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Voluntary Turnover of Women in the IT Industry

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Abstract

This research seeks to gain an in-depth understanding of the reasons that women voluntarily leave the Information Technology (IT) industry. By speaking directly to those women who left the industry, the study ascertains the environmental, organisational and individual level factors that contributed to their decision to exit. Gaining this level of understanding provides valuable insights that can be used to curb the persistent underrepresentation and decline of women in the IT industry. A two-phased qualitative study was conducted, firstly industry experts were interviewed and provided their comprehension of the situation, thereafter the women who had left were also interviewed and provided the opportunity to express the drivers behind their decision to leave.

Some of the findings, such as the importance of organisational culture and the role of the manager echo previous result. Novel insights are also provided, such as the ubiquity of IT, which highlights the fact that the continued reliance on and need for IT may be blurring the lines between IT and “other businesses”.

Keywords

Voluntary Turnover, Women, Information Technology (IT)

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Tiro Sibaya	6 November 16 **Date**

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CHAPTER 1: INTRODUCTION TO RESEARCH PROBLEM

1.1 Introduction

The Information Technology (IT) industry is one of the fastest growing and has the potential to contribute significantly to the growth and performance of a country's economy (Dutta, Geiger, & Lanvin, 2015). The increasing reliance on technology in nearly all spheres of life, as well as benefits such as economic growth, the creation of jobs, and improved service attest to the importance of the industry (World Bank Group, 2016).

Despite the growth in IT, the number of women in the IT industry is low (Malakian, 2011) and has been steadily declining over the past three decades (Corbett & Hill, 2015). In Europe and the US, females are estimated to represent about 30% of the IT workforce (Cheng, 2015; Luxton, 2016). These numbers are predicted to decline to about 25% by the end of 2016 (Deloitte Global, 2016), and if the trend continues, the industry will not be able fill half of the available jobs by 2018 (Ashraft & Blithe, 2010).

A recent study of nine industries by Krivkovich, Kutcher, & Yee (2016) found that within IT many organisations are afflicted with one of three common pipeline pain points: women are unable to enter, stuck at the middle, or locked out of the top. The study further established that the IT industry is the worst performing, with women holding 37% of entry-level roles, versus 45% for the overall sample, and underrepresentation continuing at each stage of the pipeline (Krivkovich et al., 2016).

1.2 Research Scope and Objectives

The topic of women leaving the IT industry has been of interest to both academic and business fraternities. Griffiths & Moore (2010) conducted a similar study in the UK and found that the leading reasons for women leaving the IT industry in that region were primarily linked to environments and organisational cultures that were not supportive of women.

This research will seek to follow a similar method and afford women in the South African context the opportunity to articulate the circumstances and experiences that contributed to their decision to exit the IT industry. By speaking directly to those women who left, the study will ascertain the reasons that lead women to voluntarily leave the IT industry.

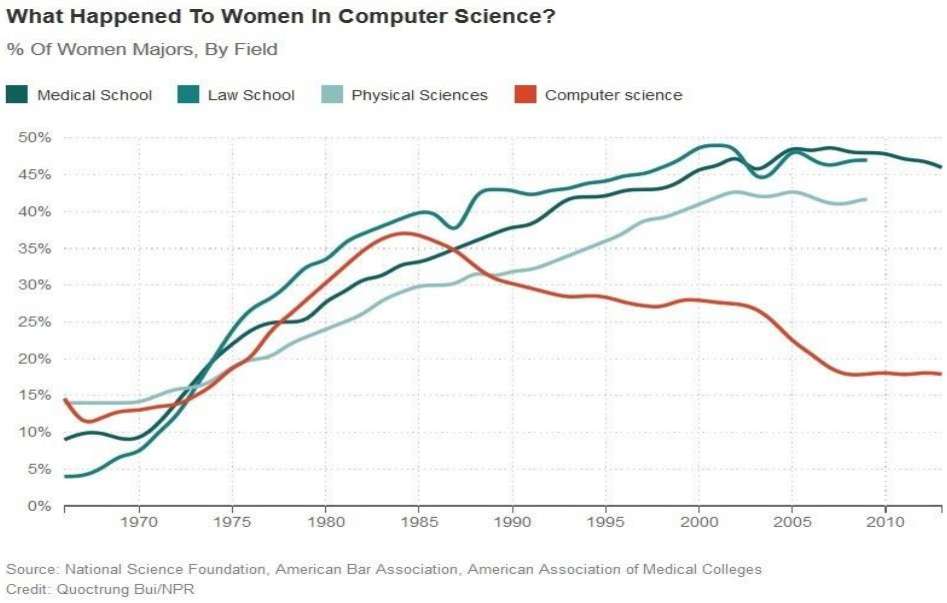
1.3 Women's contributions

The valuable contribution that women make in business is a known fact and a positive correlation between the presence of women in decision-making bodies and company performance has been established. More than a decade ago a study found that the group of companies with the highest representation of women in their top management teams experienced better financial performance, with return on equity (ROE) being 35,1% higher, and total return to shareholders (TRS) being 34% higher than those with fewer women (Catalyst, 2004). Yet currently and across industries, women continue to be underrepresented at all levels of the corporate pipeline, with numbers with numbers declining from 46% at an entry level to 19% at the C-level (Lean In & McKinsey&Company, 2016).

The IT industry is further impacted by the fact that fewer female students are enrolling for and graduating with Computer Science degrees (Alexander et al., 2011; Doerschuk et al., 2016; Huyer, 2014; Milgram, 2011). This despite the fact that females have shown interest in computer studies (Croasdell, McLeod, & Simkin, 2011); and Bayrak & Gulati (2015) found the performance of female students to be better than that of males in an undergraduate course, and just as well in an graduate program.

Figure 1 below shows that, in the US, while the numbers of female students majoring in fields such as Medicine, Law and Physical Sciences have been increasing, those with Computer Science as a major have been declining since around 1985 (Luxton, 2016).

Figure 1: What happened to women in Computer Science? Source: Luxton (2016)



1.3.1 Why women participation matters for the nation

At 51,3% of the population, women are in the majority in South Africa (Statistics South Africa, 2011) and constitute 45,2% of the Economically Active Population (EAP) (Department: Women, 2015). Legislation such as the Employment Equity Act exists for the objective of achieving equity by promoting equal access and fair treatment, and also aims to implement affirmative action to ensure equitable representation of previously disadvantaged groups (Department: Labour South Africa, 1998). In addition, the Department of Women has programmes that focus on initiatives to promote the economic empowerment and participation of women (Department: Women South Africa, 2015).

On an annual basis, the South African Department of Labour conducts a review of the state of employment equity in the country and publishes the findings in the Commission for Employment Equity (CEE) report. The latest findings from the report reveal that there are still gaps in both the public and private sectors as far as women representation is concerned. Women make up only 20,1% and 30,6% of top management in the private and public sector respectively (Department: Labour South Africa, 2016).

1.3.2 Why women participation matters for business

The business case for diversity has been presented, discussed and proven. Hunt, Layton, & Prince (2013) have provided four pillars that support the women participation, namely: improved financial performance, the opportunity to leverage talent, the ability to reflect the marketplace and build reputation, and increase innovation and group performance.

Studies have shown that companies with women representation in senior management and boards perform better financially and gain competitive advantage (Borisova & Sterkhova, 2012; Luckerath-Rovers, 2011). Organisations with three or more women in senior management scored higher than companies with no women on top on organisational excellence; and companies with two or more women in the board are 41% ahead of the sector's average in terms of ROE, and 56% ahead in terms of earning before interest and tax (EBIT) (Desvaux, Devillard, & Baumgarten, 2007; Joecks, Pull, & Vetter, 2012).

Other studies have also linked high female participation with business benefits such as: better business performance (Dezso & Ross, 2012; Hoogendoorn, Oosterbeek, & Praag,

2013); a decrease in the intention to leave (Kaplan, Wiley, & Maertz, 2011); better corporate governance and board oversight, as well as less unethical behaviour and fraud (Adams & Ferreira, 2009; Cumming, Leung, & Rui, 2015); increased corporate social responsibility (CSR) (Soares, Marquis, & Lee, 2011); an increased effectiveness in solving difficult problems (Massachusetts Institute of Technology, 2010); and improved innovation (Miller & Triana, 2009).

1.3.3 Why women participation matters for IT in particular

Information Technology is considered the backbone and enabler of business. Despite this, and as outlined in the preceding sections, the industry continues lag behind in terms of gender diversity. The industry is gender skewed; faces leaks in the pipeline at career choice and advancement stages; the women who are building careers in this field are declining; and those who persist are faced with barriers (Ahuja, 2002; Armstrong, Nelms, Riemenschneider, & Reid, 2012; Ashraft & Blithe, 2010; Corbett & Hill, 2015; Michie & Nelson, 2006)

The purpose of this report is to gain an understanding of the reasons that lead women to voluntary leave the IT industry.

1.4 Defining the IT Industry

In South Africa, the IT industry contributed 2,9% to the 2012 Gross Domestic Product (GDP) (Statistics South Africa, 2012). Additionally, the Compound Annual Growth Rate (CAGR) for IT sales in hardware, software and services is expected to grow by 5,6%, 9,2% and 9,4% respectively between 2016 and 2020 (BMI Research, 2016). Evidently, the IT industry is a considerable economic contributor and is predicted to continue being so.

Information Technology is a broad term that is often used interchangeably with Computing; Information Systems (IS); Information, Communication and Technology (ICT); and Technology. Various definitions such as the application of technology to information processing are provided (Hurvid, 2016). Carpenter (2013) differentiates between IS and IT, and offers the distinction that IS deals with software and systems development, while IT is concerned with technology management and is a collection of technology and resources used to manage information. Hasan & Kazlauskas's (2009) argument that Information Systems (IS) is different from Information Technology is the fact that IS "*crosses traditional discipline boundaries, drawing on the concepts, theories*

and methodologies of many other areas, including organisational science, computing science, information management and systems thinking" (p.4).

Onn & Sorooshian (2013), observing the lack of consensus in the definition of the term Information Technology in research, conducted a review that highlights the extensive and broad nature of the term.

For the purpose of this study, Information Technology refers to both the technical (infrastructure) and software development side of the profession and the focus is on the professionals that are involved in this field. Information Technology (IT) and Information Systems (IS) professionals are used interchangeably in this study to refer to professionals in this field.

1.5 Defining Women

For the purpose of this study, women refer to those belonging to or classifying themselves as female who have worked in the IT industry (as defined above) and at some point in their careers voluntarily left. This includes all levels of careers, entry, management, and executive levels.

1.6 Defining Turnover

Turnover, can be generally classified as either involuntary or voluntary. Sutherland & Jordaan (2004) state that "*involuntary turnover is employer-initiated, due to retrenchment, or dismissal for disciplinary or performance related reasons; and voluntary turnover is employee-initiated, with the staff member seeking better employment conditions or prospects or job satisfaction*" (p.56).

While both involuntary and voluntary turnover impact organisations, this study will focus only on the latter. It is also important to note that, the voluntary turnover in this study explicitly focuses on those women who left the South African IT industry, choosing either to pursue different careers in different industries, or choosing to remain unemployed.

1.7 Research Motivation

Joseph, Ng, Koh, & Ang (2007) observe that although there is a considerable focus on voluntary turnover in IT, "*most studies focused on predicting turnover intention, leaving a major gap in our understanding of actual IT turnover behaviour*" p.555; the authors further call upon research that focuses on actual IT behaviour. In addition, Cha & Quan

(2011) observed that factors leading to turnover are not universally applicable across countries and noted that factors that are applicable to professionals from a developed country may not be applicable to professionals in a developing country. This study aims to close the gap in two key ways: firstly by focusing on actual turnover and secondly by providing context through focusing on women in South Africa that have left the IT industry.

An understanding of the reasons will provide theoretical and practical insights to the government, academic, business, and social fraternities as gender parity and female participation continues to be topical among these stakeholders. The theoretical contribution is expected to be an expansion of existing theory. Where previous studies have primarily focused on turnover intentions (Joseph et al., 2007; Lo, 2015), this study aims to focus on those women who left, thus extending the focus to actual turnover.

1.8 Structure of the study

The paper is structured as follows: a review of the relevant literature is presented in the next chapter followed by the research questions in Chapter 3. The methodology that was followed to conduct the study will then be outlined in Chapter 4. The findings of the study and their discussion follow in Chapters 5 and 6 respectively. Finally in Chapter 7, the report concludes by providing some recommendations for field application and suggestions for future research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

An analysis of literature reveals that the subject of voluntary turnover in business and in IT has captured the interest of both academic and business fraternities. Given the articulated significance of the IT industry and the previously mentioned findings by Krivkovich et al. (2016), that the IT industry is suffering from women underrepresentation at all stages of the career pipeline, understanding the reasons for the high IT turnover in general and the turnover of women in the industry specifically becomes more pertinent.

Businesses continue to rely heavily on technology, and with the growth of areas such as mobile and digital, this reliance is expected to increase. It is therefore critical for organisations to retain the staff that provide its technological support, as this becomes “a critical factor in the attainment of strategic goals” (Moore, 2000, p. 141). As promulgated by the resource-based theory, the success of a company is impacted by the use of the resources available at its disposal (Barney, 2001; Barney, Ketchen, & Wright, 2011; Teece, 2007).

Despite the understanding that resources are key contributors to organisation success, the IT industry continues to face high levels of employee turnover. The industry is characterised by statistics ranging from 15% to 20% from 1960 to the 2000s (Magid Igbaria & Greenhaus, 1992; Lo, 2015). Even though turnover usually declines during periods of economic recession, the overall turnover trend in the IT industry does not follow suit (Lo, 2015).

Given the fact that voluntary turnover is a common occurrence, there are extensive studies focusing on the phenomenon. However, as mentioned in the research motivation in section 1.7 above, the majority of the studies focus on turnover intention, and not actual turnover. Joseph et al. (2007) conducted a review of 33 studies and found that only two, i.e. Bartol (1983) and Josefek Jr & Kauffman (2003) examined actual IT turnover. Lo’s (2015) more recent review of turnover literature found only four studies that focused on actual turnover, and this count includes the study by Bartol.

In a review of turnover-related research, Joseph et al. (2007) found that the body of work was dominated by a number of theories, namely: organisational equilibrium theory by March and Simon (1958); met expectations theory by Porter and Steers (1973); linkage model by Mobley (1977); unfolding model of turnover by Lee and Mitchell (1994); and

job embeddeddness theory by Mitchell and Lee (2001), which also looked at the reasons people stay in their jobs.

This chapter starts by providing a brief summary of the major turnover models that are dominant in the literature, followed by a discussion of the reasons for voluntary turnover that are impacting the IT industry in general, and women in IT specifically.

2.2 Major Turnover Models

This section provides a brief summary of the turnover models encountered in literature. The four major turnover models that were reviewed in this research are: traditional rational models based on March & Simon's (1958) theory of organisational equilibrium as cited by (Lo, 2015); the unfolding model by Lee & Mitchell (1994); the Distal | Proximal Factors Model; and the Extended Eight Factor Model by Maertz & Griffeth (2004), each is discussed briefly in the following sections.

2.2.1 Traditional Rational Models

Joseph et al's (2007) review of the models of turnover linked to the theories as covered in section 2.1 above asserts that the traditional models were primarily based on the argument that turnover occurs when individuals believe their contribution to be more than their rewards. Building from this body of work, the next wave of models described turnover as stemming from job dissatisfaction, which resulted in withdrawal cognitions and job search, and when an alternative, more attractive job is found that leads to the intention to leave and ultimately turnover.

2.2.2 The Unfolding Model

The Unfolding Model founded on image theory, suggests a general process consisting of four decision paths, triggered by shocks, that employees may follow when voluntarily leaving the organisation (Lee & Mitchell, 1994). The authors argue that a number of variables, such as the occurance of shocks, following scripts, the availabiltiy of alternatives, a misalignment of image, and a reduced level of job satisfaction influence turnover.

A criticism leveled against the previous two camps of modesl is that they primarily focused on *how* individuals decide to leave their positions rather than *why* they leave (Maertz, Boyar, & Pearson, 2012).

2.2.3 Extended Eight Forces Model

The Eight Forces Framework was first defined by Maertz & Griffeth (2004) in an effort to produce a model that provides a "*relatively comprehensive, yet parsimonious, explanation of why employees quit (and stay with) organizations*" (p.668). The forces specified in the model are: affective, contractual, calculative, altenative, behavioural, normative, moral | ethical, and constituents.

