UNIVERSITY OF KWAZULU-NATAL

FACTORS MOTIVATING INFORMATION TECHNOLOGY PROFESSIONALS TO BECOME SELF-EMPLOYED

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DECLARATION

I, Roopnarain Dwarika, declare that

      (i) The research reported in this dissertation/thesis, except where otherwise indicated, is my original research.

      (ii) This dissertation/thesis has not been submitted for any degree or examination at any other university.

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This dissertation is dedicated to my music guru Swathi Kulkarni for her absolute inspiration.

Abstract

The world economy and industry in turn is driven by technology and innovation at a rapid rate. Worldwide, the information technology (IT) industry is volatile in terms of turnover intentions of IT professionals The unemployment level in South Africa is high according to global standards. The option of contracting as an IT consultant or self-employment is a form of an alternate employment arrangement. This arrangement will benefit the unemployed in South Africa if they choose to skill themselves and pursue a career in self-employment in the IT industry. There are internal and external employment factors that affect an IT professional's employment arrangement. Moore's (2000) information technology employee turnover model was adapted as a basis for this research. An external factor, entrepreneurship (self-employment) was introduced to Moore's model. This research also tests Moore's (2000) model for its internal factors. The following factors, role ambiguity, role conflict, autonomy, perceived workload, fairness of reward, work exhaustion and entrepreneurship were formulated in the hypotheses to determine which of these factors influences self-employment in IT professionals. Information technology professionals based in Durban were the target respondents in the City of Durban. The survey questionnaire was emailed to respondents using Questionpro. The sample data was based on 123 respondents who completed the survey. The data was then validated for internal consistency using Cronbach alpha ratio generated by the SPSS (version 19.0) software tool. The quantitative research design was chosen. Frequency tables and Pearson's bivariate correlation coefficient statistics was used in the data analysis phase. The research objective was achieved successfully and the following factors were determined, they are role ambiguity, role conflict, autonomy, work exhaustion and entrepreneurship. The IT industry is volatile with IT professionals constantly re-skilling themselves to be on par with changing technology and innovation that make them very competent and competitive as a result, these IT professionals create a market for self-employment.

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CHAPTER ONE

Introduction to Research

1.1   Introduction

The world economy and industry in turn is driven by technology and innovation at a rapid rate (Westlund & Hannon, 2008). The world has become a global village, borders and barriers are disappearing (Ahmed, Qadri, Shahzad & Khilji, 2011). As Information Technology (IT) has had a great impact on globalisation; multinational companies depend on IT for global management and enjoy competitive advantage over other companies that have not implemented IT on a comprehensive scale (Ahmed et al., 2011). Organisational restructuring, globalisation and technological change are having a dramatic impact on the availability and nature of work (Adams & Demaiter, 2008). Therefore IT personnel with their sought after technical expertises are an important resource and firms find it difficult to employ and retain them (Westlund & Hannon, 2008).

The retention of the IT worker has been a challenge to human resource managers in several business institutions and enterprises. Westlund and Hannon (2008) have found that in this 21st century the IT workforce is in demand for its technical skills and hi-tech expertise therefore the trend is such that IT employees are showing more interest at an individual level to their own profession, individual improvement and development whereas their employers are not (Gooley, 2001). Therefore Adam and Demaiter (2008) argue that global changes allow IT workers autonomy, insecurity, stress, job loss and flexibility. For this reason this research investigates self-employment and IT employee turnover intentions.

This chapter will introduce the research problem and the factors that influence IT employee turnover intentions and self-employment (entrepreneurship). The motivation for the study, objectives, limitations and the focus group will be discussed. Throughout this research turnover intentions will refer to IT employee turnover intentions.

1.2   Problem Statement

Background

Kerr-Pkillips (2009) observed that South Africa is experiencing a skills crisis, especially the retention of talented workers, therefore the loss of skilled and intellectual workers has a negative outcome and impacts on the social and economic growth of the country. The turnover rate of IT professionals is one of the greatest challenges that organisations encounter. To retain IT professionals is strategic and vital to organisations because they have specialized IT skills and tacit knowledge and they know how internal system's procedures operate (Jeseph, Ng, Koh & Ang, 2007). The workforce is becoming diverse. Economic changes such as acquisitions, mergers and job losses have resulted in job insecurity. The inevitable impact to individuals and the economy is the loss of employment (Coetzee, Ferreira, Lumley & Tladinyane, 2011).

Problem Statement

There is an increasing pressure for South African Organisations to improve performance and maintain their competence. This pressure is also characterised by restructuring, downsizing, outsourcing, and re-organising the business in order to cope with the challenges of hi-tech sophistication and globalisation (Coetzee & de Villiers, 2010). Therefore this has contributed to a number of different forms of employment arrangement such as non-permanent, permanent employment contracts and contingent work force. There is a shortage of IT professionals and Kadlec & Shropshire (2012) states that business is forced to spend more to hire IT professionals. This study focuses on work exhaustion and entrepreneurship ability as factors that motivate IT professionals to change their career as full time employment to self-employment or entrepreneurship.

IT professionals are more affected by new IT developments therefore they need to stay current with skills and knowledge (Joseph, Ng, Koh & Ang, 2007). Kadlec & Shropshire (2012) argues that in the IT field, there is little research on career exodus. IT workers who are unhappy seek a career change. Some find greener pastures by

taking positions with different organizations, others want entirely new careers such as consulting or self-employment. The supply-demand gap in the IT labour force compounds recruitment and staffing problems. IT professionals are not satisfied with their current employment arrangement and are likely to seek alternate employment opportunities (Moore, 2000). There are many factors related to the IT work environment that influences the workers commitment to the employer and satisfaction with the job (Moore, 2000). Some of factors that motivate this research are organisational commitment, job satisfaction, turnover intention, work exhaustion or job burnout and self-employment or entrepreneurship (Moore, 2000).

There is a shortage of IT professionals and Kadlec & Shropshire (2012) states that business is forced to spend more to hire IT professionals. This study focuses on work exhaustion and entrepreneurship ability as factors that motivate IT professionals to change their career as full time employment to self-employment or entrepreneurship.

1.3   Motivation for the Study

In today's world of international migration, demographic change and globalisation, the workforce is becoming diverse. The nature of work and careers in today's demanding times is changing; therefore employees are open to the elements of insecurity, anxiety and stress (Coetzee & Gunz, 2012). As a result in the 21st century, the workers are experiencing greater levels of talent mobility (Coetzee et al., 2011). Employees seek to choose their own individual work preferences to satisfy their own demands, therefore employers and organisations are concerned about retaining skilled and talented workers (Coetzee et al., 2011). At the same time the labour market trend in the IT field has created promising and lucrative career opportunities for IT professionals internationally, thus the retention and recruitment of IT professionals poses a great challenge and a problem for organisations (Coetzee et al., 2011).

Buitendach and De Witte (2005) noted that the economy is placing enormous pressure on business and industry to improve their performance and to become increasingly profitable and productive therefore in such a competitive environment, the primary consideration for most organisations is their profits (Buitendach & De

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Witte, 2005). In order for them to achieve a competitive advantage, companies need to find out the sources of cost-savings (Buitendach & De Witte, 2005).

Specialised skills are hard to replace, when IT employees with specialised skills are retained then there is cost savings and profitability, this is very important to the organisation (McKnight, Phillips & Hardgrave, 2009). IT employee turnover has been costly to organisations, therefore according to Westlund and Hannon (2008) there are escalating costs in recruiting, selecting and training IT personnel. When IT employees leave their organisation, they add to the expenses and some of the costs are hidden, such as lack of continuity on a project or product, time delay costs, diminishing future business and lack of customer service (Westlund & Hannon, 2008).
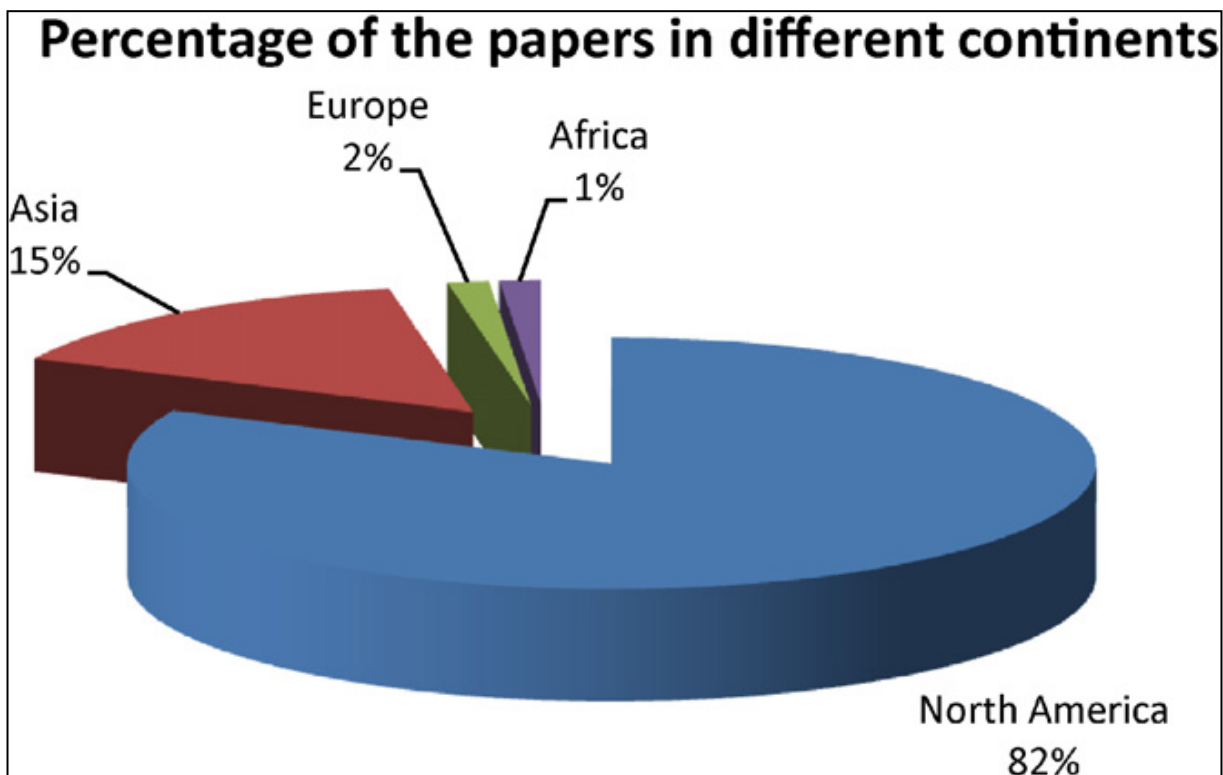
Figure 1.1 Rate of Papers per Continent. Adapted from Ghapanchi and Aurum, (2011).

Figure 1.1 provides a summary of research on IT employee turnover done on the four selected continents namely Europe, Africa, North America and Asia. Ghapanchi and Aurum (2011) reported that the number of research papers increased since 1998 peaking in 2002 and 2006. In the IT profession, according to Ghapanchi and Aurum (2011), IT employee turnover research in the US is higher than in Europe, Africa and Asia. In second position is Asia behind North America when considering the number of times IT employee turnover research studies were done. Europe records a moderately lower percentage of voluntary IT employee turnover research as compared to Asian researchers who studied job related attributes such as role ambiguity, role conflict, work load as well as individual attributes such as age, gender, education and organisational tenure (Ghapanchi & Aurum, 2011).

As seen from Figure 1.1 the employee IT turnover intention studies were done in the developed countries. There appears to be little research done in the emerging economies such as South Africa on IT turnover. There is also the gap in the knowledge about different emerging work arrangements that contribute to additional factors that affect voluntary IT turnover such as self-employment or entrepreneurship. Thus, the broad statement of the problem is: Factors Motivating IT Professionals to become Self-employed

The rationale and motivation for doing this study is:
- As per Figure 1.1 very little research has been conducted in South Africa on the subject.
- South African employers are unable to retain IT staff because of the supply and demand of IT skills (Urwin, 2011).

The South African economy and companies find themselves competing for knowledge and IT professionals in order to become competitive in the global arena (Chipunza & Kabungaidze, 2012). The employee turnover of IT professionals is costly with regards to replacing staff, training new employee. As a result of IT turnover systems development, quality and productivity is compromised, IT turnover

creates direct cost in recruiting and retraining new staff and as well as indirect cost such as disruptions and loss of business Chang (2009). Chang (2009) also states that to replace an IT professional the organisation may spend up to seven times the employee's annual salary.

In the current economic environment, where productivity and growth is largely a product of creativity and technological innovations, human capital such as IT professionals is one of the organisation's most valuable assets. To obtain a competitive advantage, companies must attract, retain, and engage talented or skilled IT professionals, thus this creates a huge challenge for organisations to attract and retain IT professionals (Chipunza & Kabungaidze, 2012).

This research focuses on the attributes such as role ambiguity, role conflict and work load as well as individual attributes such as age, gender, education and organisational tenure. These factors will be discussed in Chapter Two.

1.4   Research Focus

IT professionals display the desire to grow, to challenge, to learn and acquire new skills, acquire self-determination and autonomy (Lee, 2000). Information technologies professionals work in an energetic and self-motivated environment in which ongoing updating of skills are necessary (Lee, 2000). IT professionals are preferred as the focus group in this research. The detail research focus and location of study will be presented in Chapter Three.

1.4.1 Information Technology (IT) Professionals

The expression "Information Technology", according to Baltzan and Phillips (2009) refers to the use of technology whereby information is managed and processed. The term "information technology professional", according to Lee (2009) refers to workers who are directly employed and use technology to manage and process information which in the broad sense include network specialists, data base administrators, application developers, hardware and software engineers, web and internet application developers and mobile communications developers. Lee (2000) argues that dissatisfied and unhappy IT professionals seek transformation and change;

therefore some find greener pastures by taking position with different organisations; others want entirely new career change.

The aim of this study was to explore the influence of IT employee turnover intentions towards self-employment or entrepreneurship among IT professionals. This is done through the use of Moore's (2000) turnover model. In Chapter Two the factors are presented. The following are the primary factors in Moore's (2000) turnover model that influence turnover intention:

- Role Conflict
- Perceived workload
- Autonomy
- Fairness of Reward
- Role Ambiguity
- Work Exhaustion

An additional factor, entrepreneurship is introduced into Moore's (2000) turnover model. This study intends to examine the above factors to determine if these factors influence IT turnover intentions towards self-employment among IT personnel residing in the city of Durban, the central region of eThekwini municipality in KwaZulu-Natal, Republic of South Africa. Westlund and Hannon, (2008) noted that employee's intention to voluntarily resign from their current organisation affect their employers, also the persons whom they leave behind and the individuals themselves, therefore the intention to resign can have encouraging and disappointing consequences for the organisation and staff (Westlund & Hannon, 2008).

1.5   Objectives
With technology innovation and emerging alternate employment arrangements, previous research does not provide sufficient clarification on voluntary turnover among IT professionals. The landscape of the IT industry is changing, therefore this study investigates the turnover tendency of IT professionals to another form of turnover that is the turnover towards self-employment or to entrepreneurship.

Studying the turnover trend will assist human resource administrators and work force planners design a successful retention strategy.

The objectives of the study were to:

- Identify factors that influence employee turnover intentions among IT professionals towards self-employment (entrepreneurship).
- Adapt Moore's (2000) turnover model to identify the factors that influence self-employment and IT employee turnover intentions.
- Adapt Moore's (2000) turnover model to identify and verify the factors that influence work exhaustion and IT employee turnover intentions.
- Identify which of the following factors role conflict, perceived workload, role ambiguity, autonomy and fairness of rewards influences work exhaustion and entrepreneurship.

The study will also help job-related administrators and prospective employment seekers have an improved perception of the information technological environment. The IT job requirements and current career changes will benefit management and workers in the IT sector.

1.6   Research Questions

Moore (2000) stated that employee turnover research focused on why employees voluntarily leave their organisations. This study focuses on the factors that direct IT workers in making their career decisions in terms of resigning their current full time employment and seek to pursue their IT careers in entrepreneurship, as self-employed individuals or alternatively engage employment in another company. Moore (2000) believes that career transformations from full time employment to self-employment intentions are psychological.

In the IT field there is little research on career exodus (Kadlec & Shropshire, 2012). Therefore it was necessary to review related studies from Moore (2000). In view of the rate of voluntary IT turnover, an alternate trend seems to emerge and that may be in the form of IT professionals quitting their job to take up new positions, engaging in

self-employment or entrepreneurship. To follow this trend, this research poses the question: What factors influence voluntary IT employee turnover intention towards self-employment or entrepreneurship? Moore's (2000) turnover model has been used to determine which of the following factors have the influence on entrepreneurship and voluntary turnover intentions among IT professionals –

- Perceived workload
- Role Ambiguity
- Role Conflict
- Autonomy
- Fairness of Reward.

