (39.0%), Indian (15.5%), Colored (3.2%) and Asian (1.3%). Only 22.8% of the sample consisted of IT professionals younger than 30 years of age and over 70% of the respondents had 8 or more years total work experience.

Principal component analysis (PCA) with a direct oblimin rotation of the 15 Likert scale items reflecting the variables of the study (turnover intention, pay satisfaction, job satisfaction, organizational commitment) was conducted. Prior to performing PCA, the suitability of the data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of 0.3 and above. The Kaiser-Mayer-Olkin value of 0.864 exceeds the recommended value of 0.60. The Bartlett's test of sphericity reached statistical significance ( $p = 0.000$ ), supporting the factorability of the correlation matrix. PCA revealed the presence of four factors, with eigen values exceeding 1, explaining 75.4% of the variance cumulatively. A stable 4-factor and 15-item solution emerged and is shown in Table 2. The Cronbach's alpha test was used to test the internal consistency of the scale items (Hair et al. 1998). Results revealed sufficiently high internal consistency for all scales, ranging from 0.848 to 0.909.

**Table 1. Profile of Respondents**

Characteristics		Number	Percentage
Primary Job role	Project/Program Manager	58	35.6
	Business Analyst	55	33.7
	Business Process Analyst	30	18.4
	Business Intelligence Professional	15	9.2
Age	20 – 25	8	5.1
	26 – 30	42	26.6
	31 – 40	67	42.4
	41 – 50	30	19.0
	51 – 60	11	7.0
	>60	1	.6
Total Work Experience	<=5	31	19.6
	6 – 10	43	27.2
	11 – 15	36	22.8
	16 – 20	19	12.0
	>20	29	18.4
Qualifications	Matric	8	4.5
	Industry Certificate	2	1.3
	Some University / College (e.g. Certificate / Diploma)	22	14.0
	Diploma	19	12.1
	Degree (3 year)	36	22.9
	Honors (4 years)	35	22.3
	Masters	27	17.2
	Doctorate	3	1.9
		6	3.8
Province	Gauteng	137	86.7
	Other	21	13.3
Gender	Male	107	67.8
	Female	51	32.2
Ethnicity	White	64	41.0
	Black	94	59.0

**Table 2. Instrument reliabilities and validities**

Likert-scale construct	Number of Items	Mean	Standard Deviation	Cronbach alpha	Minimum Factor loading
Turnover intention	3	3.16	1.19	.880	.808
Pay satisfaction	5	2.77	0.90	.848	.632
Job satisfaction	4	3.42	0.93	.909	.784
Organizational commitment	3	2.83	1.09	.874	.752
<i>Note:</i> All loadings were greater than 0.60. 5-point scale.					

Results of the analysis, along with descriptive statistics (item means and standard deviations), are presented in Table 2. Turnover intention (mean = 3.16, SD = 1.19) scores indicate that respondents reacted somewhat neutrally toward staying at their organization; however, the highest SD score suggests a wide difference of opinion. Scores for pay satisfaction were the lowest (mean = 2.77, SD = 0.90) suggesting that the majority of respondents were somewhat dissatisfied with their pay. Job satisfaction had the highest performance score (mean = 3.42, SD = 0.93), however, many respondents were only somewhat satisfied with their jobs. Scores for organizational commitment was low (mean = 2.83, SD = 1.09) suggesting that the majority of respondents were not that committed to the organization. Nevertheless, this score also showed a high amount of variability in responses.

**Table 3. Correlation Matrix and Descriptive Statistics for Pay satisfaction, Job satisfaction, Organizational commitment towards Turnover Intention**

	(1)	(2)	(3)	(4)
Turnover Intention (DV)	1.0			
Pay satisfaction	-.398	1.0		
Job satisfaction	-.520	.340	1.0	
Organizational commitment	-.516	.531	.318	1.0
Mean	3.16	2.77	3.42	2.83
Standard Deviation	1.19	.90	0.93	1.09

*Note:* N=158. Turnover Intention is the dependent variable. All correlations are statistically significant at  $p < 0.01$ .