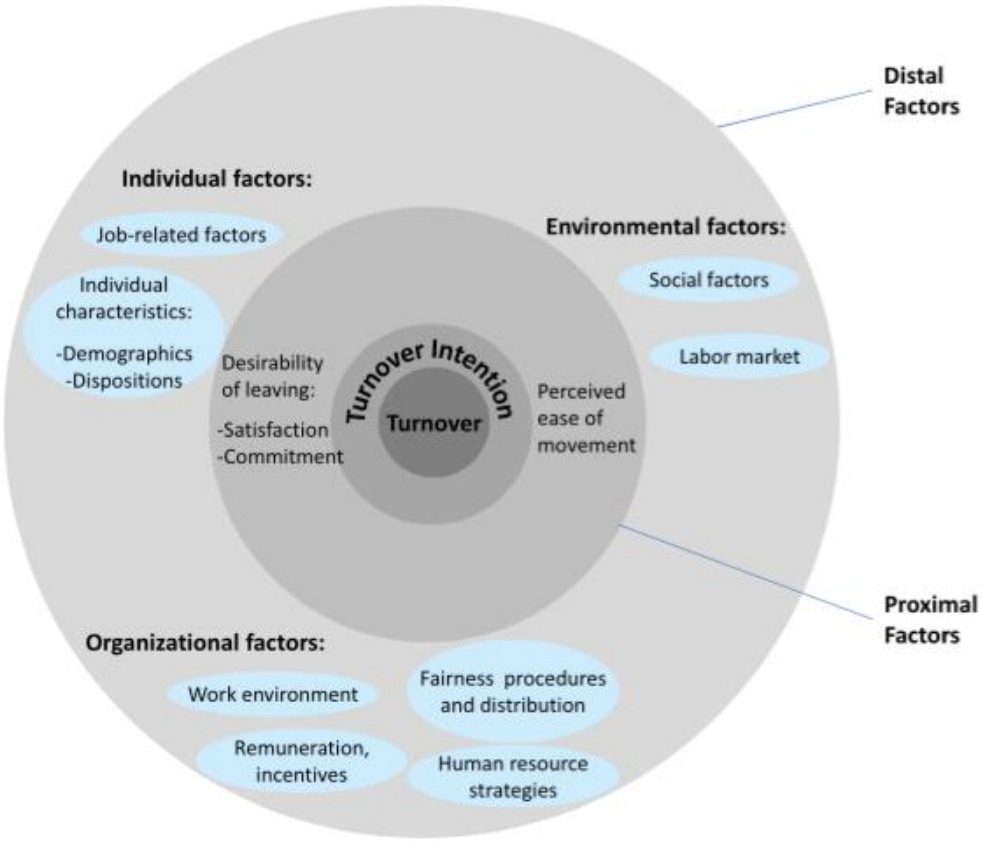
Maertz et al. (2012) proceeded to test the model and extended it to include a ninth force, that of location attachment. The authors tested how these factors effect organisational identification, work satisfaction, pay satisfaction, and location attachment in turnover intention. The findings confirm that the forces have an effect on turnover intention. The forces are summarised in Appendix 1 in the Appendices section.

2.2.4 Model based on Distal and Proximal Factors

Rather than being a single model, this category is made up a number of models that primarily seek to explain various factors that influece the decision to leave, including Rhodes and Doering's integrated model of career change (Rhodes & Doering, 1983).

A more recent model based on the approach of identifying factors that influence turonver intention and ultimately turnover is provided by Lo (2015). In this model, depicted Figure 2 below, a differentiation between distal and proximal factors is made. Distal factors are made up of three levels, namely environmental, organisational and individual. Proximal factors on the other hand include desirability of leaving, which is a factor of satisfaction and commitment, and perceived ease of movement (Lo, 2015; Mitchell & Lee, 2001).

Figure 2: Factors impacting voluntary turnover.



Source: Lo (2015)

The distal and proximal factors and the literature surrounding them are discussed further in section 2.3 below. Some researchers have extended on this body of work to also include spanning factors, i.e. those factors that are not confined to a single level. These include items such as psychological contracts, job embeddedness and social networks (Clark, 2006; Mitchell & Lee, 2001).

2.3 Reasons for Voluntary Turnover

Various reasons have been provided to explain why IT professionals voluntarily leave their organisations. Investigating the causes of turnover in general, Abbasi & Hollman (2000) list five areas that managers need to be aware of and take the necessary action to address any deficiencies. The factors noted are: hiring practices, managerial style, lack of recognition, lack of competitive compensation system, and a toxic workplace environment.

Looking specifically at the IT industry, the most prevalent reasons cited by researchers as influencing either the intention to leave, or the actual decisions to leave include: job

satisfaction, compensation, workplace relationships, role stressors (Abii, Ogula, & Rose, 2013; Guimaraes & Igbaria, 1992).

One school of thought argues that IT professionals have some distinct characteristics such as a strong need for growth and personal development, a high need for learning, and a strong desire for learning (Lee, 2000), as such if these needs are not met, they influence turnover. Lo (2015) however counters this view and observes that "*few concepts seem especially unique to the IT workforce profession*" p.411. and cites a number of literature from fields such as marketing, management, organisational behaviour and psychology where the concepts either stem from, or are applicable in these fields.

Lo (2015) provides an overview of the studies and findings grouped by environmental, organisational, and individual factors. These are summarised in Appendix 2 in the Appendices section.

2.3.1 The model on which this study will be based

The distal | proximal model will be used in this study. The model is chosen for its comprehensive nature and systematic analysis of the three levels of environment, organisation and individual. Aligning to Mele, Pels, & Polese's (2010) assertion that "*we are not able to fully comprehend a phenomenon simply by breaking it up into elementary parts and then reforming it; we instead need to apply a global vision to underline its functioning*" p.126.

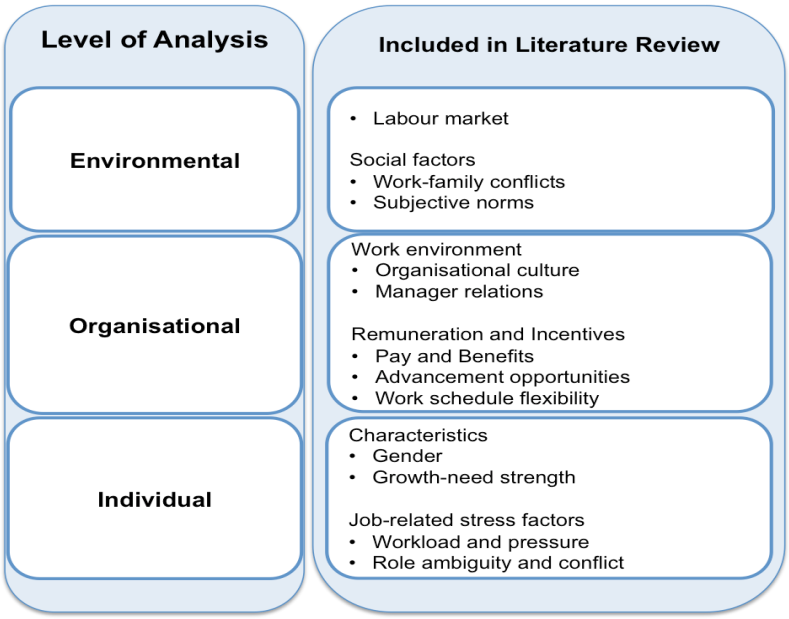
The objective is to test the model dipicted in Figure 2 above to determine the impact of the forces on actual turnover.

In this study, the factors that will be reviewed are:

- Environmental level – the labour market and the social factor of work-family conflict and subjective norms.
- Organisational level – the work environment, in particular the organisational culture and relationship with management. Under the remuneration and incentives, the pay, career advancement opportunities and work shedule flexibilty will be reviewed.
- Individual level – the growth need strength, perceived workload and role ambiguity will be reviewed in this level.

Since the study will be conducted on women who have voluntarily left the IT industry, the demographic characteristics that will frame the research are gender and education level. Figure 3 below provides a graphical representation of the factors that will be covered in this study.

Figure 3: The Turnover concepts included in the Literature Review



2.3.2 Environmental level factors

The environmental level is the context within which an organisation operates. The labour market and social factors will be covered in this section.

2.3.2.1 Labour market

In the context of IT professionals, with the rise of remote connectivity, the ability to perform one's job is no longer confined to a physical location. In addition, the skill portability of the global knowledge worker could also be another factor that ensures that employees are able to transfer between employers without necessarily being restricted by geographical location (Lamb & Sutherland, 2010).

While global mobility may be seen as a positive for the career of the individual, it may have different implications for organisations, as employees need not stay with a company purely because of the convenience of the location. The availability of offshore resources poses competition challenges (Quan & Cha, 2010).

2.3.2.2 Social factors

The social factors that will be discussed in this section are: work-family conflict and subjective norms.

2.3.2.2.1 Work-family conflict

Work-family conflict refers to instances where tension arises as a result of divergent demands between work and family responsibilities, and these demands impact women more than men (Ahuja, 2002). Armstrong, Riemenschneider, Allen, & Reid (2007) found that the pressures emanating from work were causes of stress for females, and were cited as reasons for deciding to leave the IT industry.

Ahuja, Chudoba, Kacmar, Mcknight, & George (2006) investigated turnover intentions for those IT professionals who spent a considerable time away from home, and found that work-family conflict was a significant source of stress for these professionals.

2.3.2.2.2 Subjective norms | stereotypes and biases

Lo (2015) specifies that subjective norms, or pressure to behave in a specific manner, influences a person's decision to remain in an organisation. For the purpose of completeness, stereotypes and biases, which are related to subjective norms, will be included in the review.

Despite a focus on improving diversity and gender representation, **biases and stereotyping** continue to be prevalent, and impact women at all stages of their careers – from career choice, to recruitment and selection and even in career advancement.

When investigating the role of gender bias and stereotyping at career selection stage, (Joshi & Schmidt, 2006) found that the stereotypes the promoted the masculinity of the Information Systems profession was prevalent among students. Cheryan, Master, & Meltzoff (2015) came to similar conclusions in the engineering and mathematics fields, and found that the stereotypes deter young girls from pursuing these fields as potential career choices. This is in line with Whitney, Gammal, Gee, Mahoney, & Simard (2013) assertion that "*there is a significant shortage of women at all stages of the pipeline, along with several barriers to retaining and advancing those women who do enter the field*" p.30.

Tienari, Merila¨inen, Holgersson, & Bendl (2013) found gender bias and stereotyping practices to influence hiring decisions. This was confirmed by Reuben, Sapienza, & Zingales (2014) who conducted an experiment that established that despite women performing as well as men on a mathematical task, the women were still discriminated against based on gender, and the level of discrimination was found to be directly correlated to the hiring manager's score on the Implicit Association Test (IAT).

Wood (2008) established that gender stereotyping of the management role continues to influence attitudes toward the appropriateness of women in senior management roles. Hoobler, Lemmon, & Wayne (2011) also uncovered a family-work conflict bias, which means that *"just being a woman signals to a manager that her family will interfere with her work, irrespective of whether or not that woman actually has family-work conflict, is married, has children, or has children of a certain age*" p.152. The existence of these discriminatory practices hinder the advancement of women in the workplace (Michailidis, Morphitou, & Theophylatou, 2012).

2.3.3 Organisational level factors

The organisational level factors that will be addressed in this section are work environment and remuneration and incentives.

2.3.3.1 Work environment

This section will discuss the organisational culture and management relations as contributors to turnover.

2.3.3.1.1 Organisational culture

The **culture of an organisation** is a contributor to the overall satisfaction of employees. Martins, N. & Martins (2003) define organisational culture as "*the basic pattern of shared assumptions, values and beliefs considered to be the correct way of thinking about and acting on problems and opportunities facing an organization*" p.498. Cultures that are characterised by male dominance, of which IT is one, are generally found to be overly competitive, do not value diversity, promote the exclusion of certain groups, and do not support the advancement of women (Wentling & Thomas, 2009), and these tend to experience high levels of turnover. In contrast, those organisational cultures that are classified as innovative and supportive tend to experience lower levels of turnover (Rigas, 2009).

Tapia (2006) conducted a review of three IT organisations, during the dot.com era that had hostile environments towards females, and the environment was find to be a key contributor to the women's decision to leave.

Research focusing on women's decision to leave has been conducted in traditionally male-dominated fields such as science, engineering, mathematics and higher education. Citing a vast body of research, and reaching the same conclusion in their own research, Archie, Kogan, & Laursen (2014) found that work-life issues and workplace climates are major influencers in women's decisions to leave.

2.3.3.1.2 Manager relations

A positive **relationship with the manager** has been found to reduce turnover intention (Tymon, Stumpf, & Smith, 2011).

Hunter, Tan, & Tan (2008) however found that the effect is moderated by country context, the authors found that employees in countries with low power distance, as per Hofstede's (1980) cultural model, expect relatively equal power sharing and equal rights with management than those employees from a country with a high power distance. This therefore means that, those employees from a country with a low power distance are less likely to remain in an organisation due to a positive relationship with their managers, while those employees from countries with a high power distance are more likely to be influenced into staying.

2.3.3.2 Remuneration and incentives

This section discusses the role that pay and benefits, advancement opportunities and work schedule flexibility play in turnover.

2.3.3.2.1 Pay and benefits

Pay and benefits include salary, and other incentives such as healthcare and pension schemes and have been found to be related to positive job outcomes and reduced turnover intentions (Lo, 2015). Hunter et al. (2008) found remuneration and benefits to be important to employees regardless of the country context, and further noted that the importance seemed more prominent in younger or new graduates. This finding is consistent with Guha & Chakrabarti's (2014) finding that higher salary was rated as the top reason for leaving an organisation in India.

2.3.3.2.2 Advancement opportunities

The presence of **career advancement opportunities** has been found to reduce turnover intentions, Kim & Wright (2007) confirmed this finding, and also associated the presence of career advancement opportunities with a reduction in employee exhaustion.

2.3.3.2.3 Work schedule flexibility

A lack of **work schedule flexibility** has been cited by women who have left their organisations as one of the reasons for their decisions to leave (Armstrong et al., 2007; Riemenschneider, Armstrong, Allen, & Reid, 2006).

2.3.4 Individual level factors

The individual level factors that will be addressed in this section are individual characteristics and job related stress factors.

2.3.4.1 Individual characteristics

This section investigates the impact that gender and growth need strength play in turnover.

2.3.4.1.1 Gender

In an investigation focused specifically on women in IT, Ahuja (2002) defined a life-cycle stage model of social and structural factors constraining women's careers in IT. At the early and mid-career level, social factors that inhibit women's success include social expectations and work-family conflict, while the structural factors include occupational culture and lack of role models. Women who are at an advanced stage of their careers find that the social factors that inhibit their progress are the informal networks while structurally, they are impacted by mentoring and organisational / institutional structure.

Evaluating the effects of gender on the career success of information systems employees, Baroudi & Igbaria (1994) discovered that "*even when controlling for the differences in human capital variables, women in IS still tend to be employed at lower levels of the organization, make less money, and have greater intentions to leave the organization*" p.181. Sumner & Niederman (2004) reached a different conclusion that there are little differences in the experiences of women and men in IT, that both genders experience the industry in similar manners, with the only notable difference being in salaries.

The impact of gender on the turnover decision has yielded mixed results, Lo's (2015) review of turnover literature found only one study, that of Thatcher, Stepina, & Boyle (2002) reported women as having a higher propensity to turnover. Other researchers, namely: Guimaraes & Igbaria (1992), Igbaria & Greenhaus (1992) and Sumner & Niederman (2004) did not find gender to have an influence on turnover. Recently, Elvira & Cohen (2014) found that women reported more of a willingness to stay when there were other women present in the organisation.

2.3.4.1.2 Growth need strength

The concept of **growth need strength** was introduced as far back as 1975 by Hackman & Oldham (1975) in diagnosing how jobs can be designed to improve employee satisfaction and productivity. The concept has been further utilised in understanding the drivers for turnover and motivation in IS employees and has been defined as the need for personal accomplishment, motivation and challenge, and learning and developing beyond the current level (Rigas, 2009).

2.3.4.2 Job-related stress factors

This section discusses the stress factors of perceived workload, role ambiguity and role conflict in the context of turnover.

2.3.4.2.1 Workload and pressure

IT professionals are perceived as having higher **work pressures** than those in other professions and this has been found to be a contributor to the high turnover rate in this field (Ahuja et al., 2006; Kim & Wright, 2007).

2.3.4.2.2 Role ambiguity and role conflict

Role ambiguity and **role conflict,** are also referred to as role stressors and were first introduced by (Baroudi, 1985). Kim & Wright, (2007) refined and expanded the work, defining role ambiguity as uncertainty about the goals and responsibilities of a role, and role conflict as a clash between what is expected and what one believes ought to be done. The presence of both stressors has been linked to an increase in turnover intentions, a decrease in job satisfaction and an increase levels of employee exhaustion (Guimaraes & Igbaria, 1992; Kim & Wright, 2007; Rutner, Hardgrave, & McKnight, 2008).

2.4 Literature Review Conclusion

This chapter provided a review of literature that focuses on turnover in the IT profession. During the review, it was found that existing literature predominantly focuses on turnover intention, and there is minimal work focusing on actual turnover. This study seeks to close this gap by focusing on actual turnover and providing a contextual view on the turnover of women in IT.