1.7   Benefits of the Study to Stakeholders

Managing and administrating IT human resource departments is difficult (Kim & Wright, 2007). At the same time reducing the voluntary employee turnover rate also poses a difficult task for company executives and human resource managers. Therefore in the current IT market, firms encounter a challenge with substantial demand to attract, manage and retain IT professionals. In order to manage IT professionals, environmental and organisational factors must be taken into consideration. These factors will be presented in Chapter Two.

Numerous stakeholders will benefit from studies related to voluntary employee turnover among IT professionals. Human resource managers in organisations and government institutions need to develop a new recruitment and contracting strategy (Hegar & Hodgetts, 2005). IT professionals need to flex their muscles in terms of the changing landscape of the IT work environment (Kim & Wright, 2007). Employment agencies, free agents and trade unions will have to design or amend their recruitment policies (Hegar & Hodgetts, 2005), therefore educational institutions such as universities, private colleges and students need to know of the changing landscape of the IT work environment. The IT service providers, private and corporate business enterprises will benefit from voluntary employee IT turnover studies that centre on self-employment.

1.8 Assumptions

- The respondents fully understood the scope of the study and answered independently and competently.

- The respondents who completed the survey are IT or Information Communications and Technology professionals.

1.9 Limitations of the Study

- The results of this research may be generalised only to the career development activities of IT Professionals.

- The research provides a list of factors that relate only to voluntary turnover.

- This research does not cover employee death or employee dismissals. The employees that are dismissed may be reluctant to divulge information that is sensitive about the facts concerning their dismissal.

1.10 Methodology

Quantitative research has qualities of rationalism, follows a structured, rigid and predetermined methodology, emphasis is on the size of the sample, the aim is to determine the variation in the observed incident or phenomenon and endeavours to generalise to the total population (Kumar, 2011). For this study the quantitative methodology was adopted. The quantitative research design is discussed in chapter three.

1.11 Chapter Outline

1. Chapter One introduced the research and briefly proposed how and where the study will take place. The focus group and the research questions are introduced.

2. Chapter Two presents all factors influencing IT professional's employment arrangement. Moore's (2000) model is discussed.

3. Chapter Three discusses the research methodology in detail. The research questions are formulated. The research design, pretesting, data analysis and validation are discussed.

4. Chapter Four presents the descriptive statistical data for the demographic variables, the constructs and finally presents Pearson's correlation coefficient on the empirical data.

5. Chapter Five discusses the results of the empirical data.

6. Chapter Six presents the conclusion and recommendations from this research.

1.12 Summary

In this chapter the primary factors and Moore's (2000) employee IT turnover model were introduced. The research focus, the research question, assumptions and limitations were presented. In the next chapter as part of the literature review, many factors, which are external or internal environmental factors are outlined and eventually the salient factors presented in Moore's model (2000) are discussed.

CHAPTER TWO

Literature Review of Employment Factors

2.1   Introduction

IT and computers have given businesses and organisations exceptional levels of control over the information required to make a successful business decision. Information relating to manufacturing, marketing, financial and general management is available today at the push of a button (Essinger & Dembitz, 2000). Technology and software packages with all types of business skills can give even the smallest organisation access to the state-of-the-art management skills (Essinger & Dembitz, 2000).

Essinger and Dembitz (2000) believe IT accordingly tends to increase competition in the industry emphasizing efficiency, quality, speed, innovation and places a special emphasis on knowledge and expertise. Thus there is a tendency for the activities of commerce and industry to become more complex and technically more demanding (Essinger & Dembitz, 2000). The accumulation of expertise is enhanced by the fact that organisations in businesses focus on maximising profits (Essinger & Dembitz, 2000).

There are many factors that influence employee turnover. In order to gain clarity as part of the literature review these factors will be discussed. The salient factors in Moore's model (2000) are presented in detail. Employee turnover, employee retention and the IT environment are discussed.

2.2   Motivation

Motivation is the emotional drive that psychologically directs an individual towards new goals or objectives (Hegar & Hodgetts, 2005). Motivation is derived from the Latin word movere, which is to move. Whenever people are working hard, this means that they are motivated therefore this is noticeable in the progress of their actions. Motivation involves both mental and physical action. Analysis of motivation is to determine why people act as they do and also how people act in the manner they do. Motives are often defined as needs, drives, wants or impulses within the individual.

Motives arouse and maintain an activity and determine the direction of an individual's goal. Motive will positively or negatively influence an individual. To determine which motives or needs or factors a person will attempt to satisfy it is necessary to examine the factor's that motive's strength (Hegar & Hodgetts, 2005). In this research the factors or motives will be outlined and the research questionnaire will determine to what extent the motives or the factors in Moore's (2000) model influence the individual's goal directed behaviour.

2.3   Turnover

Most Human Resource movement takes place through employee demotions, promotions and relocations (Hegar & Hodgetts, 2005). A different form of employee movement involves voluntary turnover: the movement of employees out of the organisation. Grobler, Warnich, Carell, Elbert and Hatfield, (2006) states that employee turnover is an outcome of resignations (voluntary resignations), transfer out of organisation, discharges, retirement and death. Grobler et al. (2006) states that some employee turnover can renew an idle organisation, however, extreme turnover creates an unsteady workforce, escalates costs, and creates organisational incompetence. The causes of turnover are influenced by internal and external issues.

The various factors are universal, economic conditions, local labour market, personal mobility, job security, demographic factors and organisational issues. Employee turnover is any permanent loss of employees from an organisation that has to be replaced (Grobler et al., 2006). Turnover intention is the mind-set or career decision in the direction of seeking another job (Joseph et al., 2007).

Turnover of IT employees has been a major concern for Human Resource management since the inception of computers and continues to be a concern (Moore, 2000). IT personnel have a strong inclination to give up their current job and join a different company. Moore (2000) further mentioned that IT turnover and retention studies have focused on how employee work awareness predicted their emotional mind-set and thus influenced turnover intention. For instance, a perception concerning one's occupation influences job satisfaction, which if negative, activates

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turnover intention. Moore (2000) studied how work awareness influenced work exhaustion and thereby had an effect on turnover intention.

IT turnover is a concern for many employers because of the high expenses and ever-increasing costs directly related to IT turnover and the precise cost is complicated to establish (Lee, 2000). Turnover, consequently, has a significant impact on an organisation's operating costs (Lee, 2000). Also Joseph et al. (2007) found that there is a high turnover rate among IT professionals, and this creates a challenge to management and employers.

Lee (2000) suggests that some distinct factors may exist in the circumstances for IT employees to quit their current job, also IT professionals form a unique group of people who have a strong necessity to grow and improve, they have a strong yearning for knowledge and they have a strong desire to challenge and expect challenges. The high turnover rate is when IT professionals who make an effort to re skill themselves in order to keep abreast with technology advancement seek alternate employment which then creates a problem to employers to retain these skills (Lee, 2000). According to Ang and Slaughter (2004) there is an ever-increasing demand for skilled IT professionals and many organisations experience the challenges to redesign efficient recruitment and retention strategy for their IT staff.

2.4 Employee Retention

Innovation is rapid in the IT industry, the expansion of the mobile technology industry, globalisation of businesses, and the expansion of the IT sector to the worldwide economy creates challenges to organisations that are looking to employ and retain skilled and talented IT professionals (Ang & Slaughter, 2004). In the technology sector according to Ang and Slaughter (2004) the IT labour market is volatile, unpredictable and disruptive therefore organisations need to engage skilled technologists to keep up to date with technology. Joseph et al. (2007) believes that organisations are facing a problem in order to retain IT Professionals and this is becoming more difficult.

During the twentieth century, permanent employment was the social norm between the employee and the employer. Work was based on a simple principle: "as long as firms remained profitable, they would provide employees with secure jobs in return for effort and loyalty" (Barley, Evans & Kaunda, 2002: 234). In the 1980s, most of the professional group of employees were of the belief that being permanently employed in a company with a good reputation would promise them job security and everlasting salary, provided they got the work done, there was economic growth in the country, and the employer's company was profitable (Barley et al., 2002).

Barber and Waymon (2007) have found that the ongoing predicament of downsizing, outsourcing, co-sourcing and mergers pose a crisis and create a challenge to organisations that are counting on the workers to get the job done. Barber and Waymon (2007) argue that in the past, employees depended on one company and one career title and remained in one organisation until retirement. A swing now is that the big business strategy is forcing employees to focus all their energy on attempting to make a livelihood no matter what the predicament is in the organisation (Barber & Waymon, 2007) therefore the new job securities reside in the employee, not the title of the job or the employer (Barber & Waymon, 2007).

Barley et al. (2002) points out that industries provide employment security, career path, high wage, and attractive fringe benefit. Barley et al. (2002) found that employment relations research studies report that employees are pushed "into temporary employment by circumstances that make it difficult for them to find full-time jobs" (Barley et al., 2002: 237). Employees afterward experience an ongoing sense of lack of self-confidence, insecurity and hesitation. Some employees choose to accept their reimbursement like immediate cash rather than wait for a salary at the end of the month. Other employees prefer obtaining pleasure from knowing that their work is in fact essential and valuable to the companies that are experiencing difficulties (Barley et al., 2002).

Retention of IT employees has been a challenge for many human resource managers in organisations for many decades. Employees with experience in technical and specialised skills are in high demand. IT professionals have shown more reliability to their own career and personal improvement than to their organisations (Gooley, 2001).

Barber and Waymon (2007) argue it is no more the employer's responsibility to provide training, than it is each individual's choice to look for his or her skills deficiency and retrain him or herself. It is therefore the individual's personal responsibility to develop his or her own career. That means learning not only for their existing job, but also for their subsequent jobs in the days to come. Barley et al. (2002), argues that labour markets have become more volatile and that jobs' permanent status has become shorter. This gave rise to the contingent labour force (Barley et al., 2002). The term contingent labour applies to short term or temporary employment (Barley et al., 2002).

2.5   The Current Information Technology Environment

The technology revolution has changed the way employees do their jobs and the location where some of them work. It is extensively acknowledged by Mak and Sockel (2001) that the employment arrangement between organisations and their Information Services employees are constantly changing. These constant changes threaten to reduce the productivity of Information Systems operations and increase IT turnover intention (Mak & Sockel, 2001). To fulfil the IT professional's requirements is not simple as IT employees can with ease find job opportunities due to the demand for specialised skills. The demand is greater than the supply. Retaining IT professionals is a challenge for many companies. Consequently IT professionals are inclined to leave their existing employer to join a different company (Korunka, Hoonakker & Carayon, 2008).

The utilisation of IT workforce as contractors is on the increase to complement the resignations of permanent workers (Ang & Slaughter, 2001). Outsourcing is an activity where the supplier delivers the goods and or services that would previously have been provided in-house, determined by an agreement beforehand between the

buyer and the supplier (Tho, 2005) and this is due to the environment being unstable and competitive, influenced by the swift advancement in IT (Ang & Slaughter, 2001). External environmental factors, such as career market factors are other concepts that are affecting employee turnover, such as spontaneous employment offers and outsourcing can without difficulty, influence turnover intention (Niederman, Sumner & Maertz, 2006). South African companies are also facing the same problem to re-skill and retain talent in order to control the factors that contribute to turnover (Kerr-Phillips & Thomas, 2009).

2.6   South African IT Skills Shortage

Jobs skills shortage is already a reality in the IT industry, the manufacturing industry and is likely to spread to the other business sectors over the next ten to fifteen years as the baby boomers retire (Hegar & Hodgetts, 2005). Highly skilled and well trained people will be required in the IT industry and the electrical utility industry. Shortages are expected in the global market for competent managers, technicians, engineers, skilled frontline workers that mostly requiring a college degree or technical education (Hegar & Hodgetts, 2005).

Daniels (2007) argues that the skills shortage in South Africa is unclear; the most important characteristic is that the demand for certain skills exceeds supply. South Africa's skills shortage links to our history as an Apartheid state. South Africa's isolation, geo-political and economic policies, was transformed in the democratic era (Daniels, 2007). Companies are required to become more competitive, innovative and export oriented, requiring capital-intensive technological change suggesting organisational strategy and production resulting in skills implication (Daniels, 2007).

The use of IT was more or less lacking until recently in the whole of Africa (Gillwald, Milek & Stork, 2010). Kerr-Phillips and Thomas (2009) observes that it is crucial that South Africa establishes itself and takes part in the global economy. Compared to 55 nations, South Africa is 53rd in terms of competitiveness, and the component needed to drive competence is skills (Kerr-Phillips & Thomas, 2009). There is a challenge for

employers to retain existing skills so that these employees can contribute to organisational competence.

2.7 Factors

There are five general classes of employee turnover attributes (Ghapanchi and Aurum, 2011):

- Individual Factors: the home and out of work variables, for example partners career and immediate family issues.
- Job Related Factors: Individual work related variables, for example job training, talent, remuneration.
- Organisational factors: Leadership, the reward system, and job design.
- Environmental Factors: The outside work opportunities.
- Psychological Factors: All job Satisfaction and commitment.

These factors will be discussed in the following sections.

2.8 Individual Factors

Individual factors are divided into four sub-categories which represent personal attributes (Ghapanchi and Aurum, 2011).

Sub-categories	Factors
Demographics	1. Age
	2. Gender
	3. Marital status
Human Resources	4. Education
	5. Tenure at company
Motivation Attributes	6. Accomplishment needs
	7. Orientation towards career path
	8. Organisational conduct
	9. Influence orientation
Professional Behaviour	10. Job Performance
	11. Relationship with others
	12. Personality
	13. Investment in current organisation

Table 2.1 Individual Attributes. Adapted from Ghapanchi and Aurum, (2011).

Table 2.1 details each factor from the studies done by Ghapanchi and Aurum, (2011), and presents, 13 individual related factors that influence IT professionals intentions to seek alternate work arrangement (Ghapanchi & Aurum, 2011).

IT employees reflect on numerous factors when deciding to quit their current employment. At the individual level job characteristics is defined as employee perception about the content and nature of the task. These include factors such as skills, work exhaustion, autonomy, job feedback, age etc. (McKnight et al., 2009).

2.9 Job Related Factors

Job related factors influencing IT professional's intention to give up their current position are those pertaining to the job. Job related factors are workplace equality, sharing of information, communication, trust, and job security (McKnight et al., 2009).

Sub-categories	Factors
Job Characteristics	1. Boundary Spanning Activities 2. Task Variety 3. Task Identity 4. Autonomy 5. Job Feedback 6. Job Type 7. Work-Schedule Flexibility 8. Task Significance
Job Social Support	9. Colleagues Support 10. Supervisor Support
Job Difficulties	11. Work Stress 12. Perceived Workload 13. Role Conflict 14. Role Ambiguity 15. Emotional Dissonance 16. A Bad Boss
Job Attractiveness	17. Job Attraction 18. Utility of Present Job 19. Job Motivating Score

Table 2.2 Job Related Attributes. Adapted from Ghapanchi and Aurum, (2011).

Table 2.2 presents, 19 Job-Related factors from the studies done by Ghapanchi and Aurum, (2011). Ghapanchi, A.H., Ghapanchi, A. R., Talaei-Khoei, & Abedin (2013) points out that job characteristics such as task significance, task identify, task variety, feedback, and autonomy refers to Job Characteristics. In job characteristics theory, outlined by Hackman and Oldham (1975), the following are five job factors or dimensions (Gagne, Senecal & Koestner, 1997):

- skill variety, is defined as the use of many variety of skills, different talents at work and a variety of different activities;

- task identity, is defined as the opportunity to identify a whole piece of work and doing the job from start to end with tangible outcomes;

- task significance, is defined as the degree to which a job has impact on others;

- autonomy, is defined as the degree to which the job provides opportunity for independence, freedom and discretion;

- job feedback, is defined as the clear and direct information about one's performance obtained from job activities (Gagne et al., 1997);

A Job characteristic such as work-schedule flexibility, job feedback and autonomy encourages employees to show positive behaviour towards the organisation there by reducing the rate of employee turnover (Ghapanchi et al., 2013).

2.10   Organisational Factors

At an organisational level, according to Ghapanchi and Aurum, (2011) IT personnel work under professional and rigorous circumstances. The work environment affects employees' perception of the employer. These factors comprise perception of salary, remuneration, fairness or equality of rewards, pay satisfaction, promotion, job security, co-worker satisfaction, and organisation based rewards, developmental prospects, resource adequacy and manager satisfaction. These organisational factors pertain to how the worker feels about the employer. Firms may create workplace

environments that fall short in addressing fundamental employee requirements, thus lending itself to employee turnover (McKnight et al., 2009).

