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The role of a manager's expertise on the IT professional's intent to leave in South Africa

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DECLARATION

I, Zanele Mazibuko, declare that this research article is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

ZANELE MAZIBUKO

(Type your name in full here, and sign in the space above)

Signed at ……WBS……

On the ……28…….. day of …March……. 2018…..

DEDICATION

To my cousin who passed, Wayne Mthembu, you taught me to love and enjoy the process of acquiring new knowledge. I did this for you.

ACKNOWLEDGEMENTS

This journey has tested my resilience and willpower; it would not have been possible without the assistance of the following:

To my supervisor, Dr Gregory Lee, thank you for your guidance and support. You shed light where there was complete darkness. I appreciate that you ensured that this was a learning curve for me and contributed towards my growth.

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To my sister, Thuli Mazibuko, thank you for your continued support and running our start-up while I was busy with my studies. I appreciate your hard work and dedication to keep us running.

I would like to thank Tshepo Thipe, for staying with me and being patient with me through this stormy journey.

Lastly, I would like to thank God for giving me the strength to continue to persist and push myself to reach the finish line. Moreover, for all those whom He presented to me to help me complete this journey.

SUPPLEMENTARY INFORMATION

Nominated journal:	South African Journal of Business Management
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Responses to revisions for the Examiner

Number	Revision	Response
8	Issues around study population, sampling procedure and ethics were not adequately addressed	Updated 'Population, sampling procedure and sample' section under 'Methodology' page 22. Ethics were addressed under the 'Ethics' page 28
10	There is no argument to specifically justify the choice of a research paradigm or absence thereof	Added the argument that it's a Positivism approach under the 'Methodology' section, page 21
20	Evidence of inappropriate/ unconventional referencing in text exists.	We were instructed to use APA 6th style and when there is more than 1 author with the same surname, the reference includes an initial.

ABSTRACT

The issue of employee turnover has long been a matter of interest in human resource management, industrial psychology as well as for managers and researchers. This is an even bigger issue in the Information Technology (IT) industry in South Africa due to skills scarcity.

Vast amounts of literature exist on Leader-Member Exchange (LMX), job satisfaction and intent to leave. These have been studied separately or in conjunction, however there is limited research linking these elements to the manager's expertise (both technical and general managerial skills) in the IT industry in South Africa.

The study aimed to discover the factors that play a role in It professionals' intent to leave within the IT industry.

An empirical, survey based study was conducted to analyse the proposed model. The role of the manager's expertise (independent variable) and intent to leave (outcome variable) was assessed in the IT industry from the perspective of an IT subordinate as well as assessing LMX and job satisfaction as mediating factors. Lastly, the control factors such as demographics, education, organisational tenure and alternative employment were also tested in the study.

Based on literature, a structural model was developed and analysed in the context of IT professionals in South Africa. The model incorporated the core antecedents of turnover i.e. demographics, job satisfaction and intent to leave as well as constructs of the manager's expertise (both technical and general managerial skills) and LMX. Structural equation modelling was used, which is a two-step technique that combines factor analysis and multiple regression analysis, to analyse the relationships between the measured variables and latent constructs.

The empirical tests showed that the manager's technical expertise does not play a role in an IT subordinate's intent to leave even when mediated by LMX and job satisfaction. However, the manager's general expertise does appear to act as an explanatory variable on intent to leave. Indirect effects were observed

between the general expertise and intent to leave. Furthermore, an association is observed between the manager's general expertise, through mediation effects of job satisfaction, and the subordinate's intent to leave. The mediation effects of LMX were not supported in both cases.

The study aimed to investigate the proposition that IT subordinates need managers possessing both technical and general managerial skills, however, the results showed that in today's age the subordinate is more concerned with a manager that displays interpersonal, leadership and business functional skills instead of technology management skills.

Therefore, managers need to ensure that they focus on relationship management and soft skills by engaging with each professional and understand what their needs are. The human resources (HR) teams in organisations must ensure that job specs include general managerial skills as one of the key important factors when recruiting for IT managers. Furthermore, HR needs to hold the managers accountable for employee retention.

Keywords: IT, manager, technical expertise, general expertise, LMX, job satisfaction, intent to leave.