The review started off by providing an overview of the turnover models that have been used in past research. It was noted that nascent studies were primarily influenced by the work of March & Simon's (1958), whose focus was on organisational equilibrium. Subsequent models were primarily influenced by the work of Lee & Mitchell (1994), and the major model to come out of this work was the Unfolding Model. An overview of the model on which this study is based was then provided, the key points from this model was it's approach of segmenting the turnover reasons into the three major levels of environment, organisation and individual levels.

Work conducted by other researchers was synthesised and summarised in the following sections of the chapter, with a specific focus on the body of work that focused on IT professionals in general, and well as women in IT specifically. The comprehensive work conducted by (Lo, 2015) of reviewing dominant IT turnover literature was central to the basis of this study as it provided a reference point of key relevant preceding work.

Due to the extensive work already done, only some of the factors impacting IT turnover were inlcuded in the review, as reflected in Figure 3 in section 2.3.1. At the environmental level, this included: the labour market, work-family conflicts and subjective norms – a point that was primarily focused on stereotypes and biases. At the organisational level, the factors reviewed were: organisational culture, manager relations, pay and benefits, advancement opportunities and work schedule flexibility. And finally, at the individual level, the focus was on: gender, growth-need strength, workload and pressure, and role ambiguity and role conflict.

The next chapter presents the research questions as defined for the two phases of this study.

CHAPTER 3: RESEARCH QUESTIONS

The preceding chapter provided an overview of the extensive literature available on the subject of turnover. The fact that the existing body of knowledge is primarily focused on turnover intention rather than actual turnover was brought to light (Joseph et al., 2007; Lo, 2015).

The review also highlighted the contradictory findings that have been made with reference to the role that gender has on turnover (see (Elvira & Cohen, 2014; Thatcher et al., 2002) vs. (Guimaraes & Igbaria, 1992; Magid Igbaria & Greenhaus, 1992; Sumner & Niederman, 2004)), as well as the importance of context when analysis the effect of any factor on turnover. Within the South African context, Igbaria, Meredith, & Smith (1994) conducted a study that focused on the intention to stay. More recently, the research by Pretorius, Mawela, Strydom, de Villiers, & Johnson (2015) conducted shed some light on the challenges that women in IT face in the country. The novelty in this research is the focus on the women who have left the industry.

This chapter specifies the questions that will assist in answering the key question of why women are leaving the IT industry in South African organisations.

3.1 Research Questions

Phase I – Industry Experts

This phase aimed to achieve two objectives: Firstly to determine whether the specialists, in their recruitment drives, had observed a decline in the number of women in the IT industry in South Africa. Secondly to gauge what experts perceive as the reasons that are leading to women voluntarily leave the industry. This phase was conducted prior to interviewing the women that had voluntarily left the IT industry, and aimed to answer the following two questions:

> **Research Question 1:** What observations have industry experts made in terms of the representation of women in the IT industry?

> **Research Question 2:** What do the experts understand to be the reasons that women are voluntarily leaving the IT industry?

Phase Two – Women who have voluntarily left IT

Research Question 1: What are the environmental factors that contribute to women voluntarily leaving the IT industry?

Clark's (2006) investigation of why South African women are leaving senior positions did not find evidence of environmental factors that contributed to the women's decision to leave. This study seeks to identify whether this finding is applicable to the IT industry as well.

Research Question 2: What organisational level factors contribute to the decision to leave?

The interaction between the women who voluntarily leave and the organisations from which they leave is at the core of this study. Understanding the interaction between the organisation and the individual at this level is to key to providing the insights for all stakeholders.

Research Question 3: What individual level factors drive the decision to leave?

While the decision to voluntarily leave is made in the context of the environment and the organisation, the individual is the ultimate decision maker. By providing an airing platform to those women who have already made the decision to leave, not only will past decisions be better understood, but also the opportunity to understand potential future decisions is enhanced.

CHAPTER 4: RESEARCH METHODOLOGY

In the previous chapter, the research questions were outlined and confirmed the purpose of the study, which was to gain an in-depth understanding of the reasons that lead to women voluntarily leaving the IT industry and thereby understand how this contributes to the decline in the representation of women in the industry. This chapter describes the methodology that was followed in conducting the research.

4.1 Research method

The research was conducted using a qualitative approach. At the heart of qualitative research is the aim to "*understand how people make sense out of their lives, delineate the process…and describe how people interpret what they experience*" (Merriam, 2009, p.14). The study was grounded in an interpretive philosophy as it aimed to understand how women interpret their experiences in the IT industry, and also aimed to determine the meaning they attribute to their experiences, this makes the study inductive in nature.

4.1.1 Rationale for the methodology

Since the primary aim was to gain insights from the respondents, it is important that the dynamic and changeable nature of reality is kept in mind throughout the research, and according to Bryman & Bell (2011), qualitative methods allow for this dynamism in research.

Semi-structured interviews were identifies as best suited for gathering the data in this instance as they “assume that individual respondents define the world in unique ways” and the method allowed the researcher to “respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic" (Merriam, 2009, p.90).

4.2 Population and unit of analysis

4.2.1 Population

Women who left an IT career to either pursue a different career or leave employment altogether.

4.2.2 Unit of analysis

The decision to leave the IT career was analysed.

4.3 Sampling method and size

The most appropriate form of sampling for this study was non-probability sampling. In particular, purposive sampling, as it enabled the researcher to "*apply their judgement when selecting the sample*" (Saunders & Lewis, 2012c, p.138). For participants in Phase I the selection criterion was involvement in the recruitment of IT professionals. While the primary criteria used to make the selection for Phase II participants included, gender, education level and industry. Women who have a computer-related qualification, have experience working in the IT industry and have subsequently left the industry to pursue careers outside of IT were selected for the interviews.

Merriam (2009) warns that sampling selection made on this basis alone is "not very credible and is likely to produce "information-poor" rather than information rich cases"; to counter this, snowballing was also used as an additional sampling method. The respondents that were identified in the initial sample frame were requested to provide referrals to other potential respondents. Although this form of selection introduces homegeneity to the sample, it is acceptable in this case as it ensured that those interviewed meet the defined criteria required for the study.

The research was conducted in two phases – in the first phase a total of five industry experts were interviewed to obtain their observation around the voluntary turnover of women in IT. In the second phase, a total of nine women from private organisations and some who are no longer formally employed was conducted.

4.4 Data collection tool and method

As mentioned in the Rationale for the methodology section above, semi-structured in-depth interviews were conducted. This form of data gathering provided the researcher with the flexibility to determine the order of the questions that need to be asked when finding out information about topics (Saunders & Lewis, 2012a), while also allowing for an in-depth analysis of the phenomena being studied.

Prior to commencing with data collection, the researcher obtained ethical clearance from the institution; a copy of the approval letter from the institution can be found in Appendix 3. Where interviews were to be conducted with individuals from the same organisation, permission was sought from a representative manager; a copy of the permission letter can be found in Appendix 4. During the data collection period, all participants were requested to sign an informed consent letter; a copy thereof can be found in Appendix 5.

Most of the interviews were conducted in-person, with two (one in Phase I and another one in Phase II) being conducted via Skype, and each interview lasted about 30 to 45 minutes. The interviews were scheduled in advance with the respondents, were voice recorded and transcribed so as to enable an accurate analysis of the data. The interview guides for Phases I and II can be found in Appendix 6 and Appendix 7 respectively.

4.5 Data analysis

The primary output from the data collection phase were the data from the interviews in particular these included transcribed interviews and audio recordings. Hussey & Hussey (1997) provide an overview of the the three main challenges (i.e. reducing, structuring and detextualising) posed by qualitative data, they further propose a choice between quantifying and non-quantifying methods as a solution. The researcher used a non-quantifying method, as this method enables a deeper scrutiny of the data (Hussey & Hussey, 1997). In addition, the data was captured into categories or themes that captured recurring patterns that cut across the data (Merriam, 2009, p.181).

Analysis started while the data was being collected. According Merriam (2009), "*without ongoing analysis, the data can be unfocused, repititious, and overwhelming in the sheer volume…while data that have been analysed while being collected are both parsimonious and illuminating*" (p.171). The researcher thus employed an inductive and comparative analysis strategy whereby the data analysis was conducted in parallel to the data collection.

During this iterative collection and analysis, the researcher employed a combination of deductive and inductive coding approaches. Elo & Kyngas (2007) recommend the use of deductive content analysis where there is an existing body of knowledge framing the study.

For the deductive approach, the themes and codes were setup upfront using the literature as a guide. In particular, the reasons for turnover outlined in Appendix 2 were used as codes. In the first iteration, the interview transcripts were reviewed to identify the codes from this predetermined list.

The second iteration was done "in vivo", i.e. codes were identified as the transcripts were analysed. The interview transcripts were reviewed to identify additional codes that may not have been capture in the first round of deductive coding.

In the third and subsequent iteration codes were grouped into related concepts and themes. The codes from the first two iterations were used to classify information. Ultimately the relationships between the themes were identified through repeating the process of reading, analysing and coding.

A combination of manual and electronic tools, i.e. Atlas.ti, was used to organise and categorise the data. The manual analysis was done in the early stages of analysis and included reading through the transcripts to highlight key themes on the physical printout, and these were written in a notebook.

Thereafter these themes were captured on Atlas.ti and the resulting relationships were built on the software tool. This enabled ease of merging codes to formulate themes, and also ensured that recurring themes could easily be identified and referred to at a later stage. Another advantage of using the tool was that it enabled easier linking of codes to quotations from the participants, and finding the quotes and their linked codes became an easier to manage process later on.

4.6 Data accuracy

Merriam (2009, p.209) proposes that ensuring validity and reliability in qualitative research involves conducting the investigation in an ethical manner. The following section outlines the measures that were taken to address the potential concerns that could arise from a qualitative study.

4.6.1 Validity

In qualitative research, validity refers to whether the results are believable from the perspective of the participant and as such it is the participants themselves that can legitimately judge the credibility of the results (Trochim, 2006). To ensure the validity of the study, Merriam (2009) suggests requesting the respondents to validate the researcher's understanding of their views. The researcher did this by asking confirmation and clarification questions during the interviews.

4.6.2 Generalisability

Since one of the limitations of qualitative research is that it potentially cannot be generalised, the researcher ensured that the research is described accurately, and that the context and assumptions are explicit. According to Trochim (2006), these are some of the ways in which a researcher can attempt to assist those who wish to transfer the results to a different context.

4.6.3 Confirmability

Trochim (2006) defines confirmability as the “degree to which results could be confirmed or corroborated by others”. To increase confirmability in this study, the researcher performed continuous checking of the data as the data was collected.

4.7 Research assumptions

The key assumption made in the research is:

- Since the study focused on past events, it is assumed that the participants had an accurate recollection of their experiences.

CHAPTER 5: RESULTS

This chapter presents the results of the data collected and analysed using the approach outlined in the previous chapter. A two-phased approach of semi-structured interviews was taken with this study. In the preliminary phase, industry specialists were interviewed, and the second phase focused on the women that had voluntarily left the industry.

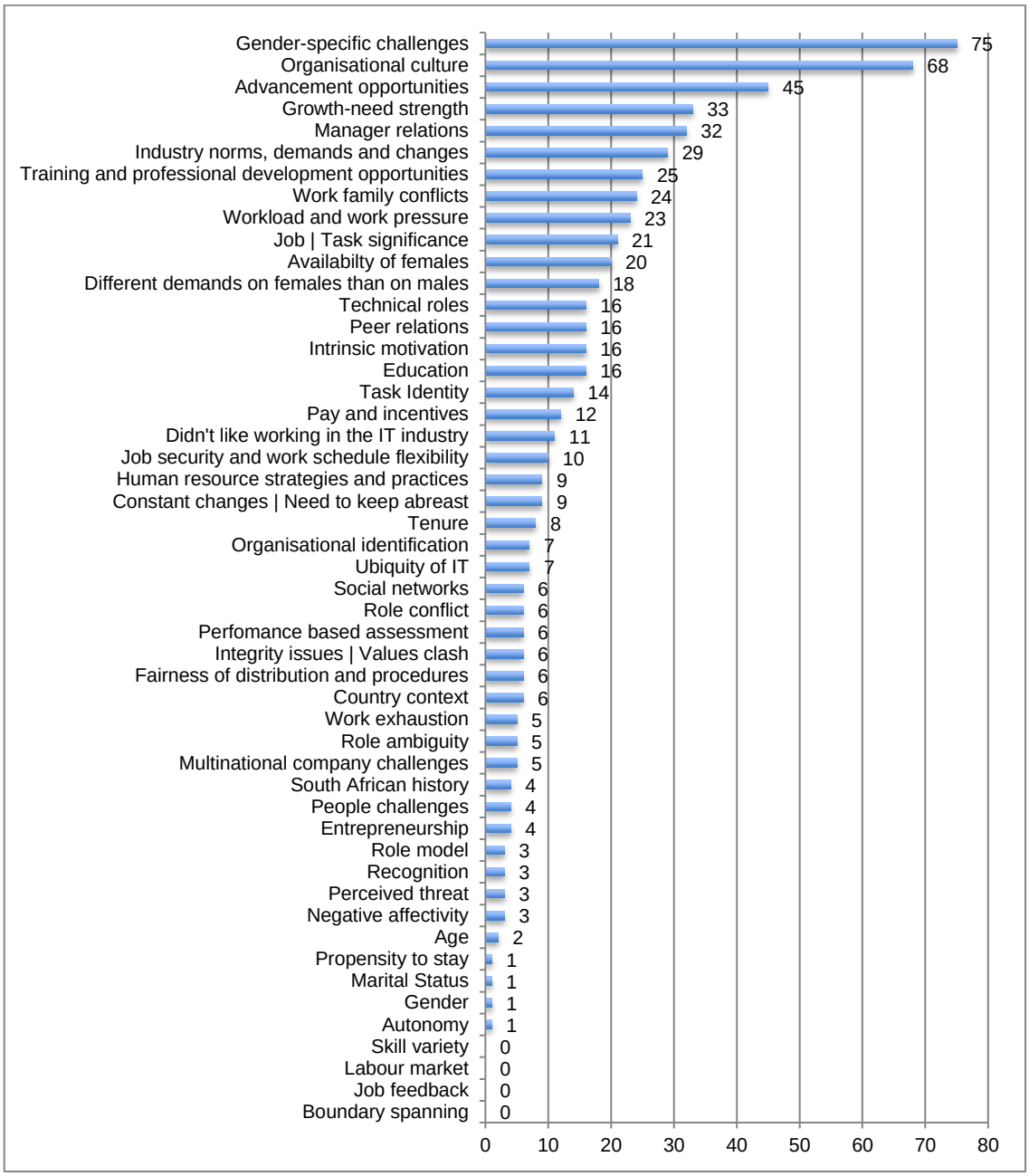
The results from the study are presented in the next sections. The first section provides an overview of all the factors that were found in the study, shown in Figure 4 below, this is then followed by the results from Phases I and II respectively. The results sections start off by providing an overview of the approach undertaken to conduct the analysis. Thereafter the profile of the participants is provided first, and finally the actual results are presented according to the research questions per phase.

The results for Phase I give the experts' opinions and observations on the factors that were the most recurring in the interviews. In the Phase II results, the factors are categorised into environmental, organisational, and individual levels, as aligned to the literature review conducted in chapter two. Where applicable, a graphical representation of the data is provided for ease of reference, and a narrative of each section is also included.

5.1 Overall Factors

The ranking of all the factors that were found in the study are shown in Figure 4 below. The top factors that were mentioned by the participants of the study, which are also discussed in various sections of this document, are: gender-specific challenges, organisational culture, advancement opportunities, growth-need strength, and manager relations. In the subsequent sections, these factors are further categorised and ranked in accordance with the research questions per phase. Participants identified with multiple factors, as such the relationship between participants and factors is one-to-many.

Figure 4: Ranking of all factors



5.2 Phase I

For this preliminary phase of the study, five participants were chosen using purposive sampling. The primary selection criterion was the individual's occupation; each participant was selected based on their experience and involvement in recruiting IT professionals. This phase aimed to determine whether the specialists, in their recruitment drives, had observed a decline in the number of women in the IT industry in South Africa.

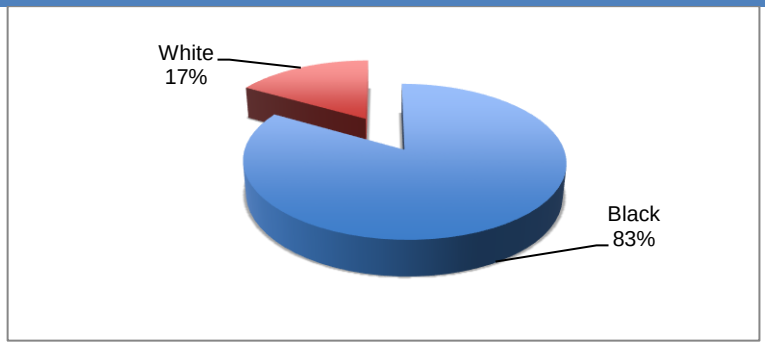
5.2.1 Profile of Phase I Participants

This section provides the demographics of the participants of Phase I. Firstly a view of the split of respondents by race is provided followed by a split by occupation.