Table 3 shows that the scales were tested for independence using Pearson’s product-moment correlation. All correlations were significant at  $p < 0.01$  levels. The relationship between and job satisfaction and turnover intention showed a strong, negative correlation between the two variables ( $r = -0.520$ ,  $n = 158$ ,  $p < 0.01$ ). The relationship between organizational commitment and turnover intention also showed a strong, negative correlation between the two variables ( $r = -0.516$ ,  $n = 158$ ,  $p < 0.01$ ). There was only a moderate negative relationship between pay satisfaction and turnover intention ( $r = -0.398$ ,  $n = 158$ ,  $p < 0.01$ ). Pay satisfaction also had a moderate positive relationship with job satisfaction ( $r = 0.340$ ,  $n = 158$ ,  $p < 0.01$ ) and organizational commitment ( $r = 0.318$ ,  $n = 158$ ,  $p < 0.01$ ). Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity (Hair et al. 1998). Intercorrelations among scales did not exceed 0.70, and therefore, the independence of the scales was considered adequate for this study.

**Research Question One**

Multiple regressions were used to examine the first research question on how well pay satisfaction, job satisfaction and organizational commitment predicted turnover intentions (Assumptions of linearity, normally distributed errors, and uncorrelated error were met). The two demographic controls (race, gender) were entered into the model to assess its unique effects on turnover intentions. None of these controls had a significant association with turnover intentions. The means, standard deviations, and intercorrelations can be found in Table 3. The combination of pay satisfaction, job satisfaction, and organizational commitment significantly predicted turnover intentions,  $F(3,154)=32.350$ ,  $p < 0.001$ , with all three variables contributing to the prediction. The adjusted R squared value was 0.38. This indicates the model explained a 38% variance in turnover intentions. The beta weights presented in Table 4

suggest that organizational commitment, recording only a slightly higher beta value than job satisfaction, contributes the most to turnover intentions, while pay satisfaction also contributed significantly to this prediction.

**Table 4. Multiple Regression of Pay satisfaction, Job satisfaction, Organizational commitment on Turnover Intention**

Y	Beta	T value	Sig.
Pay satisfaction	-.204	-2.989	.003
Job satisfaction	-.294	-3.861	.000
Organizational commitment	-.295	-3.903	.000
Adj R2 = .375			
<i>Note:</i> Standardized beta coefficients are shown for the independent variables; *= $p < 0.01$			

### Research Question Two

The second research question is whether job satisfaction would play a mediating role between pay satisfaction and turnover intention. The two demographic controls (race, gender) were again entered into the model to assess its unique effects on turnover intentions. The first part of the analysis shows that pay satisfaction significantly predicts turnover intentions ( $b = -.524$ ,  $F = 29.29$ ,  $t = -5.412$ ,  $p < .001$ ). The correlation coefficient (R) was .40 and the R squared value was .16, suggesting that pay satisfaction explains 16% of the variance in turnover intentions. In the second part of the analysis, pay satisfaction significantly predicted job satisfaction ( $b = .350$ ,  $F = 20.34$ ,  $t = 4.51$ ,  $p = .0000$ ), the correlation coefficient (R) of .34 and the R squared value of .12, suggesting that pay satisfaction explains 12% of the variance in job satisfaction, consistent with partial mediation. In the third part of the analysis, pay satisfaction and job satisfaction (mediator) explained approximately 33% of the variance in turnover intentions ( $R = .57$ ,  $R^2 = .33$ ,  $F = 37.47$ ,  $p < 0.001$ ). However, pay satisfaction also significantly predicted turnover intentions with job satisfaction in the model ( $b = -.330$ ,  $t = -3.6$ ,  $p < .000$ ). Table 5 shows that job satisfaction did not fully mediate the relationship between pay satisfaction and turnover intentions.