Introduction

Purpose of the study

The purpose of this study is to evaluate the role of a manager's expertise (both technical and general expertise) on an Information Technology (IT) subordinate's intent to leave through the mediation effect of Leader-Member Exchange (LMX) and job satisfaction.

Context of the study

According to Mintzberg (1989) a successful manager has to be able to move between interpersonal, informational and decisional roles. In the rapidly changing field of IT, information sharing, facilitated by the manager, is crucial to maintain a competitive advantage. This has the potential to affect the overall performance of the subordinate hence the organisation (Farooquia & Nagendrab, 2014).

Literature has provided different views on whether the IT manager should have technical background and skills in order to lead effectively. Even though the study of Igbaria, Kassicieh & Silver (1999) shows that technical professionals (specifically focusing on IT subordinates for this study) enjoy a workplace that provides autonomy and challenge, when there is uncertainty within the team, they need a supportive manager to guide and outline expectations (Hoyt & Gerloff, 2000). Studies have shown that the level of support and interaction will be dependent on the type of relationship between the manager and the subordinate (Erdogan & Enders, 2007; Gagnon & Michael, 2004; Graen & Uhl-Bien, 1995). This dyadic relationship is explained by the LMX theory where instead of a leader being viewed as having the same behaviour and treatment across subordinates, they have a unique relationship with each subordinate (Erdogan & Enders, 2007; Schriesheim, Castro, & Cogliser, 1999). The relationship formed can either be a high quality, high involvement, supportive relationship or a low involvement exchange based relationship (Gagnon & Michael, 2004). When the exchange is perceived as positive, there is increased

job satisfaction and performance and lower levels of employee turnover (Erdogan & Enders, 2007; Gagnon & Michael, 2004).

Job satisfaction looks at the factors that determine the attitude of a professional towards their job, this could be person-job fit, pay, stress etc. (Igbaria & Guimaraes, 1993). However, in this study the focus is on the manager's expertise and the relationship that exists between the dyad as perceived by the professional. Depending on how satisfied or dissatisfied the subordinate is with those, that can possibly play a role on their intent to leave their current organisation.

Significance of the study

The study should provide guidance to building knowledge around IT subordinates intentions to leave based off the managers expertise, the perceived quality of LMX and overall job satisfaction. It is important that organisations are aware of the factors involved so they can address them and formulate effective retention and recruitment strategies in order to maintain a sustainable competitive advantage.

Problem statement

Main problem

Turnover intentions and actual turnover have been a topic of interest for many years for both researchers and managers. Turnover is a big challenge in the IT industry as trends report high turnover annually, with an average of 25-30% (Purohit, 2016). Technical organisations are struggling to attract and retain talent and this has been one of the most overlooked factors by organisations that enable success (Kane, Palmer, Phillips, & Kiron, 2017). In the IT industry, talent retention is very important because of skills scarcity, ensuring continuity of skills and it removes the cost of losing an employee; this includes recruitment, selection and on-boarding costs (Purohit, 2016; Tymon, Stumpf, & Smith, 2011). Once managers understand the variables that influence turnover intentions, the problem of high turnover can be possibly minimised. Intent to quit has been associated with various factors from past studies. In the IT industry, it could be possible that the subordinate's think of quitting based on the managers expertise, how well they get along with them and thus overall affecting their job satisfaction.

Therefore, the problem statement was to investigate whether the manager's expertise (both technical and general skills) plays a role on the subordinate's intent to leave through mediated effects of LMX and job satisfaction.

Sub – problems

Sub–problem 1

Evaluate whether the manager's expertise (technical and general skills) is associated with the subordinate's intent to leave.

Sub–problem 2

Assess the role of LMX as a mediator of the relationship between the manager's expertise (technical and general managerial skills) and the subordinate's intent to leave.

Sub–problem 3

Analyse the role of job satisfaction as a mediator of the relationship between the extent of the manager's expertise (technical and general managerial skills) and the subordinate's intent to leave.

Sub–problem 4

Analyse the relationship between alternative employment and the subordinate's intent to leave.

Research objectives

The research objectives include:

- To evaluate if there is a relationship between the manager's expertise (technical or general skills) and turnover intentions of the subordinate.
- To determine if there is an association between LMX and the manager's expertise (technical or general skills).
- To determine if there is an association between job satisfaction and the manager's expertise.
- To assess if there is a relationship between LMX and job satisfaction.
- To assess the relationship between alternative employment and turnover intentions of the subordinate.