Sub-categories	Factors
Remuneration and Benefit	1. Reward 2. Promotion 3. Salary 4. Career Advancement 5. Position 6. Fairness of the Reward 7. Fringe Benefits
Organisational Culture	8. Socialisation Tactics 9. General Discrimination 10. Ethnic Discrimination 11. Negative Organisational Culture 12. Lack of Team Work 13. Politics and Infighting
Human Resource Practices	14. Distributive Justice 15. Training Opportunities 16. Internal Labour Market Strategy

Table2.3. Organisational Attributes. Adapted from Ghapanchi and Aurum, (2011).

Table 2.3 provides job-related factors from the studies done by Ghapanchi and Aurum, (2011). Ghapanchi et al. (2013) found that discrepancy theory advocates the need to consider individual differences. Discrepancy theory is the result of the difference between the expected outcome and some other actual outcome a person received (Castillo & Cano, 2004). In view of this theory job satisfaction depends on the match between job outcomes presented by the employer and those outcomes such as salary and reward desired by the employee. The closer the match between the organisation's outcomes and the employee's work expectations, there is a high degree of job satisfaction. The larger the discrepancy the greater the job

dissatisfaction, thereby increasing the rate of employee turnover (Ghapanchi et al., 2013).

2.11   Environmental Factors

Environmental factors are factors outside to the place of work that influence employees to quit their job. External to the workplace characteristics, environmental factors, include work-family disagreement, unemployment level, outside job opportunities may also affect turnover (McKnight et al., 2009).

Sub-categories	Factors
Family and Friends	1. Family and Friends Support
	2. Managing Family Responsibilities
	3. Work-Family Conflict
Perceived Job Alternativeness	4. Job Alternatives
	5. Utility of Alternative Job
Technology Advancement	6. Threat of Professional Obsolescence

Table 2.4. Environmental Attributes. Adapted from Ghapanchi and Aurum, (2011).

Table 2.4 presents, 6 environmental factors. According to Westlund and Hannon (2008) employees are tempted or motivated to seek new positions when these alternate jobs are available in the external environment. Employees view these alternate jobs to be better and offer higher pay or salary than the current position.

2.12   Psychological Factors

The psychological factors are, for example, career satisfaction and organisational satisfaction, commitment, exhaustion and uncertainty (Ghapanchi and Aurum, 2011).

Sub-categories	Factors
Overall Job Satisfaction	1. Pay Satisfaction 2. Career Satisfaction 3. Job Satisfaction 4. Supervisory Satisfaction 5. Intrinsic Motivation 6. Organisational Satisfaction
Organisational Commitment	7. Continuance Commitment 8. Affective Commitment 9. Organisational Commitment 10. Professional Commitment
Tedium	11. Emotional Exhaustion 12. Fatigue
Perceived Job Concern	13. Future Job Uncertainty 14. Career Concern 15. Image Violation 16. Employment Shock

Table 2.5. Psychological Attributes. Adapted from Ghapanchi and Aurum, (2011).

Table 2.5 illustrates each factor from the studies done by Ghapanchi and Aurum (2011). Rutner, Hardgrave and McKnight (2008) argue that job satisfaction is important because work exhaustion due to work overload influences job dissatisfaction. Calisir, Gumussoy and Iskin (2009) argue that dissatisfaction in the job will cause employees to look for alternate jobs, therefore job satisfaction is one of the important factors that contribute to IT employee turnover. Fairness of reward, promotion, pay satisfaction, job security and career challenges influences job satisfaction.

Maslow proposed that motivation is a function of five basic needs physiological, safety, love or social, esteem, and self-actualization (Kreitner & Kinicki, 2008). Ghapanchi et al. (2013) found that if these needs are significantly not met in the current job and that need could be satisfied by changing the job, then the worker is likely to leave the current company and switch to a better company. Therefore, it is very important for companies to align career incentives with employee's needs to lower their turnover rate (Ghapanchi et al., 2013).

2.13   Push and Pull Factors

There are pull and push factors, the push factors often drive the worker to quit his current position (Shah, Fakhr, Ahmad and Zaman, 2010). In addition, referred to as controlled factors, push factors are internal and they are controllable by the organisations. Ali Shah et al. (2010) argue that it is odd for employees to leave a position where they are happy and if presented with a better salary by another employer. All employees prefer stability. Sometimes, nevertheless, workers are forced because of unhappiness in their present organisation and they look out for an alternate job offer (Ali Shah et al., 2010).

Also according to Ali Shah et al. (2010) pull factors are those factors that draw employees to alternate employment. Pull factors are not controllable, they are external and beyond the control of an organisation. The many factors that pull employers to the organisations are better pay, improvement in career, new work challenges, interesting work assignments, employment security, innovation, reputable organisation, freedom, values, more benefits and a good boss (Ali Shah et al., 2010).

2.14   The World is Flat (Friedman, 2007)

Friedman (2007) states that the 'world is flat'. Information technology, fibre optics and wireless connectivity brought about global business and instant communication Friedman (2007) states that every worker faces a stiffer competition and more opportunities so that the individual will be self-reliant therefore globalisation and the changing world of innovation do not guarantee a lifetime employment but lifetime employability. The individual is becoming in charge of his own career. Individual risk and job security is managed individually therefore the worker seems mobile and is

able to jump into new job opportunities (Friedman, 2007) and hence the high rate of turnover. Most organisations are faced with a problem on how to employ and retain skills in the IT industry (Friedman, 2007).

2.15 Outsourcing

There are new trends that are emerging which organisations need to adopt to change the way they do business in the future for example outsourcing is creating a market for consulting and self-employment (Hegar & Hodgetts, 2005). There is a rise in the outsourced economy and this is creating a new challenge to managers. Outsourcing is altering the human resource management styles and creating new opportunities for employees.

Employers are engaging different human resource services and bundling them into outsourcing contracts. With the advancement of IT the corporate workplace will evolve into a different mixed work arrangement for freelancers and employees, so much so that they will have to work side by side and will be indistinguishable. Therefore this may lead to retention or career development decisions with an increased freedom to move in and out of corporate positions (Hegar & Hodgetts, 2005) therefore companies are finding it easier to pay someone else to do the task.

2.16 The Turnover Model

It is important that turnover models should consist of various factors. It is difficult to formulate a complete and definite turnover model. Stanz and Greyling, (2010) found that turnover models did not include external factors such as job opportunities, entrepreneurship, and globalisation but only focused on internal factors. This research adopts Moore's (2000) turnover model and introduces entrepreneurship. In the modified turnover model the following factors will be presented:

- Fairness of Reward
- Work Exhaustion
- Perceived workload
- Autonomy
- Role Conflict

- Entrepreneurship
- Role Ambiguity

2.16.1   Moore's (2000) Turnover Model

What can an executive do to hang on to the brilliant IT workers? Job assignments or tasks and role conflict, (Moore, 2000), are factors that are a risk relating to burnout among IT workers. Moore (2000) studied the apparent cause of work exhaustion and employee turnover. In his studies Moore (2000) discovered worn out employees showing a greater turnover intent therefore poor job fulfilment and lesser organisational obligation, consequently suggesting a relationship between burnout and turnover (Moore, 2000). This creates awareness for a better IT workplace, assignments, procedures and policies (Maudgalya, Wallace, Daraiseh & Salem, 2006).

2.16.2   Modified Turnover Model
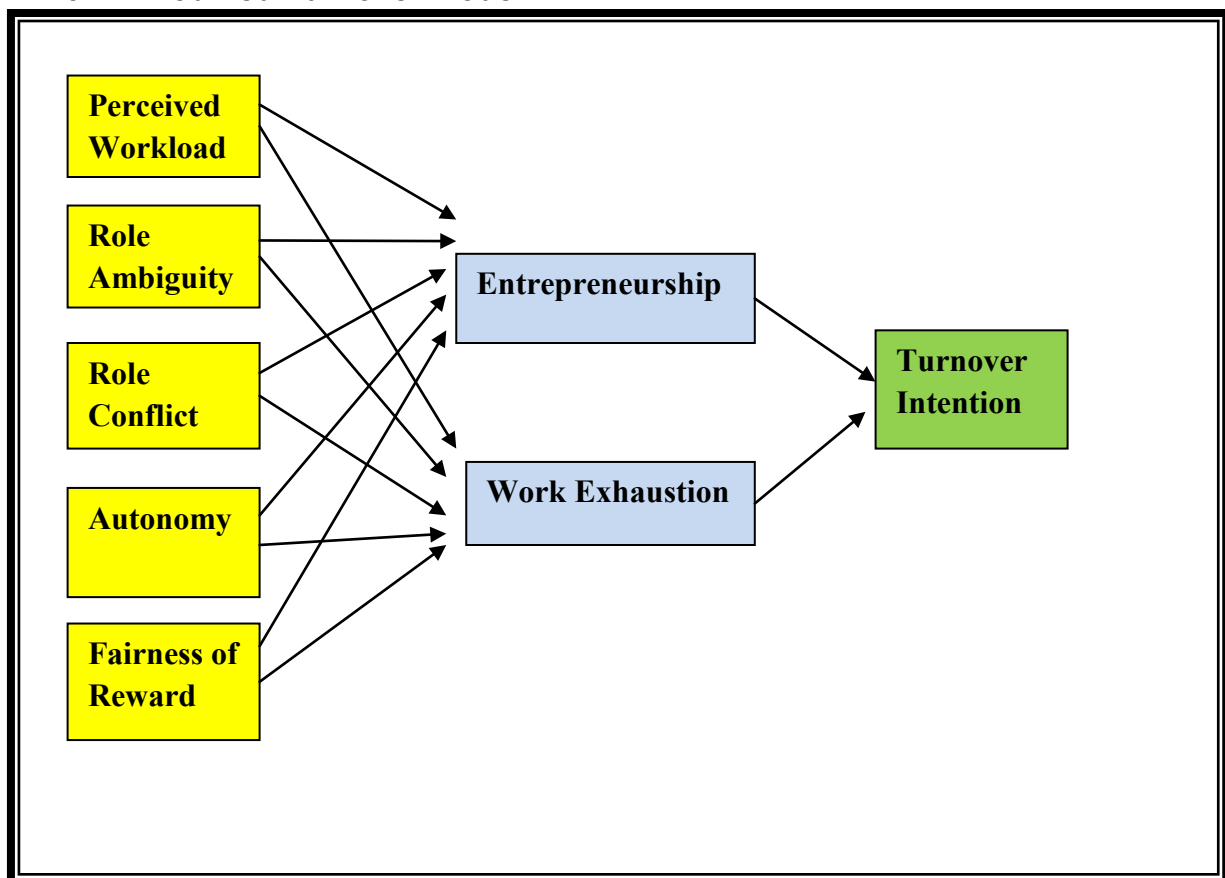
Figure 2.1 Modified Turnover Model. Adapted from Moore, (2000).

2.16.3 Autonomy

Autonomy refers to the extent to which a job provides freedom, independence, discretion and judgment therefore it is the extent to which the employer and the position gives the worker independence and freedom on how to carry out his work (Hegar and Hodgetts, 2005) . Workers do not have to rely on others to execute their tasks, plan their work and they do not have to rely on others for confirmation (Hegar & Hodgetts, 2005). Workers are expected to experience more job satisfaction and responsibility for their work output when high levels of autonomy are experienced (Cummings & Worley, 2005). Cummings and Worley (2005) states that autonomy is the extent to which the individual can determine events in their lives by their own activities, action and endeavours rather than relying on others for instructions. Internal locus of control may possibly become a significant reason to realise autonomy among IT professionals. IT professionals, who are in charge of their work, are expected to feel comfortable in their work environment, have less stress and are highly satisfied with their work (Calisir et al., 2009).

Employees claim to take pleasure in the flexibility of planning their own schedule, choosing their own job assignments and the choice of rejecting certain jobs that are predominantly distasteful (Barley et al. 2002). Some have a preference to accept their reimbursement as quick cash as opposed to a monthly salary. However others have a sound degree of satisfaction knowing that they are truly required by companies they work for (Barley et al. 2002).

Autonomy provides employees with a reassurance of faith, belief and trust to make up to date decisions on behalf of the employer and restore confidence in the employer that if they were concerned about their work and produce results, the rewards will be for their hard work (Mda, 2010). The longing of IT professionals to be in charge and control of their own fortune is an important consideration when scrutinising reasons for high turnover (Mda, 2010).

2.16.4 Money, Wealth and Fairness of Reward

Grobler et al. (2006) argue that rewarding or compensating employees is a combination of the art of management and to an extent a science of measuring the fairness of the reward. Wage and salary refers to monetary rewards given to employees. The objective of a reward system includes the attraction, motivation, and retention of the employee at all organisational level (Grobler et al., 2006).

Ang, Slaughter and Ng (1998) explored that compensation is the core issue in developing, attracting and retaining IT professionals. Organisations repeatedly struggle to offer successful reimbursement strategy for their IT workers, given the exceptional characteristics of the IT industry and labour market. Job satisfaction influences the individual's unique circumstance such as, values, expectations and needs (Buitendach & De Witte, 2005). Individual persons will thus appraise their jobs based on factors which they consider important. Workers who are pleased with their jobs are likely to remain in their organisations (Buitendach & De Witte, 2005).

2.16.5 Specialised Skills

Retaining IT professionals is important to businesses as these individuals have knowledge of critical information to integrate Information systems with production procedures and accordingly McKnight et al. (2009) believe that IT professionals are often individuals who have these skills are difficult to substitute, therefore this difficult to replace knowledge and skills contribute to the high rate of IT employee turnover thereby contributing to high businesses cost. The requirement for skilled technical workers is high; therefore, highly skilled IT employees can find alternate jobs, and thereby creating turnover (McKnight et al., 2009).

2.16.6 Work Exhaustion / Burnout

Grobler et al. (2006) argue that job Stress or burnout is interchangeable. Job burnout is more than job stress. Burnout or exhaustion, in essence, is when one is performing more than the rewards received (Grobler et al., 2006). According to Van Der Vyver (2009) the present day IT professional, requires, to a great extent, the ability and

assortment of skills to deal with the increasing stress and anxiety of the industry in order to survive.

Work attitude can influence both quality and quantity of employee output (Hegar & Hodgetts, 2005). Globally people engage in hard work. In many countries in the Asian continent regular turnout at work is viewed as an important responsibility. However according to Hegar and Hodgetts (2005) there must be a limit to what people do or they will collapse from stress or over work and many managers report on these encounters on a daily basis. Long working hours, and lack of job security are major reasons for job stress. Stress is an emotional strain or physical discomfort or both and if unchecked this can impair one's ability to perform or cope with the job (Hegar & Hodgetts, 2005).

Moore (2000) states that there are various workers that experience work exhaustion, in the technology industry, IT professionals are most vulnerable. Some workers are comfortable under stressful or under high anxiety conditions but other employees shun stress and seek a calm environment (Hegar & Hodgetts, 2005).

The following are some causes of work exhaustion or burnout (Hegar and Hodgetts, 2005):

- Heavy work load, long work hours, shift work.
- Lack of employee employer friendly policies.
- Very little support from supervisors and co-workers.
- Excessive responsibility or uncertain or conflicting job expectation.
- Employment insecurity and very little career growth opportunity, promotion or advancement.
- High rate of change in technology when workers are not ready.
- Roles and responsibilities not clearly defined.

2.16.7   Perceived Workload

Work over load is a stressor, because of tight schedules and heavy workload (More, 2000). System users have also an increasing demand for first line support of their

production systems to increase productivity and customer demands therefore IT employees are on standby on a daily basis and also on weekends and holidays (Moore, 2000).

2.16.8   Role Conflict and Ambiguity

Role is a set of systematically interrelated and observable behaviours that belong to an identifiable job or position. Role is an expected behaviour (Hegar & Hodgetts, 2005). Role behaviour may be either required or discretionary. Role ambiguity is when one is uncertain of what is the outcome when performing the job (Calisir et al., 2009). Role ambiguity is a role related condition, when job duties are unclear and a person is unsure of what to do (Hegar & Hodgetts, 2005).

Role ambiguity is an outcome of insufficient information pertaining to the expectation of and comprehension of the job. The individual does not understand clearly what the job entails thus resulting in role conflict between management and workers with regards to performance (Cummings & Worley, 2005).

Role is a behaviour that is anticipated. In most organisations job description determines ones role (Hegar & Hodgetts, 2005). The individual can understand this job description and formulate a general idea of what is clearly expected. Therefore the problem is when job descriptions or duties are unclear because the job requirements were vague or there was no job or role description formalised. This is role ambiguity, because there is uncertainty in what is supposed to be done. What the individual was supposed to do is uncertain or vague and the specific role is misunderstood. To prevent role ambiguity there must be job descriptions that are clear, that describe in detail the responsibilities of the task and position (Hegar & Hodgetts, 2005).