5.2.1.1 Phase I participants by Race

Table 1 below indicates the split by Race of the five participants from Phase I. Four respondents were Black, equating to 83% of the sample, and only one respondent was White, which equates to 17% of the total sample.

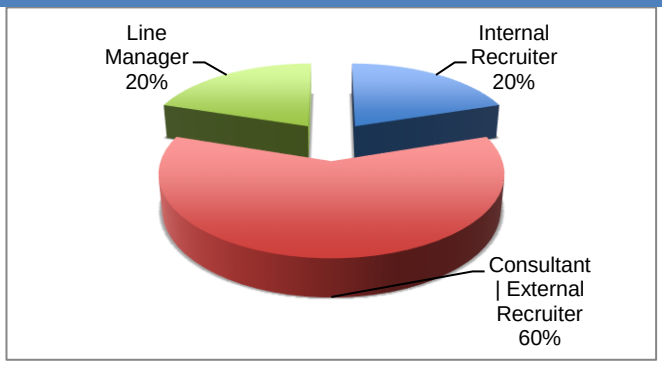
Table 1: Phase I Participants by Race

Race	No.	%	Graphical Representation
Black	4	83%	
White	1	17%	
Total	**5**	**100%**	

5.2.1.2 Phase I participants by Occupation

All the participants in Phase I are involved in recruiting IT professionals in some form. Table 2 below indicates that one person (20%) was an internally based recruiter, another one (20%) was a line manager and the remaining three (60%) were recruiters that were based at recruitment firms.

Table 2: Phase I participants by Occupation

Occupation	No.	%	Graphical Representation
Internal Recruiter	1	20%	
Line Manager	1	20%	
Recruiter in a Recruitment firm	3	60%	
Total	**5**	**100%**	

5.2.2 Phase I Results

As mentioned, the objective of this phase was to conduct a preliminary assessment to find out whether the decline in women in IT was observed by those who are directly involved in the recruitment and placement of IT professionals.

The questions that this phase aimed to answer are:

> **Phase I Research Question 1:** What observations have industry experts made in terms of the representation of women in the IT industry?
>
> **Phase I Research Question 2:** What do the experts understand to be the reasons that women are voluntarily leaving the IT industry?

Since the focus of this phase was to gain expert opinion on the current state of women representation in the IT industry, an inductive approach was followed in analysing the data. No pre-existing codes or themes were used when the responses were analysed. The observations from the experts are summarised in quotations in the section below.

5.2.2.1 Phase I Research Question 1 – What observations have industry experts made in terms of the representation of women in the IT industry?

The participants observed that, although there are women in the industry, the saturation is only in certain types of roles, generally referred to as non-technical, such as Business Analyst, Testers and Project Managers. However in the technical (such as Solutions and Enterprise Architects) and senior roles (such as Chief Information Officers (CIOs), representation is poor.

The participants had the following to say:

> *So there's quite a lot of women actually…but there's more of them in Business Analyst and* (silence) *from an Architect point of view – Solutions Architects as well as Enterprise Architects – there's definitely very few, if there are they are quite few. So I seem to find that more and more are in the business analysis.* [Phase I, Participant 5 (Line Manager)]

> *What I have noticed is that we are recycling the same candidates and we are finding that there are no new candidates; particularly as far as CIOs are concerned.* [Phase I, Recruiter 3, commenting on the availability of female executive candidates]

> *I think with females there is a gap in succession planning – the senior managers are not necessarily groomed to move into the executive positions.* [Phase I, Recruiter 3]

Only one participant noted no shortage of women without distinguishing between roles or levels.

> *I wouldn't say there's a shortage. Definitely I wouldn't say there's a shortage I'm seeing more and more there's lots of females in the IT industry.* [Phase I, Recruiter 2]

With regards to the demand for women, the participants seem to agree that the demand is there.

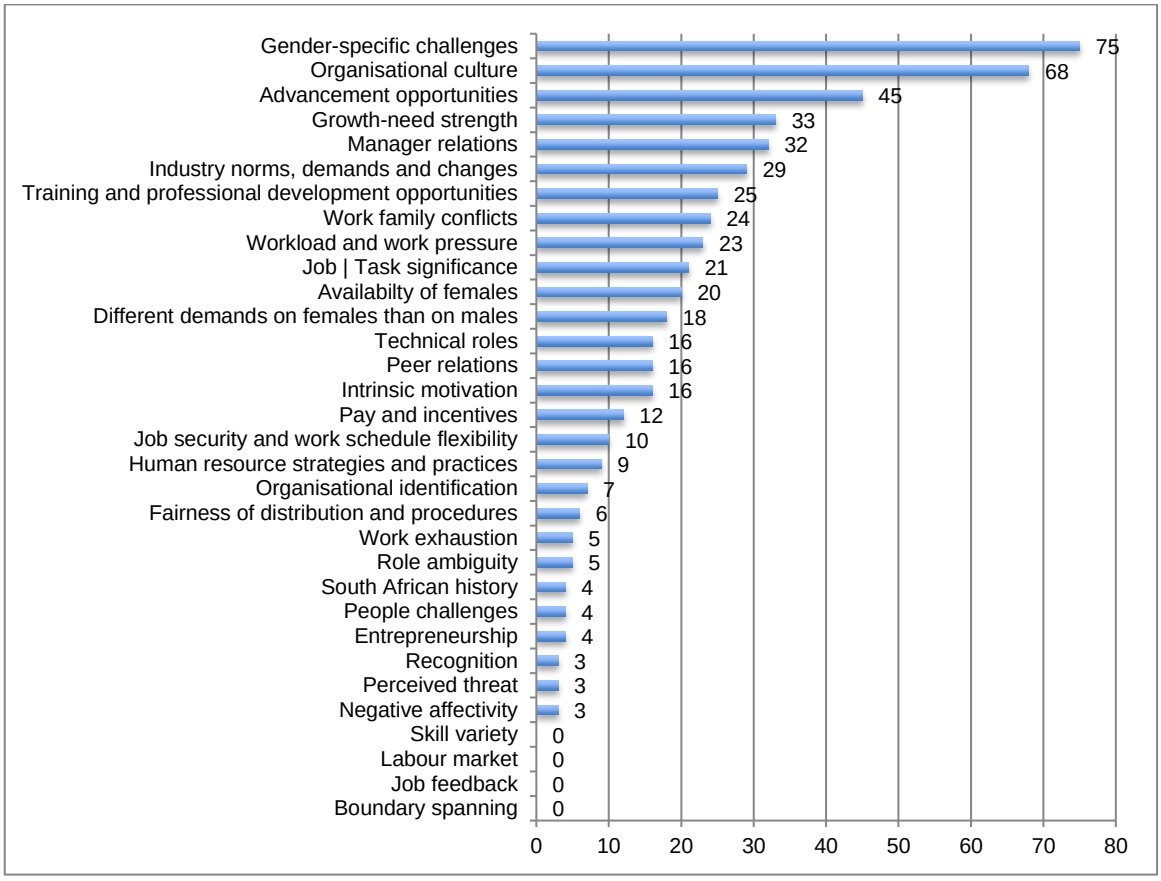
> *So if we interview people we say "Listen, get yourself geared up into the IT industry because that's where the demand is".* [Phase I, Recruiter 1]

> *Oh yes, the demand is there. If you then add the element of transformation – gender and colour – there is a demand for females. The challenge is that we struggle to meet the demand. What we end up having to do is add ACI (African, Coloured, Indian) as a fall back.* [Phase I, Recruiter 3]

5.2.2.2 Phase I Research Question 2 – What do the experts understand to be the reasons that women are voluntarily leaving the IT industry?

The ranked codes, representing all the factors that were mentioned by the Phase I participants are presented in Figure 5 below. The figure shows that the top five factors are: gender-specific challenges, organisational culture, advancement opportunities, growth-need strength, and manager relations. This is consistent with the overall factors presented in section 5.1 above.

Figure 5: Rank and occurrences of factors mentioned by Phase I participants



The top five factors from the Phase I participants are discussed in the following section.

5.2.2.2.1 Gender-specific challenges

This category incorporates a range of issues, such as subjective norms, that women seem to encounter in their careers. This includes the male dominance of the industry and the challenges this sometimes poses for females and the occurrence of stereotyping and biases.

5.2.2.2.1.1 Male dominance

It was interesting to observe that the concept of male dominance was still a recurring theme, despite some of the comments being made about the availability of women.

> *I've noticed the people that they've shortlisted I think they are males, most of them…they are males.* [Phase I, Recruiter 1, commenting on the candidates that were shortlisted by a line manager in a particular business unit]

5.2.2.2.1.2 Stereotypes and biases

The persistence of stereotyping and biases was a recurrent theme that was noted as a reason that led to women leaving. Some of the stereotypes are highlighted below:

Women are emotional (and this is viewed as a weakness)

> *And already there, the fact that women are empathetic, they show emotions…that on its own is seen as a weakness. It just becomes a weakness – how can we trust this person who would just now cry and break down, so that works against…so it creates that perception.* [Phase I, Participant 5 (Line Manager)]

Men and women have different abilities, responsibilities and work ethic

> *I just think it's a women's thing. You can think out of the box. You work harder. You've got the self-motivation. And I don't think men always do have that.* [Phase I, Recruiter 1]

> *I think females make better project managers than males. Again because of being detailed and organised, I think it's purely based on being organised.* [Phase I, Participant 5 (Line Manager)]

> *They* (males) *don't have the same responsibilities as we do at home. They come into work; they don't have to worry about helping with homework. Yes, they've got families but they're not as involved in raising that family.* [Phase I, Recruiter 2]

Below is a general comment on the prevalence of the gender-specific challenges:

> *You can still leave and go to another bank; you'll still experience the same things because you're a woman.* [Phase I, Recruiter 2]

5.2.2.2.2 Organisational culture

The significance of the organisational culture is apparent from the code rankings in , and manager relations. This is consistent with the overall factors presented in section 5.1 above.

Figure 5 above. The participants noted that there is still a prevalence of organisational cultures that are not supportive of women.

> *I remember the one, at one stage, one of the ladies that I had in the team she literally broke down after the meeting, after the session, literally broke down in tears because of just being frustrated with one difficult stakeholder.* [Phase I, Participant 5 (Line Manager)]

> *Women have got this mountain to climb; women have to work twice as hard to prove (themselves)…*[Phase I, Participant 5 (Line Manager)]

While the value of gender diversity and advancement of women seems to be generally acknowledged, understanding and embracing the changes required to achieve the parity does not seem to have permeated all the required levels as yet, as observed by one participant:

> *I think with females there is a gap in succession planning – the senior managers are not necessarily groomed to move into the executive positions.* [Phase I, Recruiter 3]

There was also an acknowledgement of the effort that some organisations are making to create a supportive environment for women.

> *I do find that there are, I mean I can't speak on behalf of the all organisations but the ones that I've been exposed to, they have programmes like women in leadership and IT, women development programmes just to try and up skill women and bring them up to speed.* [Phase I, Participant 5 (Line Manager)]

> *When a company seeks diversity in the ranges of people* (that it employs) *then obviously it will improve* (women representation). [Phase I, Recruiter 1]

The statement below captures the link between organizational culture and the role of the manager (a topic that will be discussed in section 5.2.2.2.5):

> *For me the key thing is always the environment, and the environment is created by the management team, which can be one or two managers but the entire team is responsible for creating a climate and an environment that's conducive* (to supporting women). [Phase I, Participant 5 (Line Manager)]

5.2.2.2.3 Advancement opportunities

The need for advancement and growth came up as an important contributor to decision to either stay or leave an organisation. The participants' comments on the matter are summarised below:

> *I still think it's difficult to be a female in any industry because you're constantly trying to prove yourself, and the recognition is very important. That was one of the things* (that we found) *in the research that we did for sourcing candidates...recognition was very important for females. That's what the study actually found, they want to be recognised.* [Phase I, Participant 2]

> *I don't want to be here* (just) *because you need that representation, for BEE or* (for) *a female accreditation perspective, "Am I really adding changeable value?"…because I think the times have changed, where people were comfortable to be paid that pay cheque, they want to make an impact.* [Phase I, Participant 4]

> *These are people that* (are) *not necessary only looking at money as the only motivator, they look at other factors as well. "Am I being respected, is my voice heard,* (is) *there room for development for me as a person in this environment?"* [Phase I, Participant 5 (Line Manager)]

5.2.2.2.4 Growth-need strength

The growth-need strength is linked with the previous factor. The highly ambitious nature of the females was repeatedly mentioned and it is aligned with their need for career advancement as discussed in the preceding section.

> *If I interview people, I always say your best option is to go into the IT industry because, I mean, that's where the demand is, that's where the money is. And, yeah, they take it, some women that are dynamic will say "Yes definitely, that's what I want to do".* [Phase I, Participant 1]

> *People ask those questions, "(Why) am I here? Am I making value? Because I think it's an important time when you want to be dynamic and you want to grow.* [Phase I, Recruiter 4]

> *Definitely, the knowledge workers are not about, "you pay me well, yes to some extent that plays* (a role), *but after a while, after six months, a person gets used to the money that you pay them, and now they start looking for other things; fulfillment in their career, to say "okay what's next?"* [Phase I, Participant 5 (Line Manager)]

5.2.2.2.5 Manager relations

The importance of the role that is fulfilled by the line manager, and the potential contribution that role makes in the decision to either stay or leave the organisation is summarised by the statements below:

> *If you feel that your leader is not enthusiastic and he's not engaging. Because you need someone who's obviously going to be engaging and he's going to challenge you.* [Phase I, Recruiter 2]

> *I've worked with females that have been quite ambitious…Now if you are working with a manager that doesn't create that environment or that doesn't facilitate* (the career advancement) *that's when you find someone moving on.* [Phase I, Recruiter 4]

> *I wanted to say something…on the support from manager's perspective. Because we had this conversation just yesterday with a client, and I've said in the past, that people don't necessarily leave companies, they leave managers and that's what businesses need to be aware of.* [Phase I, Recruiter 4]

5.3 Phase II

In the main phase of the study, a total of nine women were interviewed. The women were selected using purposive sampling; the key selection criterion was women who had voluntarily left the IT industry at any stage in their career. The initial participants were then requested to provide referrals to other women who had also voluntarily left the IT industry, leading to a snowballing selection method.

This section of the document details the findings from the interviews with the women who had voluntarily left the IT industry. The profile of the participants will be provided first, thereafter the results from the research questions outlined in chapter three will be presented.

5.3.1 Profile of Phase II Participants

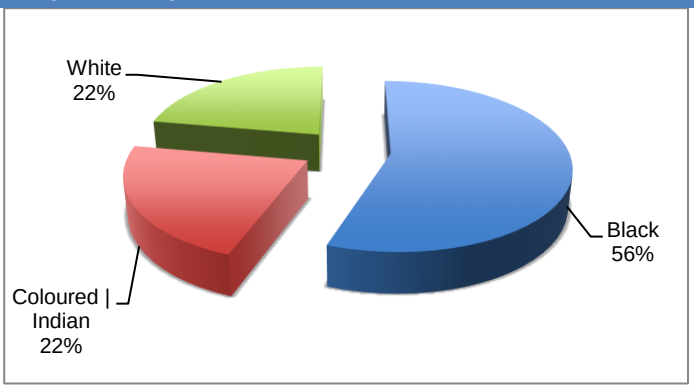
The profiles of the women who participated in the study are outlined the next section. The demographics include a view of respondents by race, highest level of education, level in organisation (at the point of existing the IT industry), number of years out of IT and finally, current role.

5.3.1.1 Phase II participants by Race

As can be seen from Table 3 below, five participants were Black, with an equal split, of two each between Coloured | Indian and White females.

Table 3: Phase II participants by Race

Race	No.	%	Graphical Representation
Black	5	56%	
Coloured | Indian	2	22%	
White	2	22%	
Total	**9**	**100%**	



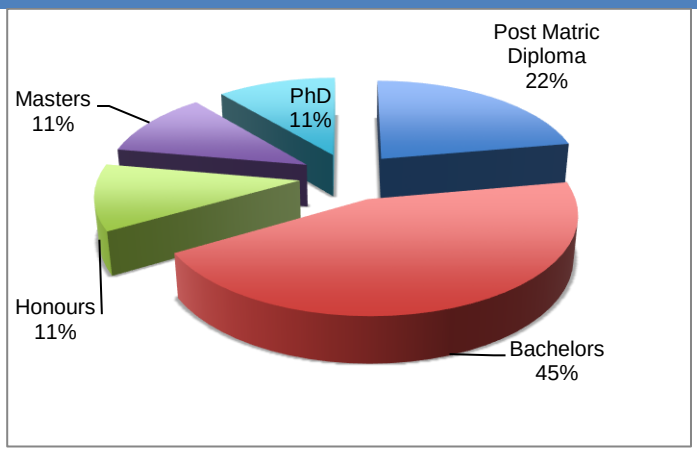
5.3.1.2 Phase II participants by highest level of education

Table 4 below indicates the split by highest level of education of the nine participants from Phase II. All the participants had some form of post Matric education, two had a Post Matric Diploma, four had a Bachelors degree, and one female each had an Honours, a Masters or a PhD qualification.