**Table 5. Mediation analysis on turnover intentions (Job satisfaction)**

Y	Beta	T value	Sig.
Pay satisfaction-turnover intention	-.524	-5.412	.000
Pay satisfaction – job satisfaction	.350	4.510	.000
Pay satisfaction, job satisfaction (M) – turnover intention	-.330	-3.561	.000
Adj R2 = .573			
<i>Note:</i> Standardized beta coefficients are shown for the independent variables; *= $p < 0.01$			

### Research Question Three

The third research question examines whether organizational commitment would play a mediating role between pay satisfaction and turnover intentions. The two demographic controls (race, gender) were again entered into the model to assess its unique effects on turnover intentions. None of these controls had a significant association with turnover intentions. The results in Table 6 indicate that pay satisfaction was a significant predictor of turnover intentions ( $b = -.524$ ,  $F = 29.29$ ,  $t = -5.411$ ,  $p < .001$ )

and that pay satisfaction was a significant predictor of organizational commitment ( $b=.381$ ,  $F=17.58$ ,  $t=4.193$ ,  $p<.001$ ). These results support the mediational hypothesis. In the third part of the analysis, pay satisfaction and organizational commitment (mediator) explained approximately 33% of the variance in turnover intentions. Pay satisfaction was still a significant predictor of turnover intentions after controlling for the mediator, organizational commitment ( $b=-.342$ ,  $t=-3.734$ ,  $p<.001$ ). This suggests partial mediation.

**Table 6. Mediation analysis on turnover intentions (Organizational commitment)**

Y	Beta	T value	Sig.
Pay satisfaction-turnover intention	-.524	-5.411	.000
Pay satisfaction – organizational commitment	.381	4.193	.000
Pay satisfaction, organizational commitment (M) – turnover intention	-.342	-3.734	.000
Adj R2 = .573			
Note: Standardized beta coefficients are shown for the independent variables; * $p < 0.01$			

**Research Question Four.**

The fourth question examined gender and race differences and pay satisfaction. First, independent-samples t-test was conducted to compare pay satisfaction scores for white males and females. There was no significant difference in scores for white males (mean = 2.99, SD = .63, n=44) and females (mean = 2.79, SD = .97, n=53);  $t(95)=.112$ ,  $p=.27$  (two tailed), since the p-value was above 0.5. Second, independent-samples t-test was conducted to compare pay satisfaction scores for white males and black ethnic groups. The difference in pay satisfaction scores for black ethnic groups (mean = 2.65, SD = .99, n=94) and white males, (mean = 2.99, SD = .63, n=44);  $t(136)=-2.08$ ,  $p=.03$  (two tailed) was significantly different. Black ethnic groups in this sample have a difference in their appraisals of pay satisfaction, expressing slightly lower pay satisfaction than white males.

**DISCUSSION OF RESULTS**

This research examined the extent to which pay satisfaction, job satisfaction and organizational commitment predicted turnover intentions among IT personnel. The study also examined the extent to which the pay satisfaction - turnover intentions relationship is mediated by job satisfaction and organizational commitment. Finally, the study examined whether gender or the race of the IT personnel influenced their levels of pay satisfaction. The study specifically predicted lower levels of pay satisfaction among female and IT personnel from black ethnic groups. The results from the empirical study of 158 IT personnel supports hypotheses 1, 2, 3 and 4b.

This study contributes to the IT HR and vocational behavior literature by integrating general employee evaluations, such as organizational commitment with more specific evaluative components, such as job and pay satisfaction and by analyzing how these factors link to turnover. First, these results confirm that that irrespective of gender or race, pay satisfaction, job satisfaction, and organizational commitment directly affect turnover intentions. As predicted, there was a negative relationship between pay satisfaction, job satisfaction and organizational commitment with turnover intentions. Furthermore, in this study, organizational commitment and job satisfaction were the most important predictors of

turnover intention, while pay satisfaction was relatively less important. Nevertheless, pay satisfaction was found to have a direct effect on turnover intentions, independently of any effects it has on job satisfaction.