Another major role related problem is role conflict. Role conflict is when an individual plays dual roles (Hegar & Hodgetts, 2005). For example a manager is told to build morale in the department but is also told to reprimand anyone for boredom. In this case the manager may face role conflict. To avert role conflict clear job descriptions

and supportive supervision must be administered, so that everyone knows what he or she is supposed to do and receives the help and guidance that is required and this may reduce role ambiguity.

2.16.9 Entrepreneurship and Self-employment

Self-employment is a substitute to working for an employer, which may be reasonable, and desirable, to satisfy the individual's needs such as autonomy (Urwin, 2011). Urwin (2011) also believes that the new innovations and the modern business trend encourage entrepreneurship. According to Cummings and Worley (2005) an entrepreneur who may be an innovator, discovers opportunities and takes financial and personal risks to be successful in order to balance their rewards in relation to risks and their own personal achievements and investments.

The characteristics of an Entrepreneur are (Hegar & Hodgetts, 2005):

- Desires freedom, motivated, reliant and is goal orientated.
- Take decisive action for growth in business.
- Has business acumen and knows business intimately.
- Trained technically and has the ability to determine profit and loss in the company.
- Self confident, optimistic and courageous.
- Primarily in technology and marketplace.
- Takes risks and expect to succeed.
- Follows private decision and is decisive and action orientated.
- Places self and customer in terms of importance.

IT jobs are complex; requiring knowledge of difficult technical concepts and knowledge is often acquired through advanced educational degrees (Ang, Slaughter & Ng, 2002). The IT labour market is not a single homogeneous market. The key IT labour market is profit orientated and competitive. In the IT profession education and work experience are important attributes of human capital. Labour demands exceeds supply and under severe labour shortages the IT professional possess greater

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bargaining power because they enjoy plentiful jobs and alternate employment arrangements (Ang et al., 2002). There are many factors pushing individuals towards self-employment such as autonomy and entrepreneurship kills and ability (Mourmant, Gallivan & Kalika, 2009).

The rapid space of innovation and change in the IT industry is appealing to the entrepreneur. The key IT labour market is profit orientated and competitive (Ang et al., 2002). Mourmant et al. (2009) reports that positive economic outlook, recognition, and alertness to business opportunities are factors influencing IT entrepreneurship. IT entrepreneurs who have skills such as innovation, marketing, management, risk taking and financial control are taking some action to capitalise in creating new business. The technology trend, external environment, globalisation, business, economic opportunities and profit making creates good opportunities for venture creation and shapes entrepreneurial behaviour in IT professionals (Mourmant et al., 2009).

2.17 Summary

The factors that are related to the internal work environment and organisational factors contribute to employee turnover intention (Moore, 2000). An external factor, entrepreneurship (self-employment) was introduced to Moore's model. In this chapter the discussion was on the many internal and external factors that influences employee turnover. The modified Moore's (2000) model was presented which will be the basis for this research. In the next chapter the research methodology will be presented.

CHAPTER THREE

Research Methodology

3.1 Introduction

The research questions and the objectives will be presented in this chapter. The quantitative research design was chosen. Therefore the research strategy and the data analysis techniques are appropriately discussed to support the quantitative research design.

3.2 The Research Statement

Saunders, Lewis and Thornhill (2009) states that research is done to:

- Gain more information to supplement management and business knowledge.

- Gain better understanding of a phenomenon in business.

- To Find a solution to a problem

- To discover new information about the phenomenon.

- To discover information relevant to the problem.

South Africa has a skills shortage in the Information and Communications Technology (ICT) sector (Alexander, Lotriet & Matthee, 2010). Together with the Information Technology skills shortage the IT industry is faced with high employee turnover. IT employees have a strong desire to quit their current work arrangement to seek an alternate one. Employee turnover in the IT industry is a concern for many employers for strategic reasons, the IT professionals are an important resource. Several firms find it difficult to employ and retain them (Westlund & Hannon, 2008). In the IT industry the turnover rate is high; losing highly skilled employees is very costly and also disruptive. The cost is mostly related to re-skilling, recruiting and disruptions in current projects (Korunka et al., 2008).

The work force is changing; this is due to the ongoing innovation in modern technologies. IT professionals have high growth needs, have extensive specialised

skills, and learning opportunities (Lee, 2000) as a result there are a variety of employment choices for IT professionals. According to Blanton, Newton and Wingreen (2007) the employment choices are numerous such as part-time contractors, full-time contractors, independent contractors, permanently employed, self-employed or entrepreneur. Why do IT employees leave their current employment? What drives IT personnel to quit their work place? These are critical questions that must be asked as the high IT turnover rate creates a challenge to employers, hence the following research question: What factors motivate information technology professionals to become self-employed?

3.3   Location of Study

Buitendach and De Witte (2005) found that many countries are experiencing a skills shortage due to demand for IT skills outstripping its supply. South Africa faces the extra challenge of skilling previously underprivileged and disadvantaged persons and employing them in the IT job mainstream. South Africa has a small base of highly skilled, hi-tech and IT professionals even though a more demographically representative workforce does seem to be emerging (Buitendach & De Witte, 2005).

This research that is undertaken in Durban, South Africa will add to the body of knowledge of voluntary IT employee turnover and entrepreneurship. Durban provides a rich source of data for understanding IT and urban change at a metropolitan scale. According to the eThekwini Municipality Integrated Development Plan (2011/2012) the city is geared to creating a platform for growth, empowerment and skills development as a five year plan. The city has undergone a number of significant changes over the past two decades. Durban is also Africa's premier port city; it traditionally has had a strong manufacturing base, linked to its port operations.

According to the eThekwini Quality of life household survey (EM, 2011a), in the eThekwini municipal area, where Durban is the central region, 29% of household members are in some form of employment. Seventeen percent of the people are permanently employed, with more that 12% being self-employed or engaged in casual or contract work. More than a quarter of the people are unemployed.

According to the same survey 22% are looking for work and 6% are not. This research will be done in the city of Durban, South Africa. The Durban IT sector will provide a platform to test the modified Moore's (2000) IT turnover model.

3.4 Aim and Objective of Study

Research is done to (Saunders et al., 2009):

- Gain more information to supplement management and business knowledge.

- Gain better understanding of a phenomenon in business.

- To Find a solution to a problem

- To discover new information about the phenomenon.

- To discover information relevant to the problem.

3.4.1 Statement of the Problem

From the literature review the following factors were identified (Moore, 2000):

- Fairness of Reward

- Work Exhaustion

- Perceived workload

- Autonomy

- Role Conflict

- Entrepreneurship

- Role Ambiguity

What factors motivate information technology professionals to become self-employed? Hence the title of the research is: factors motivating information technology professionals to become self-employed.

3.4.2 Research Questions

Research questions are questions that endeavour to find answers through the research (Kumar, 2011). The following are the research questions (RQ) for this study to determine what factors motivate IT professionals to become self-employed:

RQ1: Which of the following factors (role ambiguity, perceived workload, autonomy, role conflict, fairness of reward (Moore, 2000), contribute to entrepreneurship in information technology professionals?

RQ2: Which of the following factors (role ambiguity, perceived workload, autonomy, role conflict, fairness of reward (Moore, 2000), contribute to work exhaustion in information technology professionals?

RQ3: Do technology professionals having entrepreneurship ability report higher intentions for turnover?

RQ4: Do information technology professionals experiencing higher levels of work exhaustion report higher intention for turnover? (Moore, 2000)

There are many factors listed in the literature review that influence IT turnover or entrepreneurship. The research study must relate to existing knowledge about the subject and must be verified (Kumar, 2011).

Modified Turnover Model
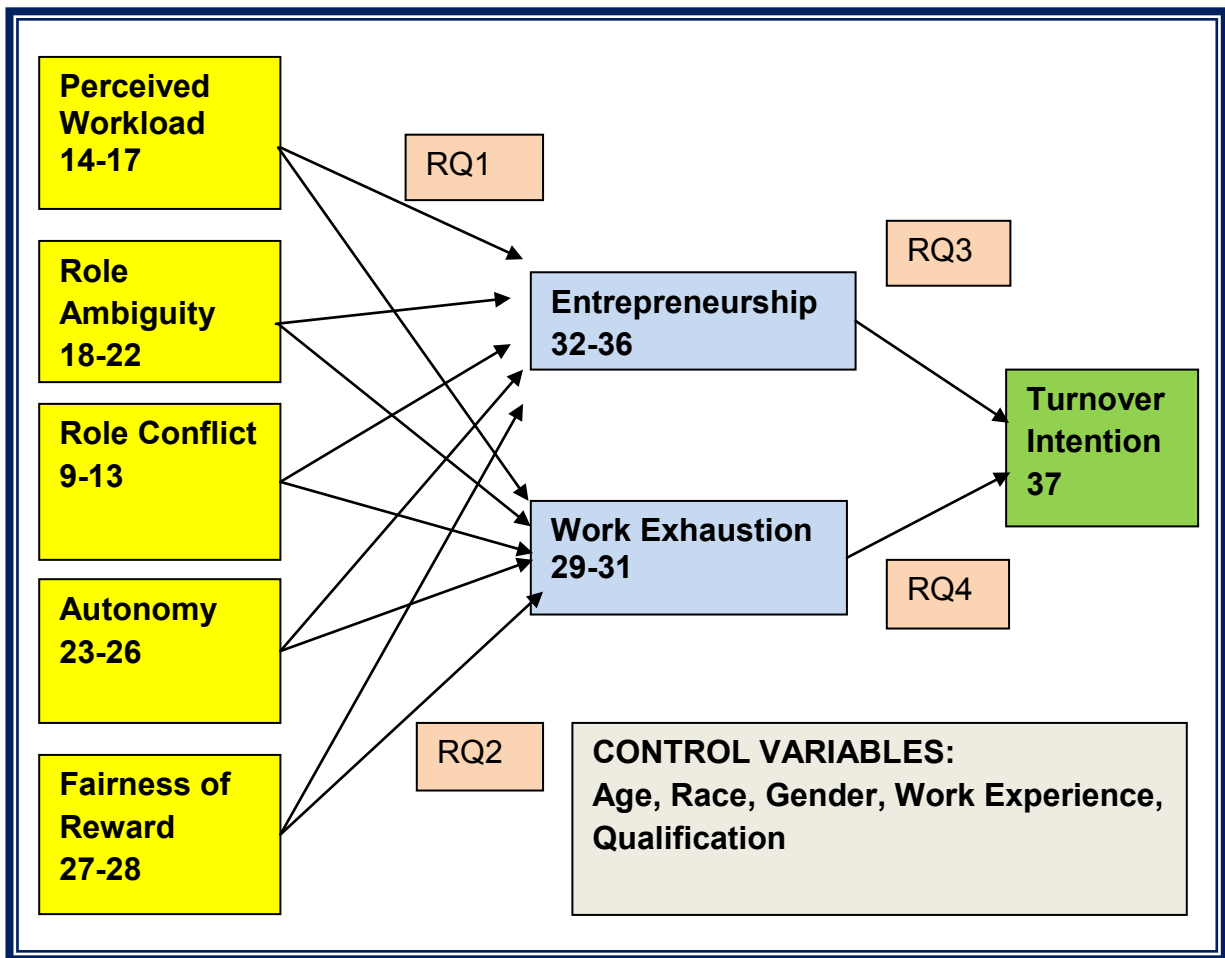
Figure 3.1 Modified Turnover Model with Research Questions. Adapted from Moore, (2000).

Hence the research questions derived from Moore's (2000) model and existing research study, were verified in this research and are presented in Figure 3.1;

3.5 Quantitative Research Design Approach

An intended research is a procedural road map that is undertaken to answer questions of validly, objectively and accurately (Kumar, 2011); this road map is referred to as a research design. There are three broad approaches to research design, quantitative and qualitative or structured and unstructured and mixed research. When research is done where both quantitative and qualitative methods are used, this is referred to as mixed research. Qualitative design involves analysis of

data that describes the phenomenon and not of a quantitative nature (Sekaran & Bougie, 2010). Quantitative design is specific, well structured, have been tested for their validity and reliability, and can be explicitly defined and recognised. Qualitative research does not have these attributes or have them to a lesser degree, they are less specific and precise and do not have the same structural depth as quantitative research (Kumar, 2011).

3.6   Characteristic of Quantitative Research

Quantitative research design is sequential and quantitative (Sekaran & Bougie, 2010). In quantitative research the measurement and classification requirement of the information that is gathered demand the study design is more rigid and strict, is controlled and structured, to make certain correctness in measurement and categorisation is maintained. Data analysis is used to predict statistical relationship and to generalise to the entire population. The data analysis involves correlations, comparison of means and reporting on significance using statistical analysis, the result is precise, definite and standardised (Kumar, 2011).

Quantitative research is scientific, the theory and the research questions are tested with data, and it is a scientific method, deductive or top-down approach. In Quantitative research distinction and clarity is maintained among data collection, methods and design (Kumar, 2011). In quantitative research enough detail about a study design is provided so that the study can be replicated and retested for verification and reassurance. Quantitative design is more appropriate to measure the magnitude of the variation (Sekaran & Bougie, 2010). Attempts to study outcomes under controlled conditions, and the result is regular and predictable. Numerical data is collected, the data is standardised and then the analysis is done using diagrams and statistics. Collection of data is based on accurate measurement using structured techniques and data that is validated, closed ended questions, rating scales such as the Likert scale and behavioural responses are used (Saunders et al., 2009).

Quantitative Method	Qualitative Method
1. **Significance is derived from numerical data.** 2. **Collection results in numerical and standardised data.** 3. **Statistics and diagrams are used to analyse the data.**	1. Significance is derived from expression of words. 2. Data collection is not standardised and categorisation is necessary. 3. Analysis is done through conceptualisation

Table 3.1 Distinction between Qualitative and Quantitative Methods. (Saunders et al., 2009).

Table 3.1 gives the main distinction between qualitative and quantitative methods.

For this research the quantitative method was chosen. The quantitative method is used where the analysis is based on recorded facts derived from the questionnaire. Analysis of data in a quantitative method can be done quickly using statistics and technology such as the SPSS software tool. According to Kumar (2011) reliability and validation is easily administered by the quantitative method. In this design statistical analysis is conducted to determine the relationships between the constructs. In order to facilitate the quantitative design a structured questionnaire was designed, which will be discussed in section 3.10.1. The questionnaire is best suitable to quantitative design as the data is of a numerical nature and is concise (Sekaran & Bougie, 2010).

3.7 Sampling Techniques

A subset of the population is referred to as a sample (Sekaran & Bougie, 2010). The process of selecting a sample (few) from sampling population (the bigger group) is referred to as sampling (Kumar, 2011). When it is not practical to collect data from the total population sampling is performed (Sekaran & Bougie, 2010). For this research non-probability or judgement sampling technique was used where a list of email addresses of IT professionals was available. The various types of sampling strategy in quantitative research can be categorised as follows:

- Probability or representative or random sampling; the possibility or likelihood of each sample drawn from the population is known and is the same for all other samples (Kumar, 2011).

- Non-probability or judgement sampling or non-random; the likelihood of each case being chosen from the total population is not known or cannot be individually identified. (Saunders et al., 2009).

- Mixed sampling design is both non-probability and probability (non-random and random) sampling design (Kumar, 2011).

3.8   The Sampling Design

In this research judgemental or purposive sampling is used, it is the ability of the respondents to contribute to the study. The primary consideration is the researcher's judgement, which is in a position and has the knowledge to provide the information for research therefore the respondents are the IT professionals (Kumar, 2011). This sampling method when used in quantitative design a predetermined number of respondents are selected, whom in the researcher's judgement are best positioned to provide the needed information for the study (Kumar, 2011).

3.9   The Research Population

The target population is the IT professionals in the Durban area. A sample will be drawn from this set.

3.9.1 The Sampling Frame

The sample frame will be a complete list of e-mail addresses of IT professionals in the Durban area. When no suitable list is available a sampling frame will have to be compiled from an existing list, the sampling has to be valid and reliable (Saunders et al., 2009). A primary email list was compiled from colleagues and friends of IT professionals that formed the initial sample frame and to expand this list, the email addresses of respondents were obtained from individuals and companies via the email network. To further expand the sample frame the questionnaire also prompted respondents to send survey to their friends and colleagues in the IT profession, thus 390 survey invitations were sent out via email.

3.9.2 Decide on a Suitable Sample Size

The purpose of undertaking research depends on the level of accuracy required in the results and this level of accuracy is the important determinant of sample size. In

determining the size of the sample in quantitative studies the following must be considered (Kumar, 2011):

- What is the level of confidence used in order to test the hypotheses?

- What is the degree of precision used to determine the population?

- What is the approximate level of variance (standard deviation) with respect to the constructs in the study population?