Literature review

From the introduction, the overall concept and independent variable of the study is intent to leave. In this study intent to leave is defined as the desire to leave one's current organisation (Mobley W. , 1977).

The dependent variables are composed of the manager's technical and general expertise, LMX and job satisfaction constructs. These will be broadly discussed below with reference being made to the relationships between the constructs and intent to leave in the IT profession.

Manager's expertise

The manager is normally responsible for several objectives such as ensuring accomplishment of tasks/projects, assessing and mitigating risks and providing alternative solutions to complex issues (Baca, 2007; DiVincenzo, 2006; Dunn, 2001; Gillard, 2009; Zielinski, 2005).

Manager's technical expertise

There have been studies in literature arguing that in order for a manager to be successful in the IT industry, they are required to have a technical background and expertise (Gillard, 2009; Todd, McKeen, & Gallupe, 1995; Watson et al., 1990). A technical background means an appropriate qualification in IT, whilst technical expertise/experience means that the employee moves through the ranks from junior to senior programmer for example, then technical lead and lastly senior management (Bassellier, Reich, & Benbasat, 2001). In the 90's the advertised job requirements favoured technical expertise over interpersonal people management skills (Byrd & Turner, 2001; Todd, McKeen, & Gallupe, 1995). Some research goes as far as pointing out that technical professionals perceive managers with a technical background and expertise as more credible (Mael, Waldman, & Mulqueen, 2001). Contrary, Kane et al. (2017) found from the survey only 27% of employees in the digital environment valued technical skills in their manager thus proving no to be a driver of turnover inentions.

H1: A manager's technical expertise is negatively associated with an IT subordinate's intent to leave.

Manager's general expertise

Other literature states that it is the business, communication and interpersonal skills that are the determinant success factor in the IT industry (Byrd & Turner, 2001; Cheney & Lyons, 1980; Gillard, 2009; Green, 1989; Leitheiser, 1992; Todd, McKeen, & Gallupe, 1995; Watson, et al., 1990). This was observed when the frequency of these skills requirement started to increase in the job specs (Cheney & Lyons, 1980). This shift in state was also attributed to organisations realising that IT needs to be aligned to support the business strategy (Byrd & Turner, 2001) and that human skills are more important in a leader especially as they progress to senior management, they need to be more conceptual and less technical (Mallette, 2005). These skills include manager support, which encompasses key practices like being compassionate, high emotional intelligence (EI), showing concern for career development and rewarding successes (Tymon, Stumpf, & Smith, 2011). Kane et al. (2017) argue that it is the leaders that are visionaries, change-orientated and display skills of being flexible and innovative. And further on to state that employees were six times most likely to leave if an organisation lacks soft skills development. Some literature goes as far as bemoaning the lack of these skills (Cheney & Lyons, 1980; Davis, 1993). Joslin & Bassher (1976) argued that managerial skills were most important in a manager and that the subordinates must be the ones that deal with the technical problems that arise.

H2: A manager's general expertise is negatively associated with an IT subordinate's intent to leave.

Well rounded management

With time it became more prevalent that organisations cannot afford managers illiterate in either business or technical areas (Bassellier et al., 2001). Studies from Couger et al. (1995), Lee & Farwell (1995) and Rockart, Earl, & Ross (1996) stress that a manager adds value when they have both "hard" and "soft"

skills including 1) technology management skills, (2) business functional skills, (3) interpersonal skills, and (4) technical skills as well as leadership skills (Bassellier et al., 2001; Byrd & Turner, 2001; Gillard, 2009; Lee & Farwell, 1995; Sampson, 2007). Technology management skills is effectively aligning IT implementation strategy to the strategic objectives of the organisation to ensure the success and a healthy bottom line. Business skills are concerned with understanding the business environment how the different divisions functions as a whole entity. Interpersonal skills involve the “soft” skills, e.g. being able to communicate effectively with the team in order to ensure collaboration amongst the teams as well as lead with the organisation strategy. Technical skills are the knowledge of IT specialties (operating systems, programming languages, database management etc.) within the organisation (Byrd & Turner, 2001).