Although researchers differ on the motivating effects of pay, it is clear that IT employees are also motivated by their pay satisfaction, in assessing whether to stay at their present organization. While some researchers insist that organizational commitment is the best predictor of turnover (Porter et al., 1974), the almost equal importance of commitment and job satisfaction – as compared to pay satisfaction – found in this study, has also been noted by other researchers (Rashid and Zhao, 2010). It is not surprising that IT personnel in South Africa that have lower commitment to the organization and low job satisfaction are more likely to leave. The suggestion that IT employees do not place a high value of the goals of the organization and their dissatisfaction with various facets of their job remains a major concern. Nevertheless, this study emphasizes the importance of adopting strategies to deliver more organizational commitment and job satisfaction for IT personnel in the workplace, to counteract the low levels of pay satisfaction.

Similar to Joseph et al. (2012), this study's second important finding is that pay satisfaction also has indirect effects upon an IT employee's intention to leave. There is evidence that low levels of pay satisfaction are an important risk for rousing turnover intentions among IT personnel. However, as in the study by Lum et al. (1998), the findings in this research suggest that organizational commitment and job satisfaction function as partial mediators in the pay satisfaction-turnover intentions relationship. IT personnel who report higher levels of organizational commitment and greater job satisfaction despite relatively low levels of pay satisfaction are more likely to stay rather than leave the organization. Hence, turnover intentions can be reduced by raising the level of organizational commitment and job satisfaction despite low levels of pay satisfaction.

A third important finding is that IT employees from previously disadvantaged (black ethnic) groups appear to be slightly more dissatisfied with their salaries (Zatzick, et al, 2003). Unlike most prior IT turnover studies, this study was explicit about gender and race as important contextual factors.

### **Practical implications**

The current contradictory social and business climate places extra demands on IT employers to meet the pay expectations of IT employees. This seems to apply irrespective of the gender and the ethnic group of the IT employee. One practical implication of this research is that organizational commitment has a much greater impact on turnover intentions than pay satisfaction, so organizations should give the highest priority to tackling organizational commitment in managing staff retention. The second practical implication of the findings is the importance of keeping job satisfaction as high as possible when pay satisfaction is low. The findings suggest that much of the negative impact of pay satisfaction can be mitigated by job satisfaction, and organizations may be able to retain their employees even though their pay satisfaction is low.

Alternatively, organizations can increase pay satisfaction in the short term to retain talented staff while resorting to longer-term interventions with job satisfaction and organizational commitment. For the long term, the findings suggest that much of the impact of pay satisfaction on turnover intentions goes through organizational commitment and job satisfaction. If management can find ways to increase organizational commitment and job satisfaction, they may be able to retain their employees even though employees' perceptions of pay satisfaction are low. Interventions are needed to cultivate positive beliefs

about the job and attitudes toward the organization. Increasing organizational commitment and being sensitive to job satisfaction needs can go a long way in compensating for the negative effects of low levels of pay satisfaction. However, IT employees from previously disadvantaged (black ethnic) groups appear to be slightly more dissatisfied with their salaries, suggesting interventions that confirm the employer's obligations to providing a competitive salary for their talented and racially diverse IT workers. The third practical implication of the findings is that employers need to address perceptions of policy and administration, and distributive and procedural justice practices by the different race groups as they relate to pay.

### **Limitations and recommendations**

Before concluding, the reader should be aware of the following limitations of the study. First, this study examined a limited set of variables and may have omitted other important variables that influence IT turnover intentions in the African context. Second, consistent with other studies using correlation and regression analysis, the causality of the relationships remains tentative. Third, even though this study may be suggestive of the IT human resources management challenges facing the continent in general, care should be taken not to generalize the findings derived from a single African country to other African countries. Fourth, the study also suffers from biases inherent in most voluntary survey-based research. Either very satisfied or very dissatisfied employees are generally more likely to respond to an employee survey. In the case of this survey the respondents reported being moderately satisfied with their jobs.