Answering these questions is important when determining the sample size. The sample size is significant when testing a hypotheses or establishing a relationship between two variables. The general rule is that, if sample size is large enough the estimate is more accurate. Budget and time constraints also influence the sample size; therefore the sample size may be determined just to meet the budget and timelines.

Sekaran and Bougie (2010) state that the samples size between 30 and 500 are suitable for most research. With a 95% confidence level and a total population of one million, the sample size of 384 IT professionals is desired. This sample size of 384 and various other sample sizes with varying population sizes can be obtained from the sample size Table in Appendix 1. Moore's (2000) sample size was 256 and based on sample size Table in appendix 1 a sample size of 384 was chosen so that by quantitative research design generalization could be made on a population of one million

3.10 Research Instrument

The questionnaire survey was used as a research instrument. A survey questionnaire is a listing of questions. The respondents will provide the answers. The questionnaires provide a selection of answers to choose from. The questions must be clear and simple to understand (Kumar 2011). The questionnaire is less expensive, the respondent is not interviewed, and time, human and financial resources are saved. The questionnaire is administered electronically. The questionnaire was

designed as per the following constructs. The full list of the questionnaires is in appendix 2.

Role Conflict:

Role conflict is a factor that influences job satisfaction that influences turnover intention. Lack of precise and clear information of what is expected in the role influences turnover behaviour. Role conflict occurs when an individual receives conflicting job performance information or is expected to do too much (Rizzo, House, & Lirtzman, 1970, Lee, 2000, Moore, 2000, Kim & Wright , 2007). Questions nine to 13 were taken from research done by Rizzo et al. (1970), Lee, (2000), Moore, (2000) and Kim & Wright (2007).

Perceived Workload

IT Professionals can be over burdened with many tasks. Due to many deadlines and the complexity of the IT environment the IT worker can be over loaded with work (Kirmeyer & Dougherty, 1988, Moore 2000, Kim & Wright, 2007, Lee 2009). Questions from 14 to 17 for perceived workload was adapted from research done by Kirmeyer & Dougherty (1988), Moore (2000), Kim & Wright (2007) and Lee (2009).

Role Ambiguity

Role ambiguity will promote dissatisfaction in the job. It will create confusion and influence turnover intention. IT personnel may be particularly sensitive to role conflict and role ambiguity that may result in job tension and turnover (Rizzo et al, 1970, Lee, 2000, Moore, 2000, Kim & Wright, 2007). Questions 18 to 22 for role ambiguity were adapted from research done by Rizzo et al. (1970), Lee (2000), Moore (2000) and Kim & Wright (2007).

Autonomy

The questions from 23 to 26 for autonomy was taken from research studies done by Moore (2000), McKnight et al. (2009), Shih, Jiang, Klein & Wang (2011).

Fairness of rewards

There is an exchange of benefits between employer and employee in the form of rewards. The reward will be either fair or unfair. This may have an influence on entrepreneurship or work exhaustion in the form of rewards being unfair. Fairness of pay or compensation is a central feature in the work lives of many individuals (Moore, 2000). Questions 23 and 24 were taken from Moore (2000).

Entrepreneurship

IT professionals are highly skilled and possess abilities to be creative. There is an entrepreneurial perspective of IT professionals who are working as independent contractors, one need to examine the entrepreneurial abilities of these IT professionals (Lee, Leung & Wong, 2006). Questions 29 to 31 were adapted from research studies done by Lee et al. (2006).

Work Exhaustion

Questions 32 to 36 for work exhaustions was taken from research studies done by Schaufeli, Leiter and Kalimo (1995), Moore (2000), Kim and Wright (2007), Lee (2009) and Shih et al. (2011).

Turnover intention

An individual's intention to quit an organisation is important as companies are faced with a dilemma to retain skilled IT professionals thus saving turnover costs. To measure the intention to quit or stay is a good predictor of turnover intention (Porter, Crampon, & Smith, 1976, Lee 2003, Moore, 2000, Kim & Wright, 2007). The question 37 to 41 for turnover intention was adapted from studies done by Porter et al. (1976), Lee (2003), Moore (2000), and Kim & Wright (2007). In the pretest these questions was reduced to question 37.

3.10.1 Questionnaire Design

A questionnaire offers grater anonymity; there is no personal interaction between the researcher and the respondent. By using a questionnaire designed survey a greater geographic region can be reached. Electronic questionnaire is easy to administer,

very inexpensive and respondents can answer at their own convenience (Sekaran & Bougie, 2010).

One main disadvantage of a questionnaire is that the application is restricted to the sample population that can read and write. The illiterate, the handicapped, the very old and the very young will not be able to participate in this survey. The opportunity to clarify issues is lacking, there is no opportunity to clarify any misunderstanding, and different respondents will interpret questions differently (Kumar, 2011)

The rating scale, known as the Likert scale, is such that each scale in the statement has equal value (Sekaran & Bougie, 2010). The measure is classified into three categories in order to determine positive, negative and neutral positions.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Table 3.2 Five point Likert scale (Sekaran & Bougie, 2010).

The Likert scale is used in the questionnaire to determine the extent to which respondents disagree or agree with statements based on the scale in Table 3.1. The demographic or control variables are the following: gender, marital status, race, age, highest academic qualification, years of experience in IT, current employment status and previous employment status. The survey questionnaire before pretesting and excluding the demographic variables are presented in appendix 1. In this research the Likert scale represents five intervals that measure the strength of the attitude or agreement towards a precisely formulated statement. The Likert scale is simple, the degree of agreement is based on a 1 (strongly disagree) to 5 (strongly agree) scale that measures attitude. The middle point is set aside to indicate a neutral position. The responses are then recorded as numeric data and are easily used in data analysis for a quantitative research design (Sekaran & Bougie, 2010).

3.10.2 Pretesting and Validation

Pretest in quantitative research is the test of understandability and appropriateness of the questions on a small group of respondents to ascertain the likelihood of any problems before the survey is published for actual data collection (Kumar, 2011). In a pretest the questions are examined for clarity, understanding, wording and meaning as understood by potential respondents in the view to remove possible problems (Kumar 2011).

The pretest was done by the supervisor and also by a group of seven IT professionals and as a result of pretesting the questionnaire was fine-tuned and an error such as academic qualifications from metric to matric was corrected. Where the questions were ambiguous they were rephrased so that the question was precise and the respondents understood the meaning.

A comprehensive list of questions before pretesting is presented in Appendix 2. Pretesting was also used to measure the time taken by the respondents in completing the questionnaire within the acceptable time of between ten to fifteen minutes. All samples of the pretest were completed between five to eleven minutes. The actual changes identified during pretesting are presented in Appendix 3. The final survey questionnaire together with the questions on demographic variables is presented in appendix 4. There were no reverse order questions.

3.10.3 Questionnaire Administration

The survey was electronically administered. The advantages are (Sekaran & Bougie, 2010):

- Easy to administer
- Can reach globally
- The cost is low
- Quick delivery and response
- Respondents can answer at their own convenience
- Accuracy of data is enhanced

The survey for this research posted on QuestionPro realised the above advantages, the user friendliness of the questionnaires, accuracy, low cost and ease of use was maintained.

The disadvantages are (Sekaran & Bougie, 2010):

- Respondents must have access to online web facilities
- Respondents must be willing to complete survey
- Respondents must be computer literate

The online questionnaire survey was hosted on the QuestionPro website. All respondents had access to a web site and were computer literate as they worked in an IT environment. Not all the respondents completed the survey. A follow up mail was sent to thank those that completed the survey and encouraged the others to complete them. There were more that 390 emails sent and 250 only viewed the survey.

3.10.4   Data Capturing, Collection and Exporting

The QuestionPro software was used to capture and launch the survey. The parameters ware set to validate the data and prompt respondents to complete missed questions thus assuring data validation during capturing.

The QuestionPro web site is http://www.questionpro.com

The link to the survey is http://questionpro.com/t/AJAxDZN8fq

Email addresses of respondents were obtained from individuals and companies. The survey link with the invitation was sent via email to the respondents. The invitation explained what the survey was about and also prompted the respondents to forward the survey to other IT professionals who were not on the invitation list. The respondent clicked on the link and completed the survey. The capturing and collection of data was hosted by the QuestionPro online software. The QuestionPro tools were used to extract and import the data for data analysis. The primary data will be extracted from the QuestionPro web site for data analysis.

3.11 Analysing the Data

The Statistical Package (version 19.0) will be accessed as a computer tool to analyse the data. The SPSS (version 19.0) is a data management and analysis program to do statistical analysis such as descriptive statistics as well as inferential statistical analysis and to calculate Pearson's correlation coefficient (Sekaran & Bougie, 2010). Statistical inference is the process of finalising a conclusion or many conclusions regarding the population by examining the of data analysis describing the population sample (Saunders et al., 2009). This statistical test the Pearson's correlation coefficient, will determine the measurement of association that connects two numerical data constructs, where the measure is strong or weak. The scores for the survey questions were done with numerical values based on the Likert scale. In order to arrive at Pearson's' correlation coefficient the data must be tested for validity and reliability.

3.11.1 Validity and Reliability

Validity is a survey instrument to measure the results that which is intended to measure (Saunders et al., 2009). In Quantitative research according to Kumar (2011) three types of validity exists;

- Face and content validity:
  Kumar (2011) states that validity, the judgement that an instrument is measuring what it is supposed to measure is based on the logical understanding between the questions and the objectives of the study hence this is easy to apply. Each question in the survey has a logical link to the objective hence this is termed as face validity. The constructs or questions cover the entire range of concepts that is measured and this is called content validity. The questionnaire or statements represents the issue that is measured therefore the survey in this research satisfy face and content validity.

- Concurrent and predictive validity:
  Predictive validity according to Kumar (2011) is judged by how well the instrument compares with another research study. The results of this research will be compared with Moore's (2000) model to determine how well this research compares.

- Construct validity:

    The validity of the instrument in construct validity is complicated (Kumar, 2011). Here statistical procedures are required. The construct validity is based upon statistical procedures to determine construct validity by determining the correlation between the two variables.

Reliability of a measure is where both consistency and stability is determined (Sekaran & Bougie, 2010). Consistency determines how close all the items in the questionnaires that is representing a concept collectively form a set, therefore according to Sekaran and Bougie (2010) Cronbach's alpha test provides a coefficient that tests reliability which indicates how strongly all the group items in the set correlates to one another either positively or negatively.

	Factors / Constructs	Number Completed	Range of Questions	Number of Items	Cronbach Alpha
1	Role Conflict	123	9 - 13	5	.659
2	Perceived Workload	123	14 - 17	4	.764
3	Role Ambiguity	123	18 - 22	5	.858
4	Autonomy	123	23 - 26	4	.756
5	Fairness of Reward	123	27 – 28	2	.835
6	Work Exhaustion	123	29 - 33	5	.899
7	Entrepreneurship	123	34 - 36	3	.756
8	Turnover Intention	123	37	1	None

Table 3.3 Internal Consistency Reliability Statistics

The Cronbach's alpha reliability coefficient and the results are represented in Table 3.3. Field (2005) states that Cronbach's alpha is a measure determined by the average inter-correlations of the items in the construct or factor as a set to determine internal consistency.

Questions	New Cronbach Alpha if Question Deleted
9	.682
10	.567
11	.580
12	.579
13	.609

Table 3.4 Item-Total Statistics for Construct Role Conflict

A Cronbach's alpha of 1 will have the highest internal consistency (Sekaran & Bougie, 2010). The acceptable values are between 0.6 and 1, accordingly if the Cronbach's alpha was too low (lower that 0.60) the items total statistics Table 3.4 would be used to determine which question or item in the construct would have to be deleted in order to increase internal consistency however this was not necessary as from Table 3.3 shows a Cronbach Alpha of 0.659 for the construct role conflict. The internal consistency is satisfactory for all the constructs as recorded which is above 0.60 in Table 3.3.

3.11.2   Independent and Dependent Variables

In Quantitative research as the emphasis is on exploring commonalities in the study population, measurement and variables play an important role. In order to investigate a causal relationship or association four sets of variables occur.

1. Change variables are responsible for bringing about change in a phenomenon, situation or circumstances.

2. Outcome variable, which are the effects, impacts or consequences of a change variable.

3. Variables which effect or influence the link between cause-and-effect variables.

4. Connecting or linking variables, which in certain cases are necessary to complete the relationship between cause and effect variables.

In research terminology variables that can be evaluated to the extent how it affects other variables are called independent variables (Sekaran & Bougie, 2010). The variable to which the change is affected is called dependent variables. The independent variables are role ambiguity, perceived workload, autonomy, fairness of reward and role conflict. The dependent variables are entrepreneurship, work exhaustion and turnover intention.

3.12   Ethical Consideration

Being ethical according to Kumar (2011) means adhering to the code of conduct or expected social norm of behaviour. The study protocol and the survey instrument were presented to the ethical clearance committee at the University of KwaZulu-Natal for approval. This was approved. The research questionnaire ensured privacy of the respondents as the survey was hosted on a web site. Anonymity and confidentiality was maintained as respondents name or identity was not requested. Each survey cannot be linked to a respondent as the QuestionPro software generated a random number for each response. Respondents had the option to quit the survey at any time.

3.13   Summary

In this chapter the research questions were discussed in detail with the presentation of Moore's (2000) modified model. The quantitative research design was chosen and the motivation for the choice was given. The IT environment was the chosen audiences in the City of Durban. The survey questionnaire was emailed to respondents. The data was then validated using SPSS (version 19.0) tool and using the Cronbach alpha ratio. In the next chapter the data will be analysed and presented as per the requirements of the four research questions.

CHAPTER FOUR

Presentation of Data

4.1 Introduction

In this chapter the respondent's data will be presented as descriptive statistics using the SPSS (version 19.0) tool set. The statistical data will concentrate on the demographic variables, the construct variables and Pearson's correlation coefficient.

4.2 Demographic Variables

The survey requested responses for the following demographic variables: gender, marital status, race, age, academic qualifications, employment statuses and employment tenure. The QuestionPro software tool recorded 390 respondents to have clicked to the link, 250 only viewed the survey. The number that started the survey was 140, with 17 drop outs. The number that completed the survey was 123 with a completion response rate of 31.5 % and the average time taken to complete the survey was 10 minutes.

4.2.1 Gender
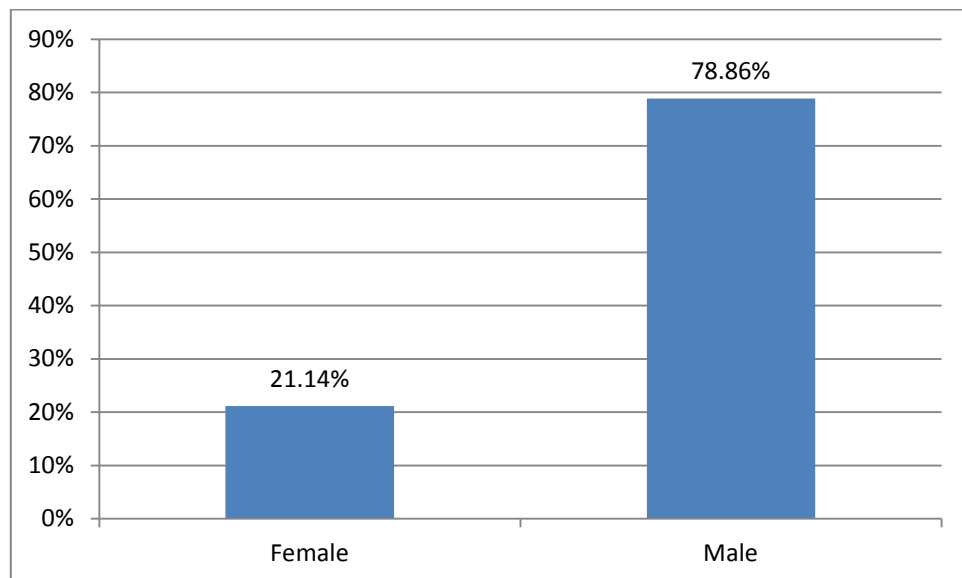
Figure 4.1 Gender

In Figure 4.1 majority of males responded to the survey (79.86%). In Moore's (2000) IT survey the majority of respondents were males, the percentage was 66.30%.