Table 4: Phase II participants by highest level of education

Highest level of education	No.	%
Post Matric Diploma	2	22%
Bachelors	4	44%
Honours	1	11%
Masters	1	11%
PhD	1	11%
Total	**9**	**100%**

Graphical Representation



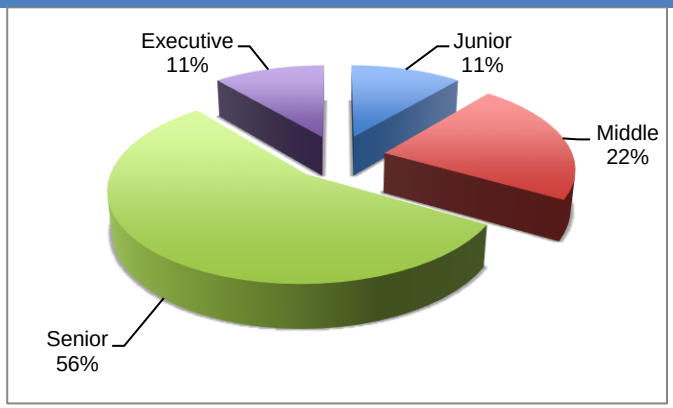
5.3.1.3 Phase II participants by level in organisation

Table 5 below depicts the participants' level in the organisation at the time that they left the IT industry. Five of the women were at a senior level in their organisation at the time they exited the industry. Two were at the middle management level, and one woman each represented the Executive and Junior levels.

Table 5: Phase II participants by level in organisation

Level in organisation	No.	%
Junior	1	11%
Middle	2	22%
Senior	5	56%
Executive	1	11%
Total	**9**	**100%**

Graphical Representation



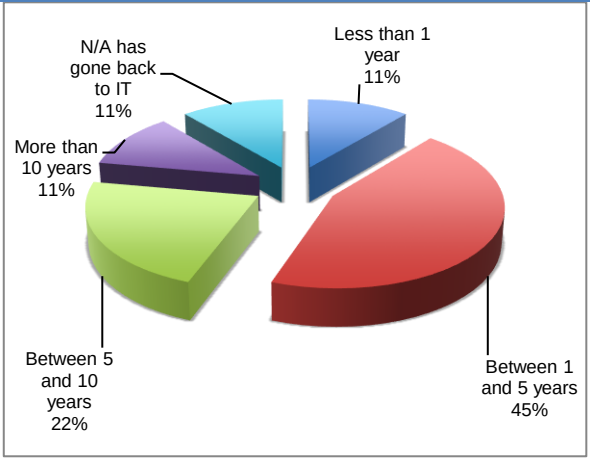
5.3.1.4 Phase II participants by number of years out of IT

Table 6 below depicts a split of the participants by the number of years that they have been out of IT.

Table 6: Phase II participants split by number of years out of IT

Number of years out of IT	No.	%
Less than 1 year	1	11%
Between 1 and 5 years	4	44%
Between 5 and 10 years	2	22%
More than 10 years	1	11%
N/A has gone back to IT	1	11%
Total	**9**	**100%**

Graphical Representation



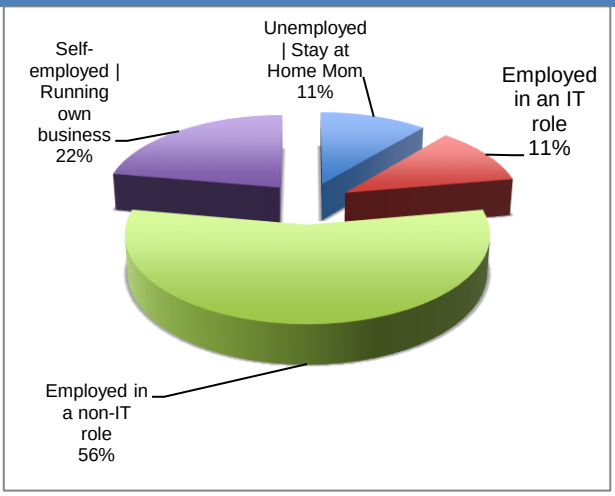
5.3.1.5 Phase II participants split by current role

Table 7 below shows a categorisation of the Phase II participants by the role they currently hold, i.e. after leaving the IT industry.

Table 7: Phase II participants split by current role

Current role	No.	%
Unemployed | Stay at Home Mom	1	11%
Employed in an IT role (i.e. subsequently went back to IT)	1	11%
Employed in a non-IT role	5	56%
Self-employed | Running own business	2	22%
Total	**9**	**100%**

Graphical Representation



5.3.2 Phase II Results

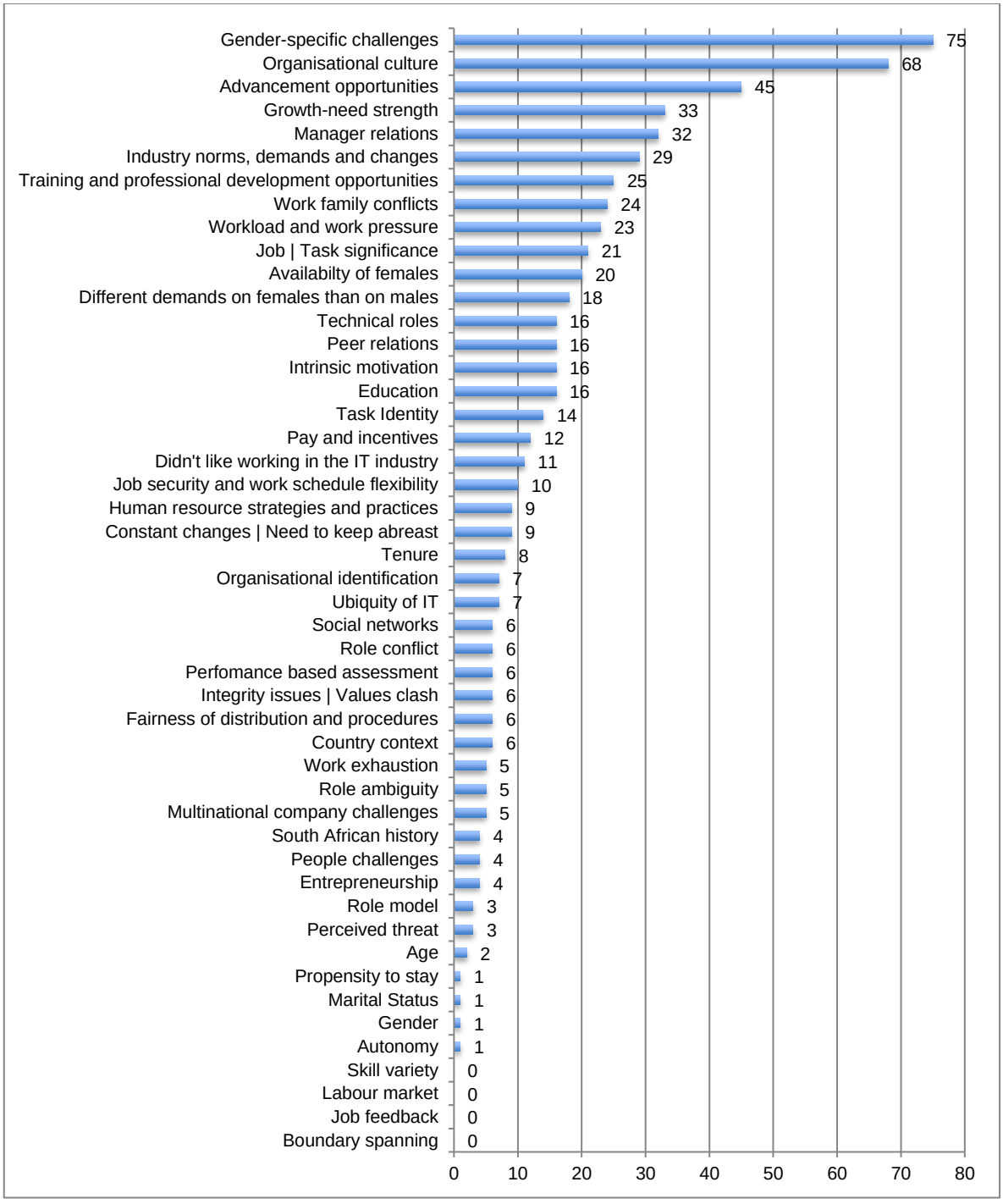
This section presents the results from Phase II. The responses from each participant were analysed and coded. A combination of deductive and inductive analysis was employed in a number of iterations of content analysis. In the first rounds, the interview transcripts were reviewed with a predefined code base to identify any codes that fitted into existing concepts from the literature. Subsequent rounds of analysis were conducted inductively and any codes that did not fit into the existing code frame were identified. After a number of iterations, these two sets of coded were merged to form themes.

The research questions that were posed in this phase are:

> **Phase II Research Question 1:** What are the environmental factors that contribute to women voluntarily leaving the IT industry?
>
> **Phase II Research Question 2:** What organisational level factors contribute to the decision to leave?
>
> **Phase II Research Question 3:** What individual level factors drive the decision to leave?

All the factors mentioned by Phase II participants are shown in Figure 6 below. The figure shows that the top five factors are consistent with those presented in the overall results section, as well as those mentioned by the experts in Phase I. The factors are: gender-specific challenges, organisational culture, advancement opportunities, growth-need strength, and manager relations.

Figure 6: Rank and occurrences of all factors mentioned by Phase II participants

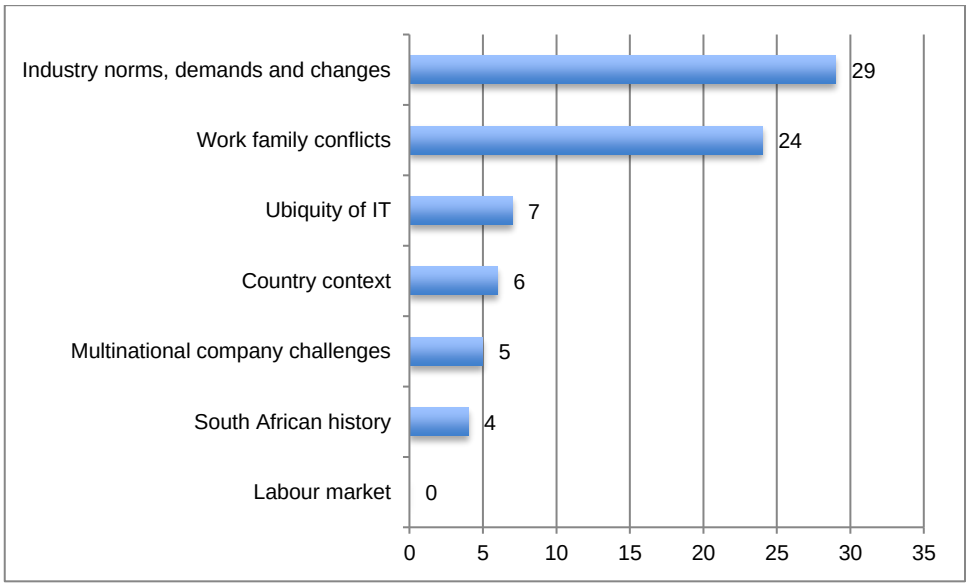


In this section, the factors are presented per research question. The factors are further categorised into the three levels of environmental, organisational and individual factors. The top factors in each level will be discussed as follows: section 5.3.2.1 will address the environmental factors, section 5.3.2.2 will discuss the organisational factors, and the individual factors are discussed in section 5.3.2.3.

5.3.2.1 Phase II Research Question 1 – What are the environmental factors that contribute to women voluntarily leaving the IT industry?

The factors that influence the voluntary turnover of women from the IT industry, as per the findings from the research are outlined in Figure 7 below. The top three ranked factors are: industry norms, demands and changes, work family conflicts and the ubiquity of IT, and are discussed in the next section. It is interesting to note that labour market, although listed in the literature, was not mentioned at all by the respondents.

Figure 7: Rank and occurrences of environmental level factors



5.3.2.1.1 Industry norms, demands and changes

Although the changes and progress that have been made in the industry were acknowledged by some of the women, the continued male dominance was repeatedly mentioned in the interviews. One respondent explained it as follows:

> *I think in terms of respect and all of that, I think that's changed dramatically. So you don't find that apprehension anymore. So even though it's still male orientated. The*

apprehension in having you as a colleague is much less. So I think, it kind of has equalised, but I still think it could be a scary factor. You know, if you're a woman and you walk in, and it's predominately males. You do tend to think twice before you will raise something. [Phase II, Participant 2]

The same person proceeded to say:

(IT is a) *very male dominated industry, I think to this day. It still tends to be very male dominated. Which can be a good thing or a bad thing. So it can be a challenge, because as a female you need to prove yourself, probably more so than your male colleagues would need to.* [Phase II, Participant 2]

Other respondents made the following comments regarding the industry:

Firstly, IT is not for everybody. There are certain things that you need to be aware of before pursuing an IT career. I remember that I have always been the only female most of the time; even in class I would find that I was the only girl among a group of guys. The industry is very male dominated. [Phase II, Participant 3]

It's so unfair to think that we have to do more than guys in order to have the same and be on the same level. So it almost becomes necessary that we work harder and we be more educated and we be better at our jobs than everyone that's on the same level as us. It's unfair but it's reality, it just seems to be reality that if you're a woman you have to work so much harder to get that respect from everyone else, especially if it's a male dominated industry...than if you are a guy, you know. [Phase II, Participant 5]

5.3.2.1.2 Work family conflicts

The workload and pressures associated with the industry, and their impact on work-life balance and the family came up a consistent theme among the respondents. Some of the things the women had to say are:

I worked with a team in the USA and India. They started their day at 5pm SA time, so I would have to work longer hours. I found that I did not have time to assist the kids with homework, and sometimes we had to work during weekends…I actually thought I was just taking a break, primarily to focus on the children and reach some kind of work-life-balance, but I haven't gone back. [Phase II, Participant 1]

There are long hours, so balancing family life as a mother, I found really challenging. And I guess that has to do with the culture. There is no nine-to-five when you are in IT. Things happen at seven, or eight, or nine. And you have to be there if things run over and you have to stay there until it is fixed. [Phase II, Participant 2]

I think it was very unbalanced. I think being in IT is quite an unbalanced lifestyle. You know, you find yourself working under extremes of pressure and that doesn't matter what role you're in, whether you're a programmer, whether you're BA, whether you're a project manager. [Phase II, Participant 6]

5.3.2.1.3 The ubiquity of IT

An interesting concept that came up with the Phase 2 respondents was the ubiquity of IT. A few of the participants noted that it is difficult to completely leave the industry, as technology is now such a fundamental requirement to doing business. One lady made the following comment on the persistence of IT:

Actually, someone was telling me that you need to look at the job you have, that job may not exist in 10 years time; it's more the technical skills that will be in demand. As much as some of us moved from technical into more business, there's maybe other people who need to move into more the technical side. [Phase II, Participant 8]

When asked how long she has been out of the IT industry, one person responded as follows:

Well, it's an interesting question because, you know, what does one mean by "out of IT"? [Phase II, Participant 6]

Another had a similar reaction to the same question, and their response was:

Not completely, so I've left the corporate sector, but not necessarily out of IT. I run a small business, I guess you could say I'm outside. [Phase II, Participant 9]

Two of the participants had a number of iterations where they left the industry, went back, and left again. One lady described her experience as follows:

I started in IT then I left, and then I came back, and now I'm out again. [Phase II, Participant 7]

One woman had left the industry, to start her own business, and the time of the interview had decided to go back. She described her experience as follows:

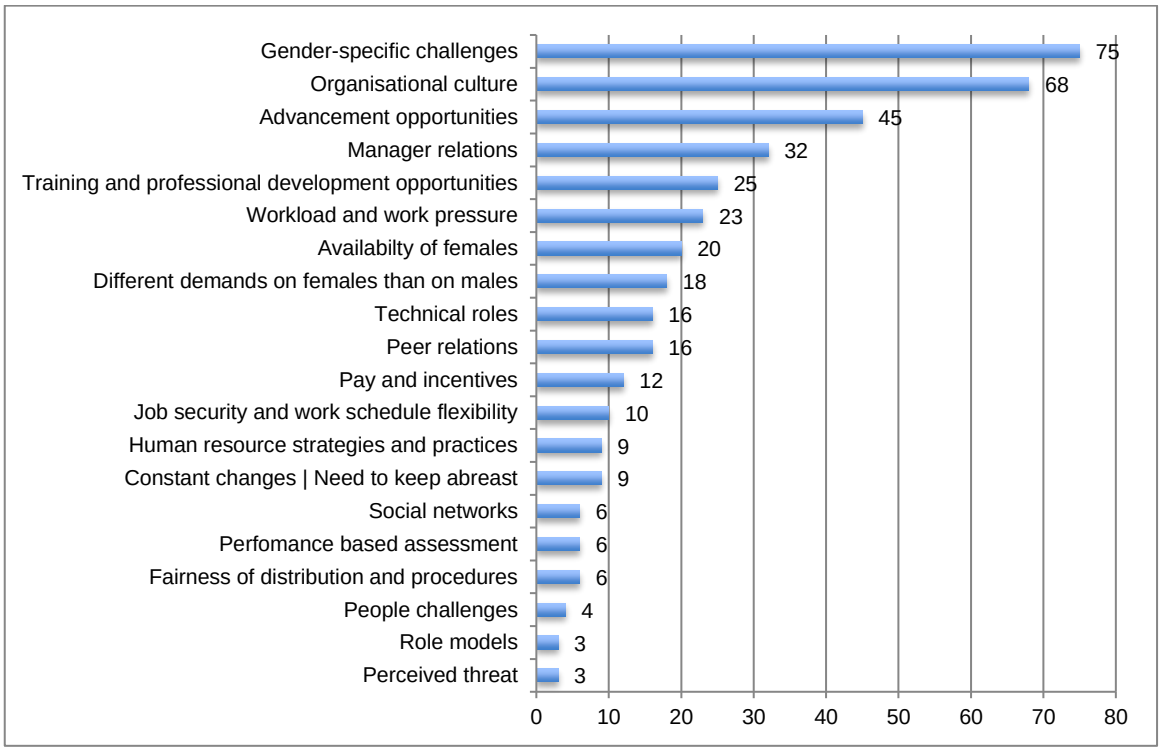
I felt that I needed to do something for myself, and I wanted to test whether I can run anything so I went into construction. I thought that my project management experience had equipped me to manage any project and I felt I could even move into the engineering environment.