Research has found that a career of an engineer goes through several stages i.e. establishment, advancement and maintenance stage. Each stage encompassed with its own challenges and needs (Baird & Kram, 1983). In the establishment phase (start of career) there is a great deal of uncertainty about capability and output therefore the subordinate needs a lot of support and guidance which should be provided by the learning environment and the manager. In the advancement stage the subordinate needs to learn to work autonomously and the route to achieving this is through creating networks and having a coach to assist one solve challenges in this stage (Baird & Kram, 1983). Lastly the maintenance stage is where the subordinate uses their expertise to assist and develop the less experienced (Baird & Kram, 1983).

From the above discussion, literature displays overtime that the work environment prefers a well-rounded (both technical and general expertise) manager for the IT subordinates. However, there is an element that also facilitates the level of support between the interactions of the manager and subordinate which is discussed below.

Leader-member exchange

This study mainly focuses on the LMX theory as a mediating factor, however, literature for person to supervisor fit (PS-fit), the principle of homophily and social exchange theory is reviewed as it relates to LMX.

While traditional leadership theories are based on the personal characteristics of the leader (Allinson, Armstrong, & Hayes, 2001; Schriesheim & Kerr, 1977), LMX theory, as initially modelled by Graen & Uhl-Bien (1995), looks at the dyadic relationship between the leader (manager) and the member (IT subordinate in this case) (Gerstner & Day, 1997). It has been found that the leader does not display the same behaviour across all subordinates as they would provide different descriptions of their interactions based on their experiences (Erdogan & Enders, 2007). The theory argues that there are two extremes in the relationship, one is high involvement and highly developed while the other is low involvement and is mostly exchange based (Gagnon & Michael, 2004). A highly developed relationship is defined as a partnership that thrives on support, trust, information sharing, liking and respect (Gagnon & Michael, 2004). The opposite goes for low involvement, exchange based relationships which function like a contractual agreement where the leader gives orders and the member follows those orders. These relationships are governed by employment terms and are highly hierarchal in nature and mostly influenced one-way by the leader (Gagnon & Michael, 2004).

Homophily and LMX

Allinson et al. (2001) suggests that the degree of interaction in the relationship is dependent on the similarity between the cognitive styles of the leader and the member. This finding is linked to the principle of homophily which states that people with similar socio-demographic, behavioural and intrapersonal characteristics are more likely to be connected and have a personal network (McPherson, Smith-Lovin, & Cook, 2001). This is further backed up by Byrne (1971) who explains the similarity-attraction paradigm which states that the

more similar the personality, the more attraction there is at a personal level. Studies show that demographic factors are the biggest dividers in social systems and are the common ties in which homophilous relations are created (Byrne, 1971). When there's a lack of similarity, there's a weak connection created and thus the relationship is weak and can dissolve easy quicker.

When looking at the leader member dyad, homophily plays a big role in that it affects the degree of information one receives, the level of interaction created as well as the attitude formed in the relationship. This is observed in the studies done by Allinson et al. (2001) and Mallette (2005) where the leader will develop close relations to some members and be distant to others. This is also known as the "In - group" and "Out - group" dichotomy. The subordinates that are seen as the "In - group" receive high quality support and interaction, thus will be sufficiently guided during times of uncertainty while the opposite is true for the "Out - group". This is further backed up by Allinson et al. (2001) and Deluga (1998) who argue that there is increased subordinate performance when there is a strong interpersonal attraction because there are higher levels of communication, thus the subordinate will also know what is expected of them. Therefore, employee performance is high when information sharing is high (van Knippenberg, Dahlander & Haas, 2015). For this study, to measure LMX the focus will be on the role of the manager's interaction and the degree of information sharing with the subordinate.

H3: A manager's technical expertise is positively associated with LMX.

H4: A manager's general expertise is positively associated with LMX.