4.2.2 Marital Status
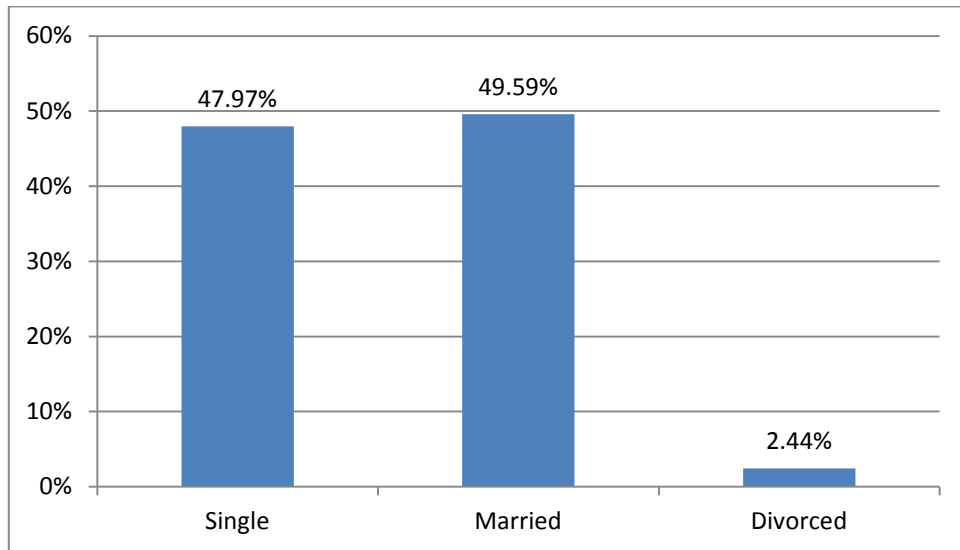
Figure 4.2 marital Status

It is evident that both single and married respondents have a career in IT and the percentage for single and married respondents are 47.97% and 49.59% respectively.

4.2.3 Race
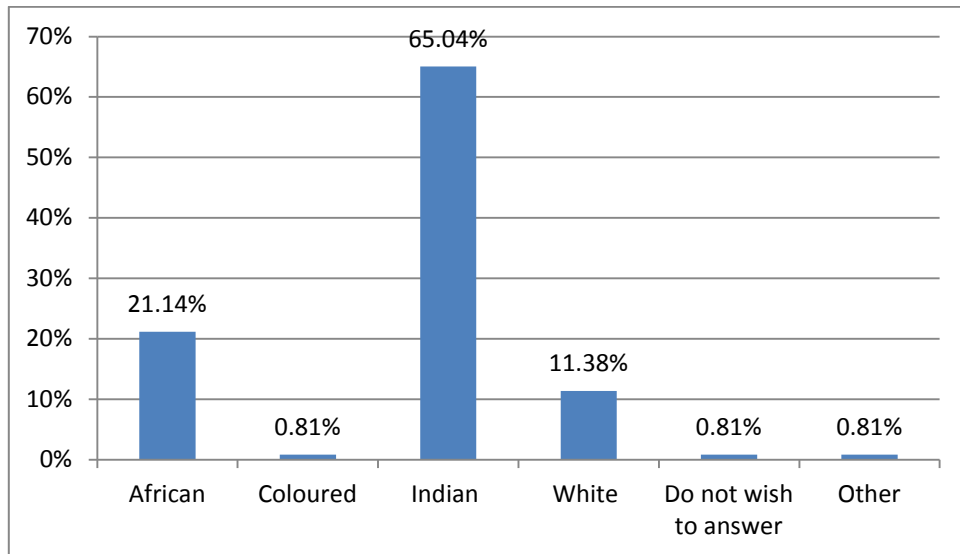
Figure 4.3 Race

From Figure 4.3 which represents the respondent's race, the majority are Indians and the African response was approximately 10% more than the Whites.

4.2.4 Age
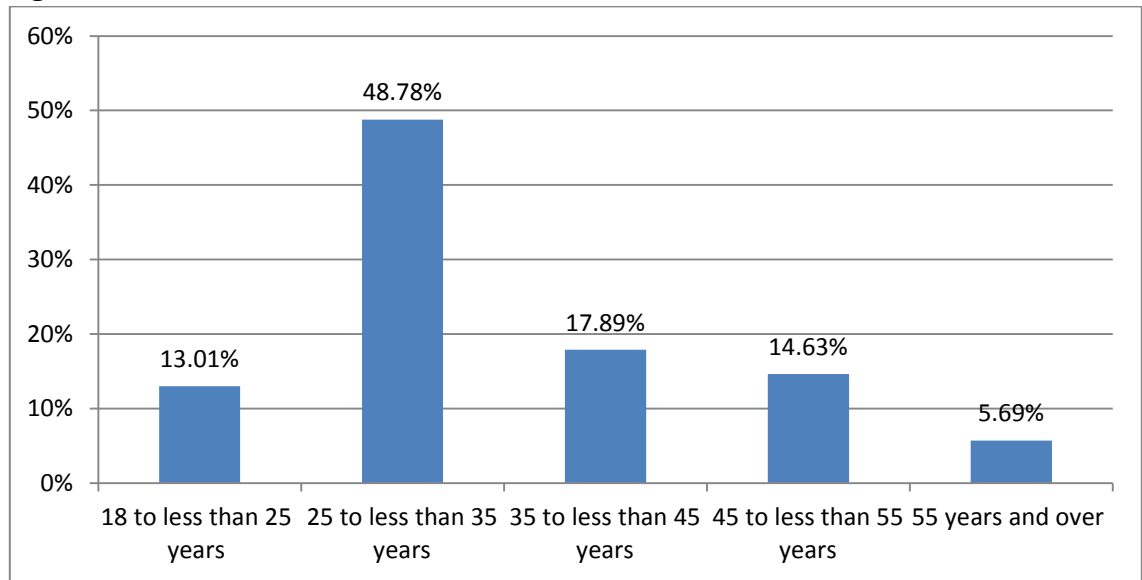
Figure 4.4 Age Group

In the age category the lowest recorded was 5.69% for the age group 55 and the highest (48.78%) was for the age group 25 to less that 35 years old. The high standard deviation (1.074) indicates that the data was widely spread.

4.2.5 Academic Qualification
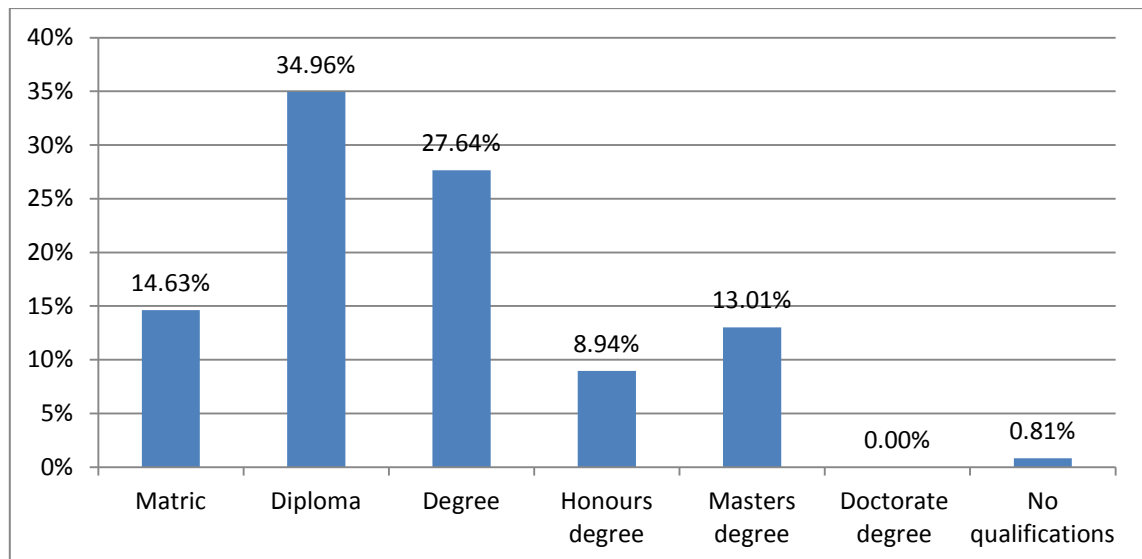
Figure 4.5 Academic Qualification

It is clear that the IT industry seeks academically qualified professionals. Majority of the respondent's have a diploma or a degree which has a combined percentage score of 62.6 percent. The score for respondents with post graduate qualification were 21.95 percent.

4.2.6 Employment Tenure
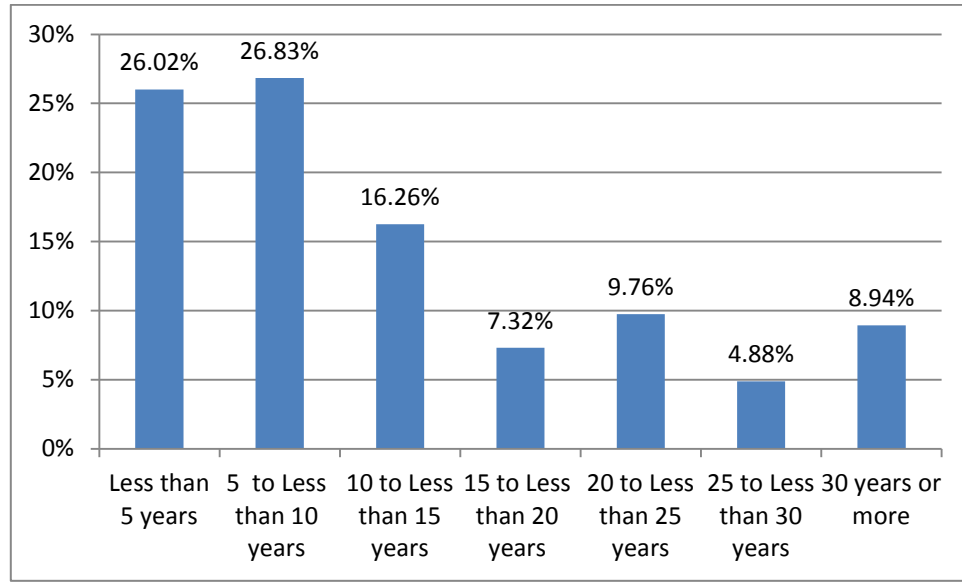
Figure 4.6 Employment Tenure

From the Figure 4.6 the majority of the respondents have ten years and less of IT experience which in total is 52.85 percent. In this survey the respondents in the category of 15 years and more the response shows an even distribution of between a minimum of 4.88% and a maximum of 9.76 percent. From Figure 4.1 the high standard deviation of 1.916 indicates that the data was widely spread, this indicates that the majority of the respondents have less that 10 years of experience in the IT environment and the rest of the data 46.15% is widespread between 10 to 30 years.

4.2.7 Current Employment Status
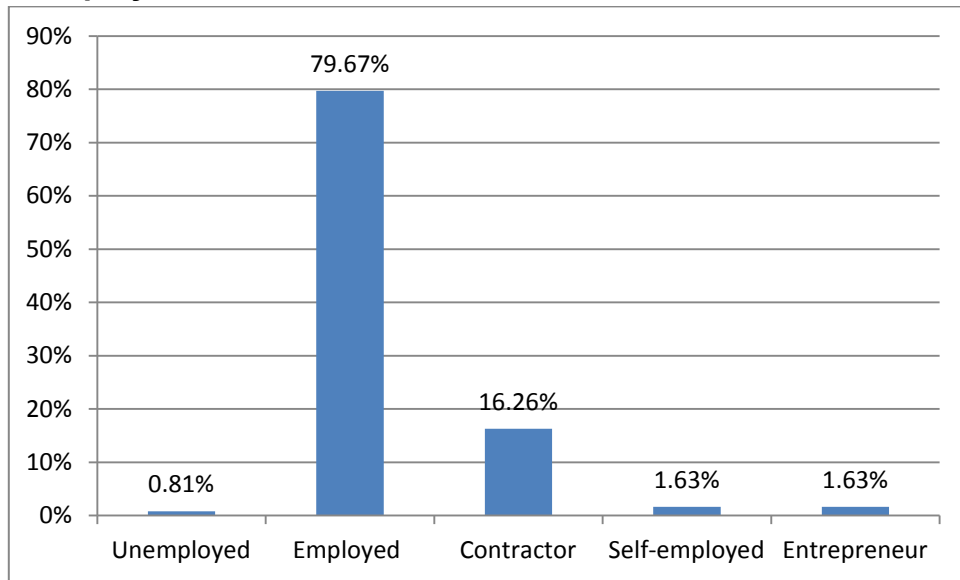
Figure 4.7 Current Employment Status

From the Figure 4.7 it is interesting to note that all the categories have a response. The employed was 79.67% which is the majority of the respondents the rest of the IT employees (19.52 %) are consultants, entrepreneurs are self employed. The unemployed also responded to this survey

4.2.8 Prior Employment Status
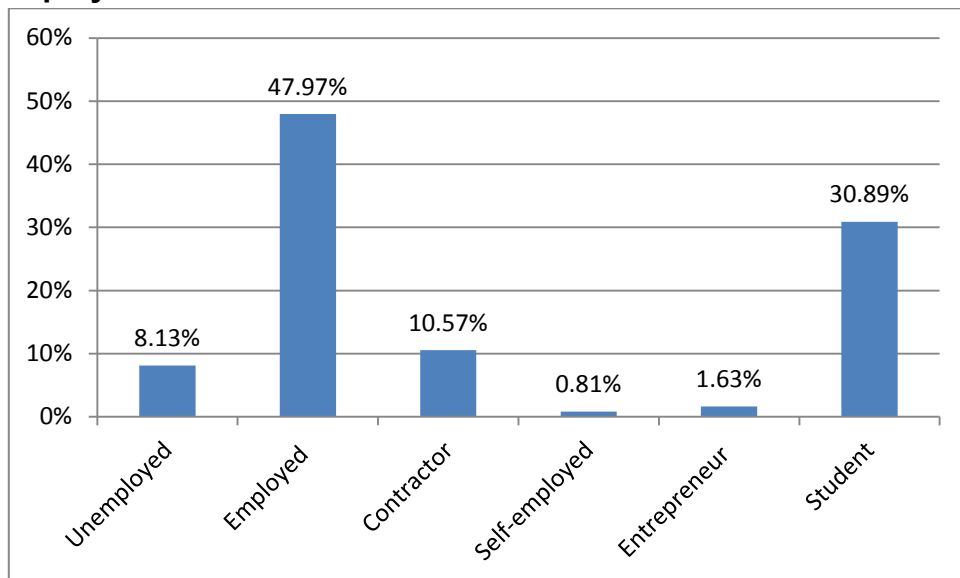
Figure 4.8 Prior Employment Status

It is interesting to note that the status of students and unemployed together scored 78.86% and their previous employment status changed to gainful occupation. In the next section, for survey item 9 to 37, the descriptive statistics and correlation for the constructs will be presented.

The prior employment status including the unemployed and students add up to 39.02 percent and the current unemployed status is 0.81 percent. The statistics in Figures 4.7 and 4.8 reveals that 38.21 (39.02% - 0.81%) have obtained gainful employment. Therefore there was an employment status change from student to employment. On the other hand there was very little change of prior status to current of self-employed individuals, there was only one recorded from the data.

4.3   The Construct Variables

The SPSS (version 19.0) tool set was used to generate the construct variables. Each of the construct variables was computed using the mean of each item within the construct. The mean, standard deviation and variance are compiled.

Descriptive Statistics for the Construct Variables							
Construct	No of Items	Mean	Range	Std. Deviation	Variance	Minimum	Maximum
Role Conflict	5	3.1626	3.40	.71808	.516	1.60	5.00
Perceived Workload	4	3.3577	4.00	.82735	.685	1.00	5.00
Role Ambiguity	5	3.6488	4.00	.76108	.579	1.00	5.00
Autonomy	4	3.4533	4.00	.74131	.550	1.00	5.00
Fairness of Reward	2	2.8740	4.00	1.03344	1.068	1.00	5.00
Work Exhaustion	5	2.7610	4.00	.90632	.821	1.00	5.00
Entrepreneurship	3	3.5718	4.00	.97559	.952	1.00	5.00
Turnover Intention	1	2.9900	4.00	1.30300	1.697	1.00	5.00
Valid N (list wise) = 123							

Table 4.1 Descriptive Statistics of the Construct Variables.

Table 4.2 also indicates the minimum and maximum values. The standard deviation is a measure which indicates how well the mean represents the data (Field, 2005). A small standard deviation indicates that the data when plotted in a graph are closer to the mean. A large standard deviation indicates that the data is scattered and widely spread relative to the mean (Field, 2005). The Pearson's correlation coefficient will be discussed in the next section for the research question RQ1, RQ2, RQ3 and RQ4.

4.4   Correlation

The Pearson's correlation coefficient was calculated, it measures the strength of relationship between two variables (Field 2005). The correlation must be between -1 and +1. A measure of +1 indicates that there is a positive correlation between two variables and the correlation is perfect that is if one variable increases the other increases by a proportional amount. A measure of -1 indicates that there is a negative correlation which is perfect, if the variable decreases the other increases at a proportional rate. Also as per Field (2005) a measure of 0 indicates no correlation that is if there is no relationship between the two variables. The correlation coefficient ratios represented by r

- If r = 0 then there is no correlation.