The study's design limitations also provide some direction for future research. First, organizational commitment was the most significant intervention investigated in reducing perceptions of low pay satisfaction and turnover intentions. Future studies should examine the specific influence of affective, continuance and normative commitment on IT professionals' intention to leave. Some of the other influences that should be considered include nonfinancial psychological rewards such as supervisor and co-worker support. Second, prior research has shown that pay satisfaction varies slightly according to ethnic groups. Although, IT employees in this study in general have low levels of pay satisfaction and gender seems to have had no effect on pay satisfaction, Black IT employees were slightly more dissatisfied with their pay. Given the historical injustices of South African firm's general employment practices in the past, future studies could focus on whether perceptions of policies and administration and distributive and procedural justice as they relate to pay, varies according to gender and race groups. Third, this study focused on employee withdrawal behavior by looking at turnover intentions, however, low levels of pay satisfaction can also lead to poor productivity. Future research should also investigate the relationship between pay satisfaction and the performance of IT employees. It would be also helpful if qualitative research is used to offer a finer grained and situation-specific understanding of IT employee turnover in the African context.

## CONCLUSION

The findings of the study revealed that, irrespective of gender or ethnicity, IT employees in South Africa who are generally less satisfied with the salary they are receiving, have a low degree of commitment to their organizations, and are only moderately satisfied with their jobs. Although organizational commitment and job satisfaction were stronger predictors of turnover intentions than pay satisfaction, these two factors also partially override pay satisfaction in the employee's decision to stay or leave. The results also show that irrespective of gender or ethnic background, employees perceive low levels of pay satisfaction. Given past pay inequities, Black employees continue to be slightly more dissatisfied with their pay than White male employees were. A possible reason is that the perceptions of distributive and procedural justice as they relate to pay may vary according to ethnic groups. A plausible reason for the general importance of salary is the prevailing war of talent among competing firms. The IT industry is growing fast in South Africa and there is a lot of pressure on organizations to retain the required number of skilled IT staff. A change in job in the IT industry means a double-digit increase in salary. As a result, employees are attracted to organizations that pay more. While, pay satisfaction is taking on special importance in the employee's turnover decision, increasing organizational commitment and job satisfaction are important HR interventions that may counter the influence of the external job market and ultimately reduce turnover. Whether South African employers can increase the organizational commitment and job satisfaction of talented IT employees, and whether they are successful at retaining them, in a competitive job market context that continues to relocate IT jobs offshore and resort to contract work, remains to be seen.

## REFERENCES

- Allen, N. J. and Meyer, J. P. (1990) The measurement and antecedents of affective, continuance and normative commitment to the organization, *Journal of occupational and organizational psychology*, 63, 1, 1-18.
- Berkowitz, L., Fraser, C., Treasure, F. P. and Cochran, S. (1987) Pay, equity, job gratifications, and comparisons in pay satisfaction, *Journal of Applied Psychology*, 72, 4, 544-551.
- Blomme, R. J., van Rheede, A. and Tromp, D. M. (2010) The use of the psychological contract to explain turnover intentions in the hospitality industry: a research study on the impact of gender on the turnover intentions of highly educated employees, *The International Journal of Human Resource Management*, 21, 1, 144-162.
- Byars-Winston, A., Fouad, N. and Wen, Y. (2015) Race / ethnicity and sex in U . S . occupations , 1970 – 2010: Implications for research , practice , and policy, *Journal of Vocational Behavior*, 87, 54-70.
- Career Junction. (2016). South Africa's Latest Salary Review. Retrieved January 23, 2017 from <https://cj-marketing.s3.amazonaws.com/South-Africa-Salary-Trends.pdf>
- Cha, H. S. and Quan, J. (2011) A global perspective on information systems personnel turnover, *Journal of Global Information Technology Management*, 14(4), 4-27.
- Cho, V. and Huang, X. (2012) Professional commitment, organizational commitment, and the intention to leave for professional advancement: An empirical study on IT professionals, *Information Technology & People*, 25, 1, 31-54.
- Churchill Jr, G. A. (1979) A paradigm for developing better measures of marketing constructs, *Journal of Marketing Research*, 16, 64-73.
- Commission for Employment Equity. (2016) 16th Commission for Employment Equity Annual Report. Pretoria. Retrieved January 22, 2017 from <http://www.labour.gov.za/DOL/downloads/documents/annual-reports/employment-equity/2015-2016/16th CEE Report.pdf>
- Currall, S. C., Towler, A. J., Judge, T. A. and Kohn, L. (2005) Pay satisfaction and organizational outcomes, *Personnel Psychology*, 58, 3, 613-640.