There were things I was not equipped for. Like the managing of your own business, as well as some things that are associated with the industry, like the strikes. I found it to be very stressful, the co-ordination of people and managing of conflict was not easy. So I went back to the private sector, back to IT. [Phase II, Participant 3]

5.3.2.2 Phase II Research Question 2 – What are the organisational factors that contribute to women voluntarily leaving the IT industry?

The dominant themes at an organisational level are presented in Figure 8 below, they are consistent with those discussed in section 5.2.2.2 above on the responses from the Phase I participants. The top four factors, which will be discussed in the next section are gender-specific challenges, organisational culture, advancement opportunities, and manager relations.

Figure 8: Rank and occurrences of Organisational level factors



5.3.2.2.1 Gender-specific challenges

Confirming the views of the experts in Phase I, the females in Phase II had a lot of experience with gender-specific challenges at the work place. Some of the stories they relayed are:

> *So we got in contractors from India, and well here we use of a lot of those contractors for a lot of the IT applications. And, uh, I don't know, I felt as though the guys tended to only want to speak to him* (Rajesh, South African Indian male) *and if we had other males on the teleconference they would sort of want to speak to them instead of me. And it would be like "Who is this woman now that we're speaking to?" A few years ago as well with the exact same thing, it was on the *Aurora* project and you could see that you were sort of just this person that just sat at the table, and it was these guys that were driving this conversation.* [Phase II, Participant 4]

And I'm talking from the point of view of a user, you know. So in our LAN admin team we've got…there's probably about 12 or 15 people in the department, and I think one of them is a lady. And there would…if she comes out to help us, there always seems to be this, this view point that "Ag gosh not her, you know she doesn't know anything".
Yes she knows just as much as everyone else, and they might all not know, but if it's her that doesn't know then it's like ten times as bad as if it's one of the guys that don't know. So then it ends up being that she's not knowledgeable yet she is just as knowledgeable as everyone else, but then because she is a lady, I think people think "Oh no she doesn't know what she's doing". So I think definitely there's a perception out there…[Phase II, Participant 5]

I'm not sure, I stand to be corrected, but there's always the unconscious discrimination, things that are not done blatantly. I don't even feel it's limited to the IT profession, where certain people would always get promoted before anybody else...and no offense, it's normally certainly the guys. [Phase II, Participant 8]

5.3.2.2.2 Organisational culture

As previously mentioned, the organisational culture was the highest ranked factor in the entire study. A major theme was the companies' apparent lack of full commitment to diversity. The respondents from Phase II had the following comments about the contribution that organisational culture made in their decision to exit the IT industry.

I think companies have a general issue with diversity and I think trying to focus on IT specifically is going to be quite challenging for them because I don't know that a lot of South African companies really generally understand the value of diversity full stop. I still get a feeling that it's a numbers game but I wouldn't be interested in having things supporting my career just because they're trying to get their numbers right. [Phase II, Participant 6]

I don't think companies are doing it consciously (improving diversity) where it's a priority for them. Usually if there's a vacancy they look at who's available and who has the talent. When I was working for a certain company, all the developers were male the females were only in testing. The skill that was required in the system that was used is scarce and only the guys had that skill, there is no effort to get females trained up in that specialist skill. [Phase II, Participant 8]

There were also some positive comments made about the efforts that some organisations are making, as articulated by this respondent:

Those that I've worked with are (making an effort to create a culture that support women). *Because it has to be deliberate, I think it has to come from the top as much as being*

something that the entire company agitates for. And it really is about the culture that we create in organisations to nurture people and groom their skills, understand their leadership aspirations and support these. [Phase II, Participant 9]

5.3.2.2.3 Advancement opportunities

Echoing and confirming the views from the experts, the women repeatedly indicated that the existence advancement opportunities played a key role in their decision to leave.

So it was an opportunity to have strategic thinking on and actually make changes, implement new things. [Phase II, Participant 1, commenting on their decision to leave IT]

In the end it was opportunity (that made me decide to leave)*, I think there was very little scope for growth within the department* (I was in). [Phase II, Participant 5]

I decided I wanted to change fields...but in researching what I wanted to do the opportunity that I got was to join a management consultancy. So I used the IT background to make the shift. [Phase II, Participant 6]

5.3.2.2.4 Manager relations

The female participants echoed the experts' views that the role of the manager is crucial in the decision to either stay in or leave an organisation.

My line manager was making commitments that we could not meet and that led to resource constraints. You know it matters what kind of line manager you have – some people want to shine at the expense of others – and they put you under pressure, you have to do everything to squeeze in what they want. [Phase II, Participant 1]

And even after I did my business analysis diploma I found it difficult to get into that field, even within the company because they wanted so much experience. So I was given an opportunity (by my manager) *to start doing business analysis on the system side for all our enhancements for the system that I was a system administrator for, and that I think helped as well.* [Phase II, Participant 5]

My CEO was the type who believed he was always right, except when one of the geeky guys challenged him, then he would back off and understand. But when I challenged him – and you know sometimes you know something is right and you're challenging that, but it's like "what do you know, you're at this level let's refer back to Dawie (a white male colleague), and he'd say "so Dawie, what's your point, what's your view?" So I'd think "what's the point of being the room if I'm being blatantly ignored even though I have the knowledge and experience?!" [Phase II, Participant 8]

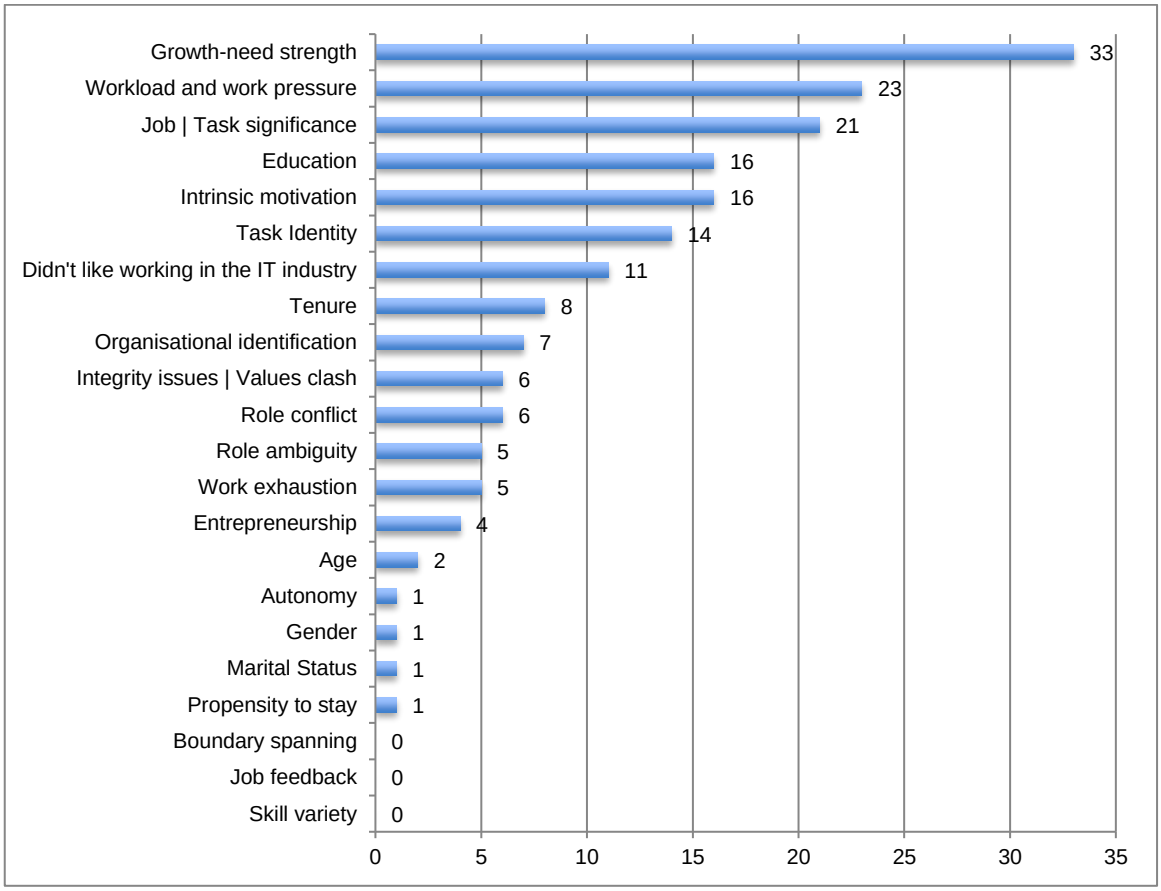
On a positive note, this female explained the critical role that their line manager played in supporting them in the midst of prejudice and discrimination.

> *I've also experienced some stereotypes – where just because people see that I am a black female, and I also have a small frame, they just assume I cannot do the job.*
> *I remember in my early career someone at a client approached my boss to request him to assign someone else on the project because they did not believe I could do the job. Luckily my boss was very supportive, he basically told the person that unless there were issues with my performance I would not be removed from the project.* [Phase II, Participant 3]

5.3.2.3 Phase II Research Question 3 – What are the individual factors that contribute to women voluntarily leaving the IT industry?

Figure 9 below indicates that at an individual level, the top three factors were advancement opportunities, growth-need strength, as well as workload and work pressure. These are discussed in the next section.

Figure 9: Rank and occurrences of Individual level factors



5.3.2.3.1 Growth-need strength

Growth-need strength was amongst the highly ranked factors overall and was discussed above where the views of the experts were provided. The factor was ranked first in the individual level category.

The results from Phase II are consistent with the observations made by the experts in Phase I, that women in IT generally have a high need for growth and advancement. The women themselves had the following to say on this factor:

Self-improvement is key, as well as developing others. I would say it's important to partner with a senior person that has experience and knowledge. At an individual level it's important to love what you do and be knowledgeable. [Phase II, Participant 3]

I decided I wanted to change fields…but in researching what I wanted to do the opportunity that I got was to join a management consultancy. And the guy would train me up in, it was basically looking at behavioural analysis, how people use their inherent personality profile in the work that they do. So I used the IT background to make the shift. [Phase II, Participant 6]

I'm a believer in education and constant training. Your personal development plan as a woman needs to be different, as I said as women we need to work harder, we always need to prove ourselves and we can't be complacent. [Phase II, Participant 8]

I think the main reason is finding stretch; I felt that I needed to stretch myself in different ways and to explore different ways of leadership. [Phase II, Participant 9]

5.3.2.3.2 Workload and work pressure

This category includes a discussion of workload and work pressure, as well as the long hours associated with the IT industry. This discussion often links in with the impact that these demands have on work-life balance and the resultant negative impact on personal | family commitments.

You still have this perception that there's long hours attached so balancing family life as a mother, I find really challenging. And I guess that's to do with the culture. There's no nine-to-five when you're in IT. Things happen at seven, or eight, or nine. And you have to be there if things run over and you have to stay there until it's fixed.
It's definitely a challenge in terms of work-life balance, and yeah, long hours. It can get exceptionally long hours. Which is draining, it is very draining. [Phase II, Participant 1]

I think it was very unbalanced. I think being in IT, it is quite an unbalanced lifestyle. You know you find yourself working under extremes of pressure and that doesn't matter what role you're in, whether you're a programmer, whether you're (a) *BA, whether you're a project manager… [Phase II, Participant 6]*

I think that to maintain a certain pace in a relatively large corporate environment, one does need to commit to operating at that level, at those hours and at that level of intensity. So I really did want to take a break from that and yet at the same time continue to learn and grow in (a) *different way.* [Phase II, Participant 9]

For one participant, not even the advancement opportunities could make up for the negative impact of on work-life balance.

> *There were lots of opportunities in the international company for growth, it was fantastic but work life balance didn't account for that to even happen.* [Phase II, Participant 4]

5.3.2.3.3 Job | Task significance

Although the women had decided to leave the IT industry, many of them had some positive things to say about the significance of the roles they performed and recalled how their experiences provided them with positive challenges.

> *Definitely adding value and problem solving for business. I mean a day in the life of a business analyst in never the same. So that's what I love about it, it's a challenge and there's the value that you create.* [Phase II, Participant 4, commenting on what they enjoyed about their former role]

> *I still liked it because there was a sense of achievement because you know when you solve a problem for someone, when they're having an issue and you're able to investigate and troubleshoot and then find that this is actually the problem…it was a great sense of achievement.* [Phase II, Participant 5]

> *One it's the fact that I started in IT is like understanding the body from the inside out. Because IT is the backbone, the skeleton and an enabler it's an incredibly quick way to get to know a business. If you start off in IT and understand the systems and the applications you are getting to know the business from the inside out. So you establish a very sound knowledge very quickly, that was really good. Then I think just the kind of the logic and the problem solving. There is quite a creative side to it in that sense; you know there are always 15 different ways to achieve something.* [Phase II, Participant 6]

5.3.2.3.4 Workload and work pressure

While in the preceding section the ladies were reminiscing about positive aspects, and the sense of significance they obtained from their former roles, this section provides a view of the flip side of the coin. Where the challenges of workload and work pressures overshadowed the positives mentioned the previous section.

> *During this merger the testing team was dissolved, and I found myself having to do testing work as well. As a BA* (Business Analyst) *I had to draft the test cases, do UAT* (User Acceptance Testing)*, load defects for business and track the testing on QC* (Quality Centre)*. My role was expanded and I had too much work. This included having to test*

releases, you know, doing live testing and having to be there on release nights. There were monthly releases and so you would have to work at night on a regular basis. The other thing was constant changes – priorities were forever changing – you'd be working on one thing and then the next thing something else, more urgent, comes along. In fact, everything was urgent. [Phase II, Participant 1]

There were lots of opportunities for growth in the international company, it was fantastic, but (the lack of) work life balance didn't account for that to even happen. [Phase II, Participant 4]

I think that to maintain a certain pace in a relatively large corporate environment, one does need to commit to operating at that level, at those hours and at that level of intensity. So I really did want to take a break from that and yet at the same time continue to learn and grow in different way. [Phase II, Participant 9]

CHAPTER 6: DISCUSSION OF RESULTS

In this chapter, a detailed discussion of the results that were presented in chapter five is provided; the literature that was laid out in chapter two is used as the foundation for the discussion. The first section of the chapter provides an overview of the findings in a comparison against the concepts covered in the literature review. Thereafter the results of the two phases are provided. The research questions from each phase, as detailed in chapter three are used as the headings for this chapter.

This chapter exhibits the contribution that this study makes. By engaging directly those women who left the IT industry, this study heeds the calls of previous researchers to expand the IT voluntary turnover literature by focusing on actual turnover rather than turnover intention. The matrix contained Appendix 8 outlines the consistency of the research.

A comparison between of the factors discussed in the literature review and those found in the study is depicted in Figure 10 below. In the diagram, the reasons (grouped into the three levels of analysis) that were reviewed as part of the discussion of literature in chapter two are shown. The column named: Included in Literature Review shows a list of those concepts that were covered in chapter two and depicted in Figure 3 in section 2.3.1 above; the next column shows the concepts that occur in the literature review and this study; and finally the last column shows those concepts were found only in this study. The coloured numbers in the last two columns indicate the ranking of the concept in the findings from this study.