- If $-0.299 \leq r \leq -0.100$ or $+0.100 \leq r \leq +0.299$ then the measure represents a small or weak correlation (Field, 2005).

- If $-0.499 \leq r \leq -0.300$ or $+0.300 \leq r \leq +0.499$ then the measure represents a moderate or medium correlation (Field, 2005).

- If $r \leq -0.499$ or $+0.499 \leq r$ then the measure is large or strong (Field, 2005).

4.4.1   Correlation for Research Questions RQ1 and RQ2
The research questions RQ1 and RQ2 are:

RQ1: Which of the following factors (role ambiguity, perceived workload, autonomy, role conflict, fairness of reward); contribute to entrepreneurship in information technology professionals (Moore, 2000)?

RQ2: Which of the following factors (role ambiguity, perceived workload, autonomy, role conflict, fairness of reward (Moore, 2000)); contribute to work exhaustion in information technology professionals?

Research Questions RQ1 , RQ2		Independent Variables		
Dependent Variables		RQ2 Work Exhaustion	RQ2 Comparative to Moore (2000,151) Work Exhaustion	RQ1 Entrepreneurship
Role Conflict	Pearson Correlation	.325**	.38**	.143
	Sig. (2-tailed)	.000		.114
	N	123		123
Perceived Workload	Pearson Correlation	.487**	.43**	.042
	Sig. (2-tailed)	.000		.648
	N	123		123
Role Ambiguity	Pearson Correlation	-.290**	-.42**	.166
	Sig. (2-tailed)	.001		.067
	N	123		123
Autonomy	Pearson Correlation	-.366**	-.34**	.124
	Sig. (2-tailed)	.000		.171
	N	123		123
Fairness of Reward	Pearson Correlation	-.330**	-.36**	.040
	Sig. (2-tailed)	.000		.664
	N	123		123

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed)

Table 4.2 Pearson's Correlation matrix. Research Questions RQ1, RQ2

There was no strong correlation for these constructs for research question RQ1 and RQ2.

4.4.2 Entrepreneurship

For research question RQ1 as seen in Table 4.2 there were weak measures determined by the variables Role Conflict with r = 0.143, Role Ambiguity with = 0.166, and Autonomy with r = 0.124, correlated to entrepreneurship. These correlations are weak and positive, however there is a correlation; it means that whenever Role

Conflict, Role Ambiguity, Autonomy increases then this contributes to Entrepreneurship. There is no correlation between Perceived Workload (r = 0.042) and Entrepreneurship and there is no correlation between Fairness of Reward (r = 0.040) and Entrepreneurship.

4.4.3 Work Exhaustion

There is a significant correlation at level 0.01 (2-tailed) as reflected in Table 4.2 for Work Exhaustion as seen in Table 4.2. For research question RQ2 a weak negative correlation is recorded between Role Ambiguity (r = -0.290) and Work Exhaustion. As compared to Moore's research done in 2000 there is a moderate also a negative correlation between Role Ambiguity (r = -0.42) and Work Exhaustion accordingly this research and Moore's research done in 2000, both reflects a correlation between Role Ambiguity and Work Exhaustion. The other variables Role Conflict (r = 0.325) and Perceived Workload (r = 0.487) correlated to Work Exhaustion in research question RQ2, this research and Moore's research done in 2000 both reflect a moderate positive correlation and also the variables Autonomy (r=0.366) and Fairness of Reward (r= 0.330) correlated to Work Exhaustion also reflect a negative correlation for both research as seen in Table 4.2.

4.4.4 Correlation for Research Questions RQ3 and RQ4

The research questions RQ3 and RQ4 are:

RQ3: Do technology professionals having entrepreneurship ability report higher intentions for turnover?

RQ4: Do information technology professionals experiencing higher levels of work exhaustion report higher intention for turnover (Moore, 2000)?

Research Questions RQ3, RQ4		Turnover Intention	RQ4 Comparative Moore (2000. 151) Turnover Intention
Work Exhaustion H4	Pearson Correlation	.422**	.38**
	Sig. (2-tailed)	.000	
	N	123	
Entrepreneurship H3	Pearson Correlation	.277**	Not Done
	Sig. (2-tailed)	.002	
	N	123	

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 4.3 Pearson's Correlation matrix for Research Questions RQ3, RQ4

There is a positive weak correlation between variables Entrepreneurship (r = 0.277) and Turnover Intention for research question RQH3. Research question RQ3 was not done by Moore (2000). In this research the correlation between Work exhaustion (r = 0.422) and Turnover Intention is positive and medium, and Moore's (2000) research also reflect a similar positive medium correlation of r = 0.38.

4.5   Summary

This chapter presented the descriptive statistics of the demographic variables and the constructs. The correlation coefficients together with Moore's (2000) research statistics were presented for the constructs and the correlation between the variables determined by the research question was presented. In the next chapter these statistical data is discussed.

CHAPTER FIVE

Research Discussion

5.1 Introduction

In Chapter One the research problem was introduced which is: Factors Motivating Information Technology Professionals to become Self-employed. In Chapter Two wherein the literature review was presented, Moore's (2000) IT employee turnover model was identified. Also in Chapter Two the various internal and external factors that influence employment especially in the IT industry was discussed. In Chapter Three the survey instrument and the research design was presented, herein also, most importantly, the research questions RQ1, RQ2, RQ3 and RQ4 were formulated. In Chapter Four the inferential statistical data was presented as frequency tables for the demographic variables, and Pearson's correlation statistics was given for the construct variables. In this chapter the data that was presented previously in Chapter Four will be discussed to show if this research done in the City of Durban answers the research questions.

5.2 Discussions

This research was to determine factors that motivate IT professionals to become self-employed. The following factors were identified in Moore's (2000) turnover model that influences turnover intention:

- Role Conflict
- Perceived workload
- Autonomy
- Fairness of Reward
- Role Ambiguity
- Work Exhaustion

Entrepreneurship was an additional factor introduced in Moore's (2000) model which was presented in Figure 3.1 in Chapter Three wherein research question RQ2 and

RQ4 represents Moore's (2000) turnover research question RQ1 and RQ3 measures entrepreneurship ability of IT professionals in the City of Durban. The inferential statistics in the form of Pearson's correlation coefficient was presented in Chapter Four for the research question RQ1, RQ2, RQ3 and RQ4. The next section discusses the change in self-employment in the City of Durban.

5.2.1 Research Questions

To recall the following research questions were tested

RQ1: Which of the following factors (role ambiguity, perceived workload, autonomy, role conflict, fairness of reward (Moore, 2000)) contribute to entrepreneurship in information technology professionals?

RQ2: Which of the following factors (role ambiguity, perceived workload, autonomy, role conflict, fairness of reward (Moore, 2000)) contribute to work exhaustion in information technology professionals?

RQ3: Do technology professionals having entrepreneurship ability report higher intentions for turnover?

RQ4: Do information technology professionals experiencing higher levels of work exhaustion report higher intention for turnover (Moore, 2000)?

Research Question	No Correlation	Weak Correlation	Moderate Correlation	Factors Answering Research Question
RQ1	Perceived Workload Fairness of Reward	Role Ambiguity Role Conflict Autonomy	None	Role Ambiguity Role Conflict Autonomy
RQ2	None	Role Ambiguity	Perceived Workload Autonomy Role Conflict Fairness of Reward	Perceived Workload Autonomy Role Conflict Fairness of Reward
RQ2 Moore (2000)	None	None	Role Conflict Perceived Workload Autonomy Role Conflict Fairness of Reward	Role Conflict Perceived Workload Autonomy Role Conflict Fairness of Reward
RQ3	None	Entrepreneurship	None	Entrepreneurship
RQ4	None	None	Work Exhaustion	Work Exhaustion
RQ4 Moore (2000)	None	None	Work Exhaustion	Work Exhaustion

Figure 5.1 Matrixes of Research Questions

There were no strong correlations observed. Moderate correlations for research question RQ2 and RQ4 were recorded; these correlations and observations were in line with Moore's (2000) model. The following results have been observed from the current research:

- The factors as observed in Figure 4.1 and Figure 5.2, entrepreneurship and work exhaustion influences employee turnover intention among IT professionals determined answered research question RQ3 and RQ4.

- Among the five factors in RQ1 only the following three factors namely role conflict, role ambiguity and autonomy influences entrepreneurship in IT professionals.

- All five factors role conflict, role ambiguity, autonomy, fairness of reward and perceived workload influences work exhaustion in IT professionals that answered RQ2.

- This research has tested successfully Moore's (2000) model of IT professional's employee turnover intentions (Research question RQ2 and RQ4).
- The factors perceived workload and fairness of reward does not support entrepreneurship in IT professionals.

Implications to Theory

The present study indicates to what extent the work exhaustion influences turnover of IT professionals. The study shows that exhausted IT professionals report higher turnover intentions. Perceived work overload is the main contributing factor towards work exhaustion. Moore (2000) reports that work exhaustion and other factors such as role conflict affect employee turnover intentions. The exhausted IT professional portrays a high propensity to look for alternate employment. In the current work environment, there is a high demand for skilled IT professionals therefore job alternatives in other companies are plentiful (Moore, 2000). Mak and Sockel (2001) also found that work overload, role ambiguity, role conflict was significantly related to work exhaustion and burnout. Work exhaustion is a problem for IT professionals, there is an enormous pressure to keep up to date with the changing technology. IT staff are forced to perform extraordinarily else the project may be outsourced (Mak & Sockel, 2001). Shih et al. (2011) suggests that enhancing IT job autonomy can reduce the level of any influence on work exhaustion.

Lack of fairness of rewards such recognition and compensation contributes towards employee turnover. A greater degree of autonomy such as flexibility in the job will reduce work exhaustion and thereby reduce the rate of IT employee turnover. On the other hand autonomy positively correlates to entrepreneurship; the greater the degree of autonomy the more likely the IT professional will venture towards entrepreneurship (Moore, 2000). Finally the factors motivating IT professionals to become self-employed are: role conflict, role ambiguity, work exhaustion, autonomy, and entrepreneurship.

5.3   Summary

In terms of the objectives the empirical data was presented in Chapter Four, the concluding results of this research were discussed in this chapter. All the necessary protocol was followed which included ethical clearance, the research methodology, anonymity and confidentiality of respondents, the development of the research instrument, data analysis and the use of the SPSS (version 19,0) statistical analysis tool. The objectives was realised and the research question was answered which determined the factors that motivate IT professional to become self-employed. In Chapter Six the conclusion of the study, limitations and recommendations will be presented.

CHAPTER SIX

Research Conclusion and Recommendations

6.1 Introduction

This research study was undertaken to determine which factors identified in the research questions motivate IT professionals to become self-employed. In the previous chapter these factors were determined; this research was based on Moore's (2000) employee IT turnover model. Moore's (2000) model was adapted and modified to include entrepreneurship ability among IT professionals.

6.2 Data Relevance to the Research Problem

Moore's (2000) IT turnover model was used in an earlier research by Moore (2000), the usage of this model's proved successful for this research. The data gathered was used to successfully answer the research problem. The survey questionnaire was pretested, the data gathered was validated for internal consistency using Cronbach alpha and the data analysis was done using SPSS (version 19.0) tool.

6.3 Benefits of Research to Stakeholders

There is a high level of unemployment in South Africa. The IT industry worldwide is volatile in terms of IT professional's employment turnover intentions. This study has highlighted factors that motivate IT professionals to become self-employed. The findings in this study will motivate individuals who are contemplating a career as IT (IT) consultants or self-employed IT professionals. The option of contracting as an IT consultant or self-employment is viable. The unemployed may choose to skill themselves and pursue a career in self-employment in the IT industry.

The IT professional being highly skilled and scarce has the choice of various employment arrangements. IT companies must be aware of the high rate of employee turnover, in this respect policies and different employment arrangement must be part of IT human resource strategy. IT professionals are highly skilled and these skills are difficult to obtain. The IT environment is complex and with up to date innovations taking place the IT professional needs to skill and re-skill themselves constantly and this also creates a complex employment arrangement. These employment types can

be consultants, self-employed, part-time employment, contract employee, contingent labour and entrepreneur. These various types of employment arrangement experienced by IT professionals calls for organisations to recognise these employment workforce and make the necessary policy and remuneration changes to accommodate them. This study will benefit organisations to determine which factors influence self-employment and which not, also IT students will be well informed by tertiary institutions on the different work arrangements therefore the students who may make an early start will weigh the options of whether to be employed or be self-employed.

Management in companies must have the ability to attract IT workers with the required talent and skills and to retain them so that the company is productive. There is a huge demand for skilled IT workers. Retention of IT professionals is crucial to the organisation, therefore effective leadership and management skills have to be developed to detect the vulnerability of IT workers towards work exhaustion. Management need to be aware of individual workers and their work loads. Managers need to identify the cause of work exhaustion and find solutions to remedy the situation. Moore (2000) also reports that it is important to reward employees fairly as unfair reward would influence a high turnover intention. Fairness of reward or unfair salary was negatively correlated with employee turnover intention. The opportunity for a higher salary is the most important reason to pursue an alternate job offer. IT professionals or employees who feel that they have a fair system of rewards show less intention to leave the organisation (Korunka et al., 2008).

IT Managers must design IT role to offer enough freedom to IT professionals so that they can be innovative and pursue their own thoughts. To reduce work exhaustion IT managers should support flexibility and autonomy (Ghapanchi et al., 2011).

To overcome role ambiguity and role conflict managers must (Ghapanchi et al., 2011):

- Communicate clearly

- Provide precise information of what is expected of the job

- Provide training

- Provide intent and reason for doing the job

- Define and design clear tasks

- Clearly define sub tasks sequence

- Determine task priorities

Fibre optic and wireless communication creates numerous work arrangements therefore IT professionals have the choice to work as flexitime or remote-work that creates flexibility and autonomy (Mungly, 2008). Future work force and organisations has to add to the body of knowledge of work arrangements of the IT professionals to reduce the IT employee turnover rate. Self-employment has the tendency to discourage individuals and employers to invest on training; future research in this area has to be done.

6.4 Recommendations of the Research

The complex IT employment arrangement provides a platform to further do research on the factors and the attitude of the IT work environment. This research noticed that majority of the IT professionals still in a full-time employment. This calls for further investigative research as to why this is so, investigations could be done on rewards or job satisfaction.

Organisations need to function successfully where IT is the core tool to do business and the technically orientated IT job has to be reorganised and realigned with the new and emerging IT workforce whereby the choice of assignment is with the IT skilled professional and not with the organisation. The organisations will have to make changes and arrange such labour initiatives with the IT individual. Organisations need to detach themselves from the old employment arrangement and be prepared to embrace the new and emerging contingent work arrangement such as self-employment, contractor, entrepreneurship and part-time work. There are also legal implications and employers need to redefine these legal obligations as new work arrangements will require new contractual agreements to mitigate risks for both

parties. Further organisations will loose control of their IT work force and there by grater autonomy is with the individual IT professional. There is a shortage of skilled IT professionals, future studies has to be done on the behaviour of IT workforce in terms of supply and demand of skilled IT professionals.

This study revealed a high employed rate of 79.67% (Figure 4.7). It will be interesting to do studies to determine the internal and external factors that record such a high percentage. Future research has to be done on the benefits of self-employment for IT professionals as this will enable IT professional to take the risk or not into self-employment.

6.5   Limitations and Recommendations of the Study

This study focused only on one external factor which was entrepreneurship which is weakly correlated, future studies should focus on many other external factors such as market demand for IT professionals.

This research was limited to the City of Durban. There were 123 respondents that completed the survey. IT professionals move around South Africa. Future research studies in this discipline of self-employment and IT employee turnover must be done in South Africa in order to get a better understanding of the South African IT environment.

This was a quantitative research design. The individual's perception of self-employment was not researched. Future research on self-employment among IT professionals using the qualitative methodology is also recommended.

Correlation is the measure of the linear relationship between two variables. Correlation can be a very useful tool but it tells nothing about the predictive power of variables. In regression analysis a predictive model is fitted to the data and the model is used to predict values of the dependent variable from one or more independent variables. Correlation is the simplest way to look whether two variables are associated. If there is a relationship between two variables, then as one variable deviates from its mean, then the other variable deviates from its mean in the same or directly opposite way (Field, 2005). Moore (2000) also used correlation coefficients.

For this research Moore's model was adapted and correlation was used to compare like for like. The limitation of this study was also to test Moore's (2000) model. Moore (2000) further used structural equation modelling to determine the strength of predictors. Structural equation modelling can be used in future research.