- Curry, James P., Wakefield, Douglas S, Price James L. and Mueller, C. W. (1986) On the Causal Ordering of Job Satisfaction and Organizational Commitment, *Academy of Management*, 29(4), 847-858.
- DeConinck, J. B. and Stilwell, C. D. (2004) Incorporating organizational justice, role states, pay satisfaction and supervisor satisfaction in a model of turnover intentions, *Journal of Business Research*, 57, 3, 225-231.
- Ghapanchi, A. H. and Aurum, A. (2011) Antecedents to IT personnel's intentions to leave: A systematic literature review. *Journal of Systems and Software*, 84, 2, 238-249.
- Gieter, S. De, Cooman, R. De, Hofmans, J. and Pepermans, R. (2012) Pay-Level Satisfaction and Psychological Reward Satisfaction as Mediators of the Organizational Justice-Turnover Intention Relationship, *International Studies of Management & Organization*, 42, 1, 50-67.
- Goswami, S. (2014) Work-Life Conflict Among IT Professionals, *The IUP Journal of Organizational Behavior*, 7, 4, 38-59.
- Government Gazette General Notice. (2014). National Scarce Skills List: Top 100 Occupations In Demand. Retrieved January 23, 2017 from <https://www.dhet.gov.za/Gazette/List%20of%20occupations%20in%20high%20demand%202014%20.pdf>
- Hair, J. F. J., Black, W. C., Babin, B. J. and Anderson, R. E. (2014) *Multivariate Data Analysis*, Pearson, Essex.
- Heavey, A. L., Holwerda, J. A. and Hausknecht, J. P. (2013) Causes and consequences of collective turnover: A meta-analytic review, *Journal of Applied Psychology*, 98, 3, 412-453.
- Heneman, H. and Schwab, D. (1985) Pay satisfaction: Its multidimensional nature and measurement, *International Journal of Psychology*, 20, 2, 129-141.
- Holtom, B. C., Mitchell, T. R., Lee, T. W. and Eberly, M. B. (2008) Turnover and Retention Research: A Glance at the Past, a Closer Review of the Present, and a Venture into the Future, *The Academy of Management Annals*, 2, 1, 231-274.
- Igbaria, M., Meredith, G. and Smith, D. C. (1994) Predictors of intention of IS professionals to stay with the organization in South Africa, *Information and Management*, 26, 5, 245-256.
- Igbaria, M., Meredith, G. and Smith, D. C. (1995) Career orientations of information systems employees in South Africa, *Journal of Strategic Information Systems*, 4, 4, 319-340.
- Joseph, D., Ang, S. and Slaughter, S. (2006) Examining the Role of General and Firm-Specific Human Capital in Predicting IT Professionals' Turnover Behaviors. In *Proceedings of the 2006 ACM SIGMIS CPR conference on computer personnel research: Forty four years of computer personnel research: achievements, challenges & the future* (pp. 120-122). ACM.
- Joseph, D., Boh, W. F., Ang, S. and Slaughter, S. A. (2012) The career paths less (or more) traveled: a sequence analysis of it career histories, mobility patterns, and career success, *MIS Quarterly*, 36, 2, 427-452.
- Joseph, D., Ng, K., Koh, C. and Ang, S. (2007) Turnover of Information Technology Professionals: A Narrative Review, Meta-Analytic Structural Equation Modeling, and Model Development, *MIS Quarterly*, 31, 3, 547-577.
- Joshi, K. D., Kvasny, L., Unnikrishnan, P. and Trauth, E. (2016) How Do Black Men Succeed in IT Careers? The Effects of Capital. In *System Sciences (HICSS), 2016 49th Hawaii International Conference on* (pp. 4729-4738). IEEE.
- Judge, A. and Klinger, R. (2000) Job Satisfaction Subjective Well-Being at Work, *The Science of Subjective Well-Being*, 393-413.
- Judge, T. A., Piccolo, R. F., Podsakoff, N. P., Shaw, J. C. and Rich, B. L. (2010) The relationship between pay and job satisfaction: A meta-analysis of the literature, *Journal of Vocational Behavior*, 77, 2, 157-167.
- Judge, T. A. and Welbourne, T. M. (1994) A confirmatory investigation of the dimensionality of the Pay Satisfaction Questionnaire, *Journal of Applied Psychology*, 79, 461-466.
- Kim, S. (2009) IT Employee Job Satisfaction in the Public Sector, *International Journal of Public Administration*, 32, 1070-1097.
- Krishnan, S. K. and Singh, M. (2010) Outcomes of intention to quit of Indian IT professionals, *Human Resource Management*, 49, 3, 421-437.
- Locke, E. A. (1969) What is Job Satisfaction? *Organizational Behavior and Human Performance*, 4, 309-336.
- Lum, L., Kervin, J., Clark, K., Reid, F. and Sirola, W. (1998) Explaining nursing turnover intent: job satisfaction, pay satisfaction, or organizational commitment? *Journal of Organizational Behavior*, 19, 3, 305-320.