Figure 10: Comparing Voluntary Turnover Factors in the Literature Review and Study

Level of Analysis	Included in Literature Review	Concepts in Literature Review and Study	Concepts in Study only
Environmental	• Labour market • Work-family conflicts • Subjective norms	• Work-family conflicts ②	• Industry norms, demands and changes ① • Ubiquity of IT ③
Organisational	• Organisational culture • Manager relations • Pay and Benefits • Advancement opportunities • Work schedule flexibility	• Organisational culture ② • Manager relations ④ • Advancement opportunities ③	• Gender-specific challenges ①
Individual	• Gender • Growth-need strength • Workload and pressure • Role ambiguity and conflict	• Growth-need strength ① • Workload and pressure ②	• Job | Task significance ③

6.1 Discussion of Phase I Results

The primary objective of Phase I was to determine what observations the industry experts had made on the state of women representation in the IT industry. Since this Phase was a prelude to the main study, it was conducted using a small sample size and only five experts were interviewed. The insights gleaned from this phase served as a foundation for the main research, which was conducted in Phase II.

The findings from the two questions that were posed to the experts are discussed in this section.

6.1.1 Phase I Research Question 1

What observations have industry experts made in terms of the representation of women in the IT industry?

Literature, from both academic and business quarters, has persistently highlighted the decline and under-representation of women in IT (Ashraft & Blithe, 2010; Cheng, 2015; Corbett & Hill, 2015; Deloitte Global, 2016; Ridley & Young, 2012).

The findings from this study revealed that the level of women representation is still not reflective of the gender proportions of the country. More women are still found in roles that are classified as “non-technical” or “more client focused”, perpetuating the stereotypes that women do not like technical or “geeky” roles.

One participant made the following comment during the interviews:

> *To a certain extent I felt that you needed to be very geeky, there are specific languages that you needed to understand, there was a bit of a clique. It was mostly male, you do find females that are a little geeky, but not to that level.* [Phase II, Participant 8]

Four out of the five experts interviewed observed that the industry was still male dominated, and specifically mentioned that females were represented in relatively junior roles, and observation that is consistent with (Krivkovich et al., 2016) findings that female representation becomes progressively worse throughout the pipeline.

None of the participants had noticed, or knew of the decline in women, this lack of awareness could be attributed to the fact that women were present either in non-technical or junior roles; and the lack of women at senior roles was not associated with IT exclusively but was an occurrence that was noticed in other industries.

6.1.2 Phase I Research Question 2

What do the experts understand to be the reasons that women are voluntarily leaving the IT industry?

The key focus area of this study was on the reasons that women voluntarily leave the IT industry. Discussing the phenomenon with those who interact with the women who have left provided a different perspective on the matter. Extensive literature exists that addresses turnover, authors such as Ongori (2007) and Holtom, Mitchell, Lee, & Eberly (2008) conducted a brief review of literature on employee turnover in general, (Ahuja, 2002) conducted a review that focused on the literature on women, and more recently, Lo (2015) conducted an extensive review on IT employee turnover holistically. The work by Lo (2015) forms the basis of this study and is cited considerably throughout this paper.

With reference to the second question in Phase I, the respondents were in effect secondary players, in that they were providing their views and opinions on what they had observed or heard, rather than relaying information on events they had experienced first-hand. Despite this, their observations and the reasons they put forward were in direct correlation to those found in literature, as well as those stated by the women who participated in Phase II of the study. And for this reason, the concepts that came up in Phase I are not grouped into the three levels of analysis as was done for Phase II; they are rather reviewed holistically.

The top five reasons mentioned by the experts are gender-specific challenges, organisational culture, advancement opportunities, growth-need strength, and manager relations. Since Phase I was exploratory and the women themselves mentioned all these reasons during Phase II, each factor will be discussed in detail in its corresponding section under Phase II results.

The discussions of each can be found the following sub-section of section 6.2:

- Gender-specific challenges – 6.2.2.1
- Organisational culture – 6.2.2.2
- Advancement opportunities – 6.2.2.3
- Growth-need strength – 6.2.3.1
- Manager relations – 6.2.2.4

6.2 Discussion of Phase II Results

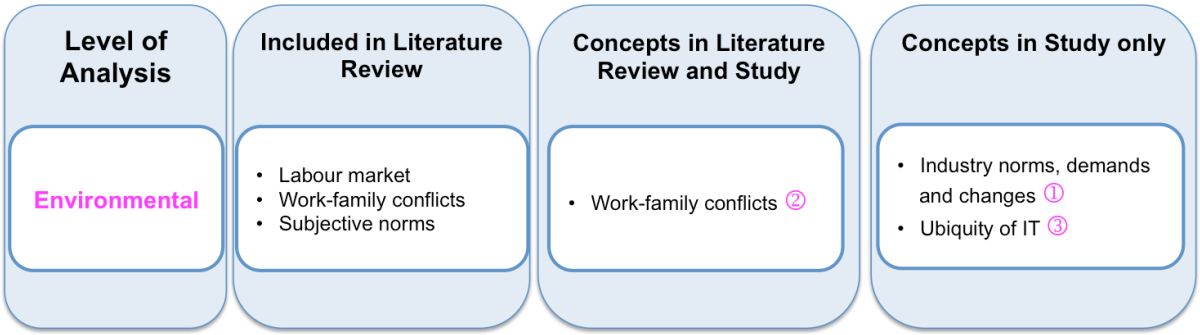
Phase II was at the core of this study, and aimed to hear directly from those women who had voluntarily left. Griffiths & Moore (2010) conducting similar research in the UK, aptly named the population of women who are leaving IT, the “disappearing women”. The “disappearance” of this group of women was made even more evident by the difficulty in reaching the women; as such the sample size of the research was only nine. Although this is noted as a limitation, it is overcome by the fact that the research was conducted using a qualitative method – and thus the focus is on the depth of the findings rather than the quantity. On the positive side, it was precisely the small sample size that enabled the data to be thoroughly mined for insights.

6.2.1 Phase II Research Question 1

What are the environmental factors that contribute to women voluntarily leaving the IT industry?

As depicted in Figure 11 below, at an environmental level, the literature review included labour market, work-family conflicts and subjective norms. Only one concept from these was found in this study, i.e. work-family conflicts. The remaining two, industry norms, demands and changes, and the ubiquity of IT were only found in the study.

Figure 11: Key concepts in the Environmental level findings



6.2.1.1 Industry norms, demands and changes

Some of the practices that have become synonymous with, and even acceptable to the IT industry, such as constant changes, have proven to be contributors to the industry’s inability to retain some of its key talent (Longenecker & Scazzero, 2003). The women interviewed had strong views about the ‘sometimes perceived as chaotic’ manner in

which IT organisations are managed. This statement from one of the participants succinctly describes the sentiment:

> *I found it a very frustrating environment in that there are not a lot of IT shops…I don't think, that are very well run.* [Phase II, Participant 6]

Hasan & Kazlauskas (2009) call for an acknowledgement and acceptance of the fact that this field is in constant change, and rather than seek to force an orderly state, the authors recommend the use of Snowden & Boone's (2007) Cynefin framework to make sense of the environment.

6.2.1.2 Work-family conflicts

The demands of the industry discussed above have wider implications for women. In particular they impact the ability to maintain a balance life and fulfil the multiple roles that women undertake. The common occurrence of long hours and weekend work were strong contributors to the conflict between work and family. Two of the participants explicitly mentioned that their reason for leaving was to prioritise their family, and both expressed satisfaction at the decision they had made, and they felt they were better mothers since leaving IT.

A conflicting conclusion was reached by Parkes & Langford's (2008), they found work-life balance to be the least important factor in employee retention, implying that the lack of work-life balance would not be expected to contribute to the decision to leave.

6.2.1.3 Ubiquity of IT

The ever-increasing demand and growth for technology did not escape the women's observations, and as much as they may have left the industry, they acknowledged that it is not possible to escape technology altogether. While this factor does not explicitly fit into the category of the reasons the women leave the industry, it nonetheless brings to the fore the argument for addressing the high turnover of IT employees, particularly in light of the expected continued use of and reliance on technology. This view is consistent with Baruch's (2014) finding in a study of female students, who acknowledged and welcomed the importance of technology in learning.

6.2.1.4 Environmental concepts not prominent in study

It was interesting to note that the concepts of the labour market and subjective norms did not come up very strongly in the findings of this study. One explanation for this is the importance of context as explained by Hunter et al. (2008) when highlighting the fact that the country context is a modifier in the study of turnover. That means what is a concern in one country or context may not be a concern in a different country or context. Lacity, Iyer, & Rudraminiyaiah (2008), when investigating turnover in India, confirmed the existence of country-specific nuances.

Although South Africa has a high unemployment rate, at 26,6% (Statistics South Africa, 2015) it is doing well in certain aspects of technology. The country is ranked 3rd, after Chile and Denmark, for the proportion of early-stage entrepreneurs that are innovative (World Economic Forum & Global Entrepreneurship Monitor, 2015).

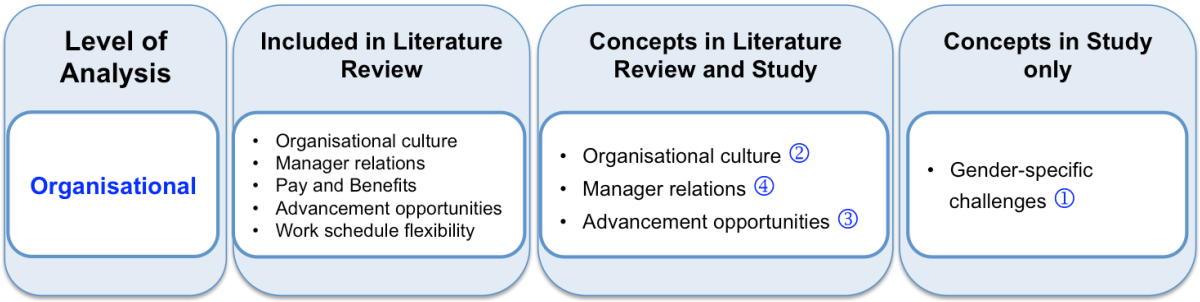
With reference to subjective norms, the women in the study exhibit very high levels of assertiveness and drive. As evidenced by the high ranking of the advancement and the growth-need factors, as such it is highly probable that their decisions to either stay or leave an organisation will not be influenced too much by the views of others. In this study the occurrence of stereotypes and biases was very prominent, and this is discussed under gender-specific challenges in section 6.2.2.1 below.

6.2.2 Phase II Research Question 2

What organisational level factors contribute to the decision to leave?

As shown in Figure 12 below, at an organisational level the literature review discussed organisational culture, manager relations, pay and benefits, advancement opportunities and work schedule flexibility were discussed. Organisational culture, manager relations, and advancement opportunities were found in the study as well as in literature. Gender-specific challenges, a theme that encompasses a number of concepts was found only in the study.

Figure 12: Key concepts in the Organisational level findings



The numbers indicated in blue in the diagram show the rank of the concept; i.e. gender-specific challenges, organisational culture, advancement opportunities and manager relations were ranked in that order; each factor will be discussed in the section below.

6.2.2.1 Gender-specific challenges

The initial coding of the data contained multiple concepts that relayed the myriad of challenges that women faced at work. These included items such as the various stereotypes that were made about women, and their impact on the jobs; as well as the discriminatory practices that the women were exposed to. The codes were then grouped into a single code – gender-specific challenges – which incorporates all the range of issues. Prevalent themes in this category include male dominance and stereotyping.

For the participants in this study, male dominance had a negative connotation, this is in contrast to the study by Draus, Mishra, Natalya, Caputo, & Leone (2014), which found that the majority of the women who participated in their research preferred working with men. A probable explanation for the difference is the fact that the women who

participated in this study had left the IT industry, while those in Draus et al.'s (2014) study were still working in the industry.

With reference to the stereotypes and biases, literature abounds with evidence that this type of cognitive framework is detrimental to the progress and advancement of women in the workplace (Cheryan et al., 2015; Moodley, Holt, Leke, & Desvaux, 2016; Reuben et al., 2014; Whitney et al., 2013).

6.2.2.2 Organisational culture

Organisational culture is part of the work environment and is shaped by the norms and ways that are acceptable in an organisation. The preceding section described how the women who participated in this study were affected by the male dominance in the environments they worked in. Confirming the assertion by previous researchers that the culture of an organisation is a major contributor to the decision to either stay in or leave an organisation (Rigas, 2009; Andrea Hoplight Tapia, 2006; Wentling & Thomas, 2009).

6.2.2.3 Advancement opportunities

The respondents of this study named career advancement opportunities as one of the key drivers to their decision to leave, confirming Kim & Wright's (2007) findings. The link between this requirement and the respondents' high growth-need strength is highlighted in this instance.

6.2.2.4 Manager relations

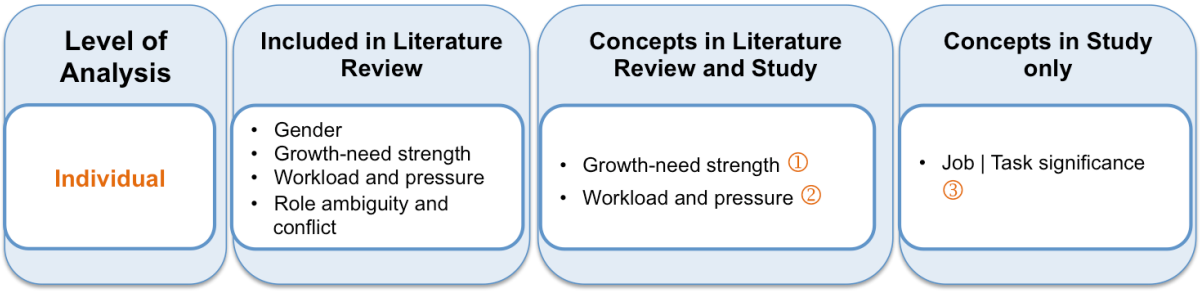
The findings from this study echo much of prior research that has emphasised the crucial role that managers play in the turnover discussion. Specifically, a functional relationship with the manager has been found to reduce turnover (Longenecker & Scazzero, 2003; Tymon et al., 2011).

6.2.3 Phase II Research Question 3

What individual level factors drive the decision to leave?

As shown in Figure 13 below, at an individual level the literature review discussed gender, growth-need strength, workload and pressure, and role ambiguity and conflict. Growth-need strength and workload and pressure are the two concepts that were found in the study and in the literature, while Job | Task significance came up in the study even though it was not discussed in the literature review.

Figure 13: Key concepts in the Individual level findings



6.2.3.1 Growth-need strength

The need for growth in IT professionals is generally high. In this study, it was the driver of turnover in the individual factors. The participants of the study repeatedly mentioned the importance of self-improvement and growth, and were not hesitant to leave organisations where they felt this need was not met, confirming Rigas (2009) findings. The statement from one participant in the study was testament to this relationship between the need for growth and turnover:

> *I've left companies because I felt I wasn't challenged and I wasn't learning.* [Phase II, Participant 8]

6.2.3.2 Workload and pressure

The key theme that was prevalent in this study was the pressure associated with the long hours that have come to synonymous with the IT industry. The participants indicated that, the need to work extra hours and on weekends was a key contributor to their decision to leave. This is consistent with (Ahuja et al., 2006) findings that it contributes to high turnover, furthermore it contributes to the work-family conflict discussed in section 6.2.1.2 above.

6.2.3.3 Job | Task significance

Job | Task significance was one of the factors that was not included in the literature review but came up in the study. McKnight, Phillips, & Hardgrave (2009) found that job characteristics, which includes job significance was a strong predictor of turnover intentions for support staff than it was for programmers. The results from this study are consistent with McKnight et al.'s (McKnight et al., 2009) findings, and this is not a surprise as none of the respondents were programmers.

CHAPTER 7: CONCLUSION

In this concluding chapter, the findings are summarised, key recommendations are provided for the various stakeholder groups that are affected by the topic of the voluntary turnover of women in IT, the limitations of the study are highlighted, and the report concludes by making suggestions for future research.

7.1 Major Findings

As mentioned in the introduction of this study, Krivkovich et al. (2016) found that IT organisations are afflicted with one of three common pipeline pain points: women are unable to enter, stuck at the middle, or locked out of the top. This study proposes a fourth pain point, that of a leaking bucket, manifesting in the form of women leaving the industry.

The major findings from this study confirm those of previous researchers, and also highlight additional factors that need to be borne in mind in the quest to achieve gender representation.

The interplay between the environmental, organisational and individual levels was a common thread in the research. From the analysis it was apparent how factors from one level affect and impact those in the other levels, confirming Mele, Pels, & Polese's (2010) assertion made above that expressed the importance of adopting a systematic approach when analysing a phenomenon.

At the outermost layer, the environmental factors were found to be consistent with some of the exiting research in that work-family conflicts continue to impact the women in IT (Armstrong et al., 2012; Riemenschneider et al., 2006). The result of the conflict seems to stem from some of the industry norms and practices, such as long working hours and constant changes, that are common in the IT industry (Hasan & Kazlauskas, 2009). In addition, a new element was discovered to be at play, that of the pervasive nature of IT. Given the fact that IT is so commonplace and will continue to be so, the exclusionary customs in the industry must be addressed.