6.6   Summary

Through this research it was evident that there is an emerging new employment arrangement which is self-employment in the IT industry. The IT industry is volatile with IT professionals constantly re skilling themselves to be on par with changing technology that makes them very competent and competitive as a result these IT professionals create a market for self-employment. The market demand is for IT skills which are with the individual. The IT professional has to take the risk initially to reap the benefits of self employment.

In conclusion this research set out to determine factors the motivate IT professionals to become self-employed. The following factors, which are role conflict, autonomy, role ambiguity, work exhaustion and entrepreneurship motivates IT professionals to become self-employed.

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Required Sample Size Table   Appendix 1

from: The Research Advisors

Population Size	Probability of Success	Confidence = 95.0% Degree of Accuracy/Margin of Error				Confidence = 99.0% Degree of Accuracy/Margin of Error			
		0.05	0.035	0.025	0.01	0.05	0.035	0.025	0.01
10		10	10	10	10	10	10	10	10
20		19	20	20	20	19	20	20	20
30		28	29	29	30	29	29	30	30
50		44	47	48	50	47	48	49	50
75		63	69	72	74	67	71	73	75
100		80	89	94	99	87	93	96	99
150		108	126	137	148	122	135	142	149
200		132	160	177	196	154	174	186	198
250		152	190	215	244	182	211	229	246
300		169	217	251	291	207	246	270	295
400		196	265	318	384	250	309	348	391
500		217	306	377	475	285	365	421	485
600		234	340	432	565	315	416	490	579
700		248	370	481	653	341	462	554	672
800		260	396	526	739	363	503	615	763
900		269	419	568	823	382	541	672	854
1,000		278	440	606	906	399	575	727	943
1,200		291	474	674	1067	427	636	827	1119
1,500		306	515	759	1297	460	712	959	1376
2,000		322	563	869	1655	498	808	1141	1785
2,500		333	597	952	1984	524	879	1288	2173
3,500		346	641	1068	2565	558	977	1510	2890
5,000		357	678	1176	3288	586	1066	1734	3842
7,500		365	710	1275	4211	610	1147	1960	5165
10,000		370	727	1332	4899	622	1193	2098	6239
25,000		378	760	1448	6939	646	1285	2399	9972
50,000		381	772	1491	8056	655	1318	2520	12455
75,000		382	776	1506	8514	658	1330	2563	13583
100,000		383	778	1513	8762	659	1336	2585	14227
250,000		384	782	1527	9248	662	1347	2626	15555
500,000		384	783	1532	9423	663	1350	2640	16055
1,000,000		384	783	1534	9512	663	1352	2647	16317
2,500,000		384	784	1536	9567	663	1353	2651	16478
10,000,000		384	784	1536	9594	663	1354	2653	16560
100,000,000		384	784	1537	9603	663	1354	2654	16584
264,000,000		384	784	1537	9603	663	1354	2654	16586

Professional researchers typically set a sample size level of about 500 to optimally estimate a single population parameter (e.g., the proportion of likely voter vote for a particular candidate). This will construct a 95% confidence interval with a Margin of Error of about ±4.4% (for large populations). Since there is an relationship between sample size and the Margin of Error, smaller sample sizes will yield larger Margins of Error. For example, a sample size of only 100 wil 95% confidence interval with a Margin of Error of almost ±13%, too large a range for estimating the true population proportion with any accuracy.

http://research-advisors.com/tools/SampleSize.htm   30-10-2012 12:17 PM

QUESTIONAIRE AND MEASUREMENT ITEMS

Role Conflict:

Role conflict is a factor that influences job satisfaction that influences turnover intention. Lack of precise and clear information of what is expected in the role influences turnover behaviour. Role conflict occurs when an individual receives conflicting job performance information or is expected to do too much (Rizzo, House & Lirtzman, 1970, Lee, 2000, Moore, 2000, Kim & Wright, 2007).

Role Conflict   There are five questions identified for the construct role conflict.
Score: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree
9.   I work with two or more groups of people who operate quite differently.
10. I receive incompatible requests from two or more individuals.
11. I do things that are sure to be accepted by one individual and unaccepted by other individuals.
12. I work on unnecessary things.
13. I receive an assignment without resources to complete it.

Table1 Role conflict adapted from Rizzo et al., 1970, Lee, 2000, Moore, 2000, Kim & Wright, 2007.

Perceived Workload

IT Professionals can be over burdened with many tasks. Due to many deadlines and the complexity of the IT environment the IT worker can be over loaded with work (Kirmeyer & Dougherty, 1988, Moore, 2000, Kim & Wright, 2007, Lee, 2009).

Perceived Workload There are four questions identified for the construct perceived workload.
Score: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree
14. I feel that the number of requests, problems, or complaints I deal with is more than expected.   15. I feel that the amount of work I do interferes with how well it is done.   16. I feel busy.   17. I feel pressured.

Table 2 Perceived Workload adapted from Kirmeyer and Dougherty, 1988, Moore, 2000, Kim & Wright, 2007, Lee, 2009.

Role Ambiguity

Role ambiguity will promote dissatisfaction in the job. It will create confusion and influence turnover intention. IT personnel may be particularly sensitive to role conflict and role ambiguity that may result in job tension and turnover (Rizzo et al., 1970, Lee, 2000, Moore, 2000, Kim & Wright, 2007).

Role Ambiguity There are five questions identified for the construct role ambiguity.
Score: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree
18. I have clear, planned goals and objectives for my job   19. I know what my work responsibilities are.   20. I know that I have divided my time properly.   21. I know exactly what is expected of me.   22. Explanation is clear of what has to be done at work

Table 3 Role Ambiguity adapted from Rizzo et al, 1970, Lee, 2000, Moore, 2000, Kim & Wright, 2007.

Autonomy

Autonomy may be especially important since it provides IT professionals the freedom to perform their work independently thus reducing frustration from actions get work approval (Moore, 2000, McKnight, Phillips & Hardgrave, 2009, Shih, Jiang, Klein & Wang 2011).

<u>Autonomy</u> There are four questions identified pertaining to the construct autonomy.
Score: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree
23. I can vary how I do my work. 24. My job allows me to organise my work by myself. 25. I usually make my own decisions about what to do on my job. 26. I feel certain how much authority I have.

Table 4 Autonomy adapted from Moore, 2000, McKnight et al., 2009, Shih et al., 2011.

Fairness of rewards

There is an exchange of benefits between employer and employee in the form of rewards. The reward will be either fair or unfair. This may have an influence on entrepreneurship or work exhaustion in the form of rewards being unfair. Fairness of pay or compensation is a central feature in the work lives of many individuals (Moore, 2000).

<u>Fairness of Rewards</u> There are two questions for the variable fairness of rewards. Score: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree
27. I think my level of pay is fair. 28. Overall, the rewards I receive here are quite fair.

Table 5 Fairness of rewards adapted from Moore, 2000.

Entrepreneurship

IT professionals are highly skilled and possess abilities to be creative. There is an entrepreneurial perspective of IT professionals who are working as independent contractors, one need to examine the entrepreneurial abilities of these IT professionals (Lee, Leung & Wong, 2006).

Entrepreneurship Entrepreneurship has three questions
Score: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree
29. I have always wanted to work for myself (i.e. be self-employed). 30. If I have the opportunity, I will start my own IT Company. 31. I have the skills to start my own IT Company.

Table 6 Entrepreneurship adapted from Lee et al., 2006.

Work Exhaustion

IT professionals face long hours, excessive travel, and stress associated with project deadlines, making them susceptible to work exhaustion (Schaufeli, Leiter and Kalimo, 1995, Moore, 2000, Kim, 2007, Lee 2009, Shih et al., 2011).

Work Exhaustion Five questions have been identified for the construct work exhaustion
Score: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree
32. I feel emotionally drained from my work. 33. I feel used up at the end of the workday. 34. I feel fatigued when I get up in the morning and have to face another day on the job. 35. I feel burned out from my work. 36. Working all day is really a strain for me.

Table7 Work Exhaustion adapted from Schaufeli et al., 1995, Moore, 2000, Kim & Wright, 2007, Lee, 2009, Shih et al., 2011.

Turnover intention

An individual's intention to quit an organisation is important as companies are faced with a dilemma to retain skilled IT professionals thus saving turnover costs. To measure the intention to quit or stay is a good predictor of turnover intention (Porter, Crampon, & Smith, 1976, Lee, 2003, Moore, 2000, Kim & Wright, 2007).

Turnover Intention   Turnover intention has one question
Score: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

37. I will actively look for a new job in the next 6 months
38. I have thoughts of leaving my job in the next 6 months.
39. I am likely to be working for another organization in the next 6 months.
40. I frequently think of quitting this job.
41. I will probably look for a job during the next year.

Table8 Turnover Intention adapted from Porter et al., 1976, Lee, 2003, Moore, 2000, Kim, 2007.

Table of Pretest Changes

The following changes were done after pretesting.

Change 1	
Before	Survey Information Technology Professionals
After	Survey: Information Technology Professionals
Reason	Presentation

Change 2	
Before	African Coloured Indian White
After	African Coloured Indian White Do not wish to answer Other [......................]
Reason	Added two more options for Q3 What is your race?

Change 3	
Before	Q5 What is your highest qualification?
After	Q5 Highest academic qualification.
Reason	The options are academic qualification.

Change 4	
Before	Q6 Choose the number of years work experience you have in IT.
After	Q6. How many years have you worked in the IT industry in total (does not have to be consecutive years)?
Reason	Question was ambiguous.

Change 5	
Before	Q7 What is your status of employment?
After	Q7 What is your current employment status?
Reason	Question was ambiguous.

Change 6	
Before	Q8 What is your prior status of employment?
	Unemployed
	Employed
	Contractor
	Self-employed
	Entrepreneur
After	Q8 What was your employment status prior to your current status?
	Unemployed
	Employed
	Contractor
	Self-employed
	Entrepreneur
	Student
Reason	Question was ambiguous and added additional option of student.
Change 7	
Before	Q11 I do things that are sure to be accepted by one individual and unaccepted by other individuals.
After	Q11 I do things that are sure to be accepted by one individual and not accepted by other individuals.
Reason	Question is now precise.
Change 8	
Before	Q37. I will actively look for a new job in the next 6 months.
	Q38. I have thoughts of leaving my job in the next 6 months.
	Q39. I am likely to be working for another organization in the next 6 months.
	Q40. I frequently think of quitting this job.
	Q41 I will probably look for a job during the next year.
After	Q37 I am actively looking for a new job.
Reason	Q37 to Q41 All are worded be the same question. Replaced by new Q37.
Change 9	
Before	Metric

After	Matric
Reason	Spelling error for matric qualification.

QuestionPro questionnaire follows.

Survey: Dwarika-MBA

UNIVERSITY OF KWAZULU-NATAL

Masters in Business Administration

Research Project: Factors Motivating Information Technology

Professionals to become Self-employed

Researcher: Roopnarain Dwarika (cell 083 253 5713)

Supervisor: Professor Manoj Maharaj (phone 031- 260 8003)

Research Office: Ms P Ximba (phone 031-260 3587)

Dear Respondent,

I, Roopnarain Dwarika, MBA student, at the Graduate School of Business and Leadership, University of KwaZulu-Natal, invite you to participate in a research project entitled: Factors Motivating Information Technology Professionals to become Self-employed.

Through your participation, I hope to determine what factors influence information technology (IT) professionals to become self-employed or have intentions to quit their current employment. If you are the IT professional who performs an assortment of functions that involves installing and designing application systems, designing and maintaining complex networks and databases, other duties may include data management, computer networking, engineering computer hardware, software and data base design, management and administration of information systems, then your participation in this survey is valuable.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence or risk. There will be no monetary gain from participating in this survey. Confidentiality, data security and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and leadership, of the University of KwaZulu-Natal.

If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above. The survey should take you about 10 to 15 minutes to complete.

In section B of this questionnaire, you are asked to indicate what is true for you, so there is no "right" or "wrong" answer. Work as rapidly as you can. If you wish to make a comment please enter it directly as comments at the end. Your individual response will remain confidential. I hope you will take the time to complete this survey.

Sincerely

R Dwarika

(209510007)

Thank you very much for your time and support. Please start with the survey now by accepting and clicking on the Continue button below.

☐ **I hereby confirm that I understand the contents of this document and the nature of the research project, and I agree to participate in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.**

Survey: Information Technology Professionals
Section A - Demographic Information
Please answer the following questions by selecting one option with a mouse click.

----

1. What is your gender? *
○　　Female
○　　Male

2. What is your marital status? *
○　　Single
○　　Married
○　　Divorced

3. What is your Race *
○　　African
○　　Coloured
○　　Indian
○　　White
○　　Do not wish to answer
○　　Other　　［＿＿＿＿＿＿＿＿＿＿＿＿＿＿］

4. What is your age? *
○　　18 to less than 25 years
○　　25 to less than 35 years
○　　35 to less than 45 years
○　　45 to less than 55 years
○　　55 years and over

5. Highest academic qualification. *
○　　Matric
○　　Diploma
○　　Degree
○　　Honours degree

○ Masters degree

○ Doctorate degree

○ No qualifications

6. How many years have you worked in the IT industry in total (doesnot have to be consecutive years)? *

○ Less than 5 years

○ 5 to Less than 10 years

○ 10 to Less than 15 years

○ 15 to Less than 20 years

○ 20 to Less than 25 years

○ 25 to Less than 30 years

○ 30 years or more

7. What is your current employment status? *

○ Unemployed

○ Employed

○ Contractor

○ Self-employed

○ Entrepreneur

8. What was your employment status prior to your current status? *

○ Unemployed

○ Employed

○ Contractor

○ Self-employed

○ Entrepreneur

○ Student

Section B – Information Technology Information
Please score the following statements with a mouse click.

----

9. I work with two or more groups of people who operate quite differently *

○ Strongly Disagree   ○ Disagree   ○ Neutral   ○ Agree   ○ Strongly Agree

----

10. I receive incompatible requests from two or more individuals. *

○ Strongly Disagree   ○ Disagree   ○ Neutral   ○ Agree   ○ Strongly Agree

----

11. I do things that are sure to be accepted by one individual and not accepted by other individuals. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

---

12. I work on unnecessary things. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

---

13. I receive an assignment without resources to complete it. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

---

14. I feel that the number of requests, problems, or complaints I deal with is more than expected. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

---

15. I feel that the amount of work I do interferes with how well it is done. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

---

16. I feel busy. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

---

17. I feel pressured. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

---

18. I have clear, planned goals and objectives for my job. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

---

19. I know what my work responsibilities are. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

---

20. I know that I have divided my time properly. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

---

21. I know exactly what is expected of me. *

○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree

22. Explanation is clear of what has to be done at work. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

23. I can vary how I do my work. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

24. My job allows me to organise my work by myself. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

25. I usually make my own decisions about what to do on my job. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

26. I feel certain how much authority I have. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

27. I think my level of pay is fair. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

28. Overall, the rewards I receive here are quite fair. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

29. I feel emotionally drained from my work. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

30. I feel used up at the end of the workday. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

31. I feel fatigued when I get up in the morning and have to face another day on the job. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

32. I feel burned out from my work. *

◯ Strongly Disagree   ◯ Disagree   ◯ Neutral   ◯ Agree   ◯ Strongly Agree

33. Working all day is really a strain for me. *

  ○ Strongly Disagree   ○ Disagree   ○ Neutral   ○ Agree   ○ Strongly Agree

34. I have always wanted to work for myself (i.e. be self-employed). *

  ○ Strongly Disagree   ○ Disagree   ○ Neutral   ○ Agree   ○ Strongly Agree

35. If I have the opportunity, I will start my own IT Company. *

  ○ Strongly Disagree   ○ Disagree   ○ Neutral   ○ Agree   ○ Strongly Agree

36. I have the skills to start my own IT Company. *

  ○ Strongly Disagree   ○ Disagree   ○ Neutral   ○ Agree   ○ Strongly Agree

37. I am actively looking for a new job. *

  ○ Strongly Disagree   ○ Disagree   ○ Neutral   ○ Agree   ○ Strongly Agree

Comments:

27 July 2012

Mr Roopnarain Dwarika 209510007
Graduate School of Business and Leadership

Dear Mr Dwarika

Protocol reference number: HSS/0569/012M
Project title: Factors Motivating Information Technology Professionals to become Self-employed.
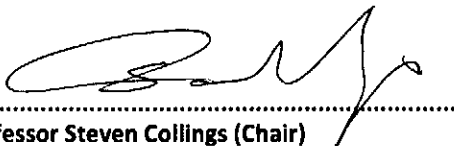
                                                                            EXPEDITED APPROVAL
I wish to inform you that your application has been granted Full Approval through an expedited review process.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

....
Professor Steven Collings (Chair)

/px

cc Supervisor Professor Manoj Maharaj
cc Academic leader Dr SA Bodhanya
cc School Admin. Ms Wendy Clarke