- Lundquist, J. H. (2008) Ethnic and Gender Satisfaction in the Military: The Effect of a Meritocratic Institution, *American Sociological Review*, 73, 3, 477-496.
- Mbarika, V. W., Okoli, C., Byrd, T. A. and Datta, P. (2005) The neglected continent of IS research: A research agenda for Sub-Saharan Africa, *Journal of the Association for Information Systems*, 6, 5, 130-170.
- Mak, B. L. and Sockel, H. (2001) A confirmatory factor analysis of IS employee motivation and retention, *Information & Management*, 38, 5, 265-276.
- Meyer, J. P. and Allen, N. J. (1991) A three-component conceptualization of organizational commitment, *Human resource management review*, 1, 1, 61-89.
- Moore, J. E. and Burke, L. A. (2002) How to turn around “turnover culture” in IT, *Communications of the ACM*, 45(2), 73-78.
- Naidoo, R. (2016), A communicative-tension model of change-induced collective voluntary turnover in IT, *The Journal of Strategic Information Systems*, 25, 4, 277-298.
- Nkomo, S. M. (1992) The emperor has no clothes: Rewriting “race in organizations”, *Academy of Management Review*, 17, 3, 487-513.
- Nzokuma, K. C. C. and Bussin, M. (2011) Job-hopping amongst African Black senior management in South Africa. *SA Journal of Human Resource Management*, 9, 1, 1-13.
- Pond, S. B. and Geyer, P. D. (1991) Differences in the relation between job satisfaction and perceived work alternatives among older and younger blue-collar workers, *Journal of Vocational Behavior*, 39, 2, 251-262.
- Porter, L. W., Steers, R. M., Mowday, R. T. and Boulian, P. V. (1974) Organizational commitment, job satisfaction, and turnover among psychiatric technicians, *Journal of Applied Psychology*, 59, 5, 603-609.
- Rashid, H., and Zhao, L. (2010) The significance of career commitment in generating commitment to organizational change among information technology personnel, *Journal of Management Information and Decision Sciences*, 13,1, 111-131.
- Ravishankar, M. N., Pan, S. L. and Myers, M. D. (2013) Information technology offshoring in India: a postcolonial perspective, *European Journal of Information Systems*, 22, 4, 387-402.
- SamGnanakkan, S. (2010) Mediating role of organizational commitment on HR practices and turnover intention among ICT professionals, *Journal of Management Research*, 10, 1, 39-61.
- Shih, S. P., Jiang, J. J., Klein, G. and Wang, E. (2013) Job burnout of the information technology worker: Work exhaustion, depersonalization, and personal accomplishment, *Information and Management*, 50, 7, 582-589.
- Singh, P. and Loncar, N. (2010) Pay Satisfaction, Job Satisfaction and Turnover Intent, *Industrial Relations*, 65, 3, 470-490.