The organisation performs in the context of the environment; it is made up of various components, including individuals. This study confirms that the culture of the organisation, and the role of the manager are crucial in the decision to either stay with or leave an organisation, again the inter-relatedness of the organisation and the individual is highlighted.

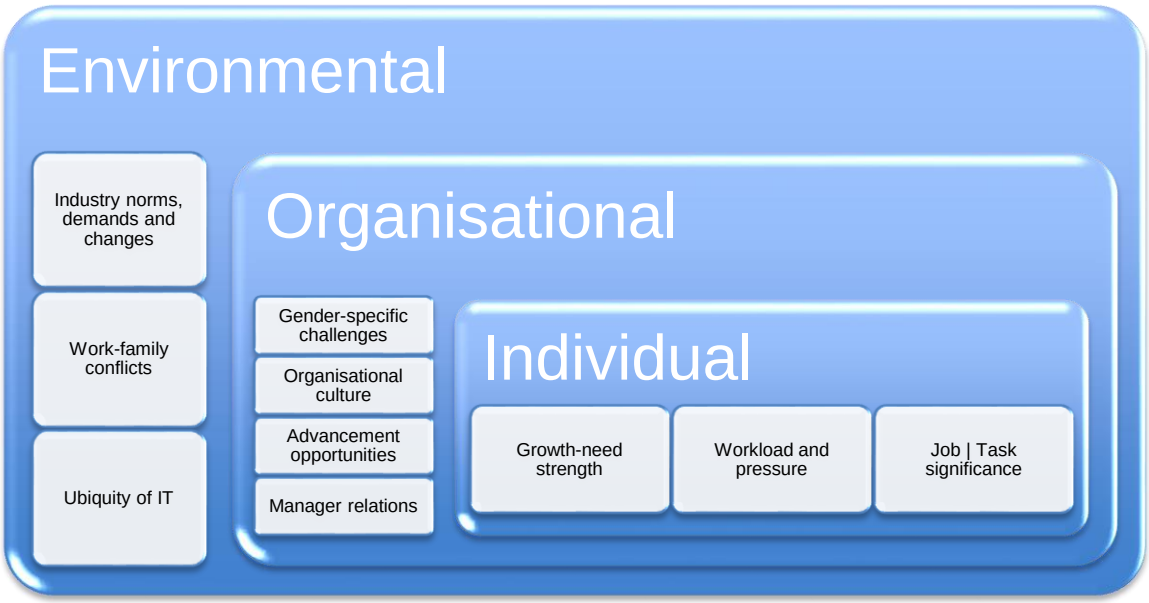
While gender as an individual characteristic did not feature distinctly in this study, the challenges that are associated with gender were prominent in the findings. The participants' experiences of stereotypes and biases indicate that work is still required to eliminate such practices from the work environment, reiterating Tapia & Kvasny's (2004) proclamation that merely recruiting minorities is not enough, they also need to be retained.

The retention element is highly related to the development aspirations of the women interviewed in this study, while the other factors mentioned could be referred to as push factors, the need to grow their career is a pull element that was mentioned by all the participants. This again highlights the link between organisation and individual levels, as the advancement opportunities factor falls in the organisation level, while growth-need strength falls in the individual level.

Additionally, the work-life conflict that was identified in the environment can be linked to the workload and pressure that was found to be a contributing factor to turnover at an individual level.

The reasons for voluntary turnover of women in IT that were found this study are summarised in Figure 14 below.

Figure 14: Voluntary Turnover reasons for women in IT found in this study



7.2 Recommendations

In the introduction section of this study, the importance of the participation of women was outlined for the nation, businesses as well as the IT industry. Now that the drivers of turnover for women in IT have been charted and are understood, this section provides recommendations for the same group of stakeholders, in addition recommendation are also provided for women who are in IT and the general public. By taking a holistic approach, and involving all stakeholders, impetus is created and sustainable initiatives can be implemented.

7.2.1 Recommendations for the policy makers

The case for, and the benefits of, gender diversity has already been made in the section 1.1 above. The economic and business rationale for empowering women is punted almost universally. Chant & Sweetman (2012) however caution against the pursuit of equality goals purely from an economic perspective and rather makes a call for the recognition of the structural deficiencies brought about by gender inequality.

While South Africa has made strides in introducing legislation and policy that supports the inclusion of marginalised groups, the required transformation has not practically translated into the society. The recommendation to policy makers is the inclusion of programmes that promote and introduce technology to all members of society from an early age. A starting point could be the inclusion of technology-focused subjects in the school curricula. The early exposure of children, both male and female, to such subjects will go a long way towards “normalising” and removing the gender aspect from technology. This would address the issue of fewer females choosing to study IT-related qualifications and thus improve the pipeline at the entry level.

7.2.2 Recommendations for business

The IT industry is indispensible and provides the foundation for the success of many other sectors. When key members of the society are excluded from such an industry, the results could be disastrous. A key finding from this research is the role that the organisational culture and manager relations play in the women’s decision to leave. The manager is crucial to creating a culture that is supportive and encourages diversity. A starting point could be adopting a zero-tolerance stance for any form of discrimination, increasing the education of the dangers of stereotypes and biases, and ensuring that the environment is truly supportive.

A significant number of organisations already have initiatives that are aimed at attracting and retaining female talent. Lean In & McKinsey&Company (2016) indicate that "*78% of companies report that commitment to gender diversity is a top priority for their CEO, up from 56% in 2012. But this commitment does not always translate into visible action*" (p.19). The success of these initiatives hinges on the support they receive from managers and all employees in the organisation.

As mentioned by Tapia & Kvasny (2004) merely recruiting an under-represented group is not enough, effort is also required to retain those that are already in the industry. Companies can address this by ensuring that the measures that are meant to improve work-life balance – such as flexi-time and flexi-location – are encouraged and supported for those who need them. One of the participants, commenting on what organisations can do articulated it as such:

> *We have to make sure that we give women the space to find the flexibility they need to deliver, without relaxing any performance objectives. And we have to find a way to make the environment, or rather, to create the right supportive environment that women require to grow in their careers.* [Phase II, Participant 9]

Of importance for organisations is the element of measurement, companies must ensure that progress is tracked and the results are communicated. When it becomes visible that efforts are being taken to address the challenges that women face in the workplace, it will encourage the much-needed change.

7.2.3 Recommendations for women already in IT

In as much as managers can influence the culture of their organisations, women who are already in the IT industry can also play a role in creating an environment that is supportive for new entrants. When those who are in the environment provide mentorship and coaching to other women, it would encourage them to stay, supporting Elvira & Cohen's (2014) findings cited above, that women are more likely to stay in an environment where there are other women.

In addition to being advocates for other women, they can also be the sounding board that companies need, providing the feedback to the right stakeholders on which initiatives are working and which are not. Thus also contributing to the recommendation mentioned above of tracking and measuring the success of the initiatives.

7.2.4 Recommendations for the general public

Part of addressing the challenges faced by women in the IT industry, includes obtaining an understanding of the overlaps and gaps of the cognitive frames held by both females and males (Armstrong et al., 2012; Reid, Allen, Armstrong, & Riemenschneider, 2010).

All layers and members of the society have a role to improving gender parity. From the parents of both girls and boys, who influence and shape the thinking of citizens from a young age; to the teachers who impart knowledge to the same girls and boys from an early age and even the media who introduce and reinforce certain societal norms (Ridley & Young, 2012); all of these stakeholder groups have a role to play in encouraging acceptance and promoting the participation of females in all industries. Furthermore these constituencies can also address the other challenges such as gender stereotyping and biases by promoting tolerance, acceptance and respect.

7.3 Limitations of the research

The known limitations of the research are:

- The size of the sample for both Phase I and Phase II was small, with a high number of respondents from the same race group.
- The sampling methods, both purposive and snowballing, could have introduced an element of homogeneity to the sample, which means that the findings may not be generalisable to the entire population of women who have left IT.
- The method of research relied on the researcher's involvement in the process, unlike the positivist approach where the researcher is more of an observer, if left unchecked this has the potential to introduce the researcher's own subjectivity. The researcher's awareness of this is the start in ensuring that such potential biases are curtailed during the analysis.

7.4 Suggestions for future research

This research could be repeated using a larger sample size in order to test whether the findings holds true.

While Phase II of the research was limited to female participants, future researchers could extend the participants to include the men that are involved in the careers of women in IT. This could enable a testing of the dominant logic among that group of stakeholders.

Alternatively a quantitative study could be performed to empirically test whether the variables from this research remain relevant.

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APPENDICES

Appendix 1: Revised 9 Forces model of attachment and withdrawal

Type of force	Motivational mechanism for attachment and withdrawal
Affective forces	At any given point in time, an employee has an overall feeling about the organisation and being a member in it, which initiates a hedonistic approach-avoidance mechanism. That is, comfort or feeling good at the organisation motivates attachment to it, while discomfort or feeling bad motivates withdrwal. This is purportedly the primary common turnove motive captured in affective commitment and global satisfaction.
Contractual forces	Psychological contract obligation to the organisation, through a norm of reciprocity, can imply or explicity include staying with that organisation. Conversely, perceived contract violations by the organisation reduce or eliminate any such obligations to stay, and thereby, motivate quitting.
Calculative forces	Based on future-oriented self-interest, employees calculate their chances for achieving their goals and values at the current organisation. If this calculation is favourable, the person becomes more motivated to stay. If the calculation is that important goals and values cannot be met there, the person becomes more motivated to quit.
Alternative forces	Good or plentiful alternative job opportunities can psychologically pull and attract employees away from their current organisations for various reasons. Conversely, and employee who believes that there are few or low quality alternatives available will be less motivated to quit current the organisation, untlimately fearing unemployment.
Behavioural forces	Behavioural forces are the perceived tangible or pyshcological costs incurred by leaving, like side-bets or psychologucal dissonance, motivating attachment to the organisation. Conversely, perceiving no costs of leaving (or dissonance of staying) motivates an employee to quit.
Normative forces	Employees perceive expectations from family or friends about their remaining or quitting. Assuming that there is some motivation to comply with these expectations, a motive force is created. If the family member or friend's expectations favour staying, there is a motive to remain. If the expectations favour leaving, there is a motive to quit.
Moral | Ethical forces	Employees may also internalise a value about turnover behaviour itself. This value may hold that quitting jobs shows weak character or fickleness, implying attachment. Or, this value may hold that changing jobs regularly is a virtue, implying withdrawal. The psychological motive force is to do the "right thing" by acting consistently with one's internalised values about turnover behaviour.
Constituent forces	Related to the foci of commitment (Becker, 1992) and on-the-job embeddedness "linkages" (e.g., Lee et al., 2004), an emplpyee may feel attached to or want to withdraw from various constituents (e.g., leaders, friends, coworkers, team) within the organisation, apart from the organisation itself. Becase constituents are typically seen as embedded within the organisation, attachment to the would typically imply attachment o the organisation as well.

Type of force	Motivational mechanism for attachment and withdrawal
Location forces with Community Embeddedness	"*Considering where one will be living geographically and around what people and institutions, is endemic to most any careful consideration of employment change. Still, location attachment would not be as relevant to turnover decisions, where organizational turnover does not require relocation. This is perhaps the case for those living within large metropolitan areas that support many companies with many employment opportunities all within commuting distance. In such cases, location attachment to an organization should largely be a function of commute times and convenience rather than community embeddedness*" (Maertz et al., 2012) p.22.

Source: Maertz et al. (2012)

Appendix 2: Summary of environmental, organisational, and individual factors and how they relate to turnover

Level	Category	Subcategory	Factor	Relationship to Turnover	
				Increases Turnover	Reduces Turnover
Environmental	Social factors		**Work-family conflicts**	✓	
			Subjective norms		✓
			Labour market	Can either increase or reduce turnover	
Organisational	Work environment		Peer relations		✓
			Supervisor | Management relations		✓
			Organisational culture	Can either increase or reduce turnover	
	Remuneration and benefits		**Pay and incentives**		✓
			Advancement opportunities		✓
			Training and professional development opportunities		✓
			Job security and **work schedule flexibility**		✓
			Fairness of distribution and procedures		✓
			Human resource strategies	Can either increase or reduce turnover	
Individual	Individual characteristics	Demographics	Age		✓
			Education	✓	
			Gender	**Females tend to have higher turnover intentions, but the results are weak**	
			Marital Status	Single employees have higher turnover intentions than married employees	
			Tenure		✓
		Disposition	Negative affectivity	✓	
			Intrinsic motivation		✓
			Growth need strength		✓

Level	Category	Subcategory	Factor	Relationship to Turnover	
				Increases Turnover	Reduces Turnover
			Propensity to stay		✓
			Organisational identification		✓
	Job-related factors	Attributes from Job Characteristics Model	Autonomy		✓
			Job feedback		✓
			Job | Task significance		✓
			Skill variety		✓
			Task Identity		✓
		Stress factors	**Perceived workload**	✓	
			Role ambiguity	✓	
			Role conflict	✓	
			Work exhaustion	✓	
			Boundary spanning	Can either increase or reduce turnover	

Source: Lo (2015)

Appendix 3: Screenshot of GIBS Ethics Approval Letter

Dear Tiro Sibaya

Protocol Number: **Temp2016-01357**

Title: **Research Ethical Clearance Application**

Please be advised that your application for Ethical Clearance has been APPROVED.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards,

Adele Bekker

Appendix 4: Company Permission Letter

To Whom It May Concern

Re: Permission to conduct interviews as part of research project

This serves to confirm that I grant **Tiro Sibaya (Student Number: 15388400)** permission to conduct a semi-structured interview with me in my capacity as an IT professional.

The purpose of the study will be to find out more about the factors surrounding the voluntary turnover of women in the Information Technology field. Information gathered from the interviews will be used for research purposed as part of the integrated project for her studies toward and MBA at GIBS.

Regards,

Name and Surname: _____

Title | Designation: _____

Contact Details

Office Number: _____

Email address: _____

Signature: _____

Date: _____

Appendix 5: Informed Consent Letter

I am conducting research find out the reasons women are voluntarily leaving the Information Technology industry.

Our interview is expected to last about an hour, and will help us understand the reasons for women exiting the industry. Your participation is voluntary and you can withdraw at any time without penalty. In order for me to accurately capture the findings, I will record the interviews and the recording can be made available to you if so required. The data gathered will be kept without identifiers.

If you have any concerns, please contact my supervisor or me. Our details are provided below.

	Researcher	Supervisor
Name	Tiro Sibaya	Desray Clark
Phone	+27 (78) xxx xxxx	+27 (83) xxx xxxx
Email	xxx.xxx@xxx.com	xxx.xxx@xxx.com

Acceptance

Researcher	Interviewee
Signature:	Signature:
Date:	Date:

Appendix 6: Phase I Interview Guide

Target audience: Recruiters of IT professionals

Research Area	Interview Question
Exploratory to determine what observations had the industry experts made on the state of women representation in the IT industry	1. Can you tell me about your occupation? 2. How do you interact with IT professionals? 3. Can you tell me about your observations regarding the representation of women in the IT industry? 4. What are the reasons that you know are leading women to leave the IT industry?

Appendix 7: Phase II Interview Guide

Target audience: Women who have voluntarily left the IT industry

Research Area	Interview Question
Demographics | General	1. What is your educational background? 2. What industry was the organisation you worked for in while you were in IT? 3. At what level of the organisation were you when you decided to leave? 4. How long were you in IT before you exited? 5. How long have you been out of IT?
Reasons for voluntary turnover	6. Can you let me know the circumstances surrounding your decision to leave IT? 7. What were the primary reasons for you deciding to leave the industry? 8. Can you let me know what you enjoyed the most about the role you were in? 9. What challenges were you faced with?

Appendix 8: Consistency Matrix

Title: Voluntary Turnover of Women in the Information Technology (IT) Industry

Phase	Question	Pertinent Literature	Data Collection Tool	Analysis
I	**PI RQ1:** What observations have industry experts made in terms of the representation of women in the IT industry?	Corbett & Hill (2015) Krivkovich et al. (2016)	Question 3 from Phase I Interview Guide	Content analysis on open ended question to understand the observations
	PI RQ2: What do the experts understand to be the reasons that women are voluntarily leaving the IT industry?	Abii et al. (2013) Armstrong et al. (2012) Lo (2015) Riemenschneider et al. (2006) Whitney et al. (2013)	Question 4 from Phase I Interview Guide	Content analysis on open-ended question to determine the reasons understand the reasons as articulated by the experts.
II	**PII RQ1:** What are the environmental factors that contribute to women voluntarily leaving the IT industry?		Questions 6 to 9 from Phase II Interview Guide	Content analysis on open-ended questions Use of deductive and inductive coding to formulate themes
	PII RQ2: What organisational level factors contribute to the decision to leave?			
	PII RQ3: What individual level factors drive the decision to leave?			