- Smith, D. C. and Speight, H. L. (2006 April). Antecedents of turnover intention and actual turnover among information systems personnel in South Africa. In *Proceedings of the 2006 ACM SIGMIS CPR conference on computer personnel research: Forty four years of computer personnel research: achievements, challenges & the future* (pp. 123-129). ACM.
- Stella, M. (1992) The Emperor Has No Clothes : Rewriting ' Race in Organizations, *The Academy of Management Review*, 17, 3, 487-513.
- Survey ITWeb/CareerWeb IT Salary. (2016). IT salaries in South Africa. Retrieved December 15, 2016, from <http://www.itweb.co.za/index.php?>
- Tang, T. L. and Talpade, M. (1999) Sex Differences in Satisfaction With Pay and Co-Workers: Faculty and Staff at a Public Institution of Higher Education, *Public Personnel Management*, 28, 3, 345-349.
- Telecommunications & Postal Services. (2016). National Integrated ICT Policy White Paper. Pretoria. Retrieved January 23, 2017 from [https://www.dtps.gov.za/images/phocagallery/Popular\\_Topic\\_Pictures/National\\_Integrated\\_ICT\\_Policy\\_White.pdf](https://www.dtps.gov.za/images/phocagallery/Popular_Topic_Pictures/National_Integrated_ICT_Policy_White.pdf)
- Thatcher, J. B., Liu, Y., Stepina, L. P., Goodman, J. M. and Treadway, D. C. (2006) IT worker turnover: an empirical examination of intrinsic motivation, *ACM SIGMIS Database*, 37, 2-3, 133-146.
- Thatcher, J. B., Stepina, L. P., Boyle, R. J. and Bennett, J. (2002) Turnover of Information Technology Workers: Examining Empirically the Influence of Attitudes , Job Characteristics , and External Markets Turnover of Information Technology Workers: Examining Empirically the Influence of Attitudes , Job Characteristics, *Journal of Management Information Systems*, 19, 3, 231-261.

- Urieși, S. (2016) Pay Satisfaction and Work Meaningfulness as Factors of IT Professionals' Turnover Intentions: An Investigation in the Romanian Context, *Postmodern Openings*, 7, 2, 149-166.
- Van Dick, R., Christ, O., Stellmacher, J., Wagner, U., Ahlswede, O., Grubba, C. and Tissington, P. A. (2004) Should I Stay or Should I Go? Explaining Turnover Intentions with Organizational Identification and Job Satisfaction, *British Journal of Management*, 15, 351-360.
- Williams, M. L., McDaniel, M. A. and Nguyen, N. T. (2006) A meta-analysis of the antecedents and consequences of pay level satisfaction, *The Journal of Applied Psychology*, 91, 2, 392-413.
- Windeler, J. B. and Riemenschneider, C. K. (2016) The influence of ethnicity on organizational commitment and merit pay of IT workers: the role of leader support, *Information Systems Journal*, 26, 2, 157-190.
- Zatzick, C. D., Elvira, M. M. and Cohen, L. E. (2003) When is More Better? The Effects of Racial Composition on Voluntary Turnover, *Organization Science*, 14, 5, 483-496.