PS fit and LMX

The meta-analysis study done by Kristof-Brown, Zimmerman & Johnson (2005) showed that PS fit has a strong relationship with job satisfaction, supervisor satisfaction and LMX. The link with LMX was further backed up by the study of van Vianen, Shen, & Chuang (2011) and Gagnon & Michael (2004) which found that PS fit is related to supervisor commitment and supervisor support through

LMX. The concept of PS-fit concerns the extent to which the subordinate perceives their psychological characteristics (i.e. values, personality and behavioural styles) to match those of the manager (van Vianen, Shen, & Chuang, 2011). These studies report that there's greater quality of LMX due to a deep level connection formed thus the subordinate is more committed to the supervisor as they feel more supported by the manager (Gagnon & Michael, 2004; van Vianen et al., 2011). The next section will look at other factors that affect the quality of this relationship (LMX) between the manager and the subordinate.

Social exchange theory on LMX

Blau (1964) states that LMX is rooted within social exchange theory meaning there is a level of exchange between the dyad depending on the quality of LMX relationship. Studies have shown that with a higher quality of LMX, there are both tangible and intangible benefits to the member which leads to increased job satisfaction (Gerstner and Day, 997). In return, the members then increase their performance and other behaviours that may benefit the leader (Erdogan & Enders, 2007). Erdogan and Enders (2007) suggest that there also has to be consideration of upward exchanges. This concept looks at the exchanges the manager also has with upper level management as it has the potential of decreasing the amount of benefits the leader can share with subordinates (Erdogan & Enders, 2007).

H5: LMX is positively associated with job satisfaction.

Other factors that affect the level of quality of the relationship are the leader's view on the subordinate's capabilities and the effort provided by the subordinate to foster a relationship with the leader (Allinson et al., 2001). When the cognitive styles are similar, the subordinate will understand the leader's concerns and can thus ensure their output meets those needs resulting in a mutually beneficial relationship (Baird & Kram, 1983).

Job satisfaction

Job satisfaction is the attitude an individual has towards their job, which could either be positive or negative (Purani & Sahadev, 2008). This is also based on the individual's perspective of what they consider to be fair according to their needs and wants (Lambert, Hogan, & Barton, 2001). There has been many factors identified that potentially affect job satisfaction, studies in the 60's identified the following as being the most important factors: sense of responsibility, getting the job done and being acknowledged for ones efforts. While job dissatisfaction was linked to the dynamics around co-workers, pay and promotion, rules and regulations at work and personal life factors (Igbaria & Guimaraes, 1993; Purani & Sahadev, 2008).

With time it was found that these factors became driven by emotional, cognitive and behavioural components such as their overall feeling about their work, that is, their levels of boredom, excitement or anxiety towards the work (Lambert, Hogan, & Barton, 2001). In addition, job satisfaction became concerned with the extent to which the subordinate feels intellectually challenged, engaged, their perception on how well they feel like they are being looked after and their thoughts towards being offered career development opportunities (Kane et al., 2017; Moorman, 1993). A different take on cognitive components concerning job satisfaction was suggested by Lambert, Hogan & Barton (2001) regarding organisational tenure. They proposed that job satisfaction decreases the longer the individual remained in the same organisation.

The list of job satisfaction influencers is exhaustive and in most instances it is dependent on the individual. For this study, to measure job satisfaction the focus will be on the role of the manager's expertise as well as the quality of the relationship between the dyad.

H6: A manager's technical expertise is positively associated with an IT subordinate's job satisfaction.

H7: A manager's general expertise is positively associated with an IT subordinate's job satisfaction.

Alternative employment opportunities

When a professional experiences job dissatisfaction, they are most likely to look for other employment opportunities (Lambert, Hogan, & Barton, 2001). This is further backed by Mobley (1977) who suggested that the intention to seek employment alternatives is a crucial addition to withdrawal process. Economists state that most people think this decision through in a rational and logical manner. The decision to leave will be based on the professional's perception of the number of available alternative opportunities and their attractiveness (Griffeth & Hom, 1988; Maertz & Campion, 2004; Mueller et al., 1994). This study will report this measure based on the subordinate's perception (Maertz & Campion, 2004), if the subordinate believes there are numerous alternative employment opportunities, this will play a more significant role on intent to leave (Lambert, Hogan, & Barton, 2001).

H8: Alternative employment opportunities are positively associated with an IT subordinate's intent to leave.

Intent to leave

Intent to leave studies the factors that lead or trigger an employee contemplating leaving their current job (Purani & Sahadev, 2008). Mobley and colleagues suggested a process that explains the steps leading to turnover, with intent to leave as the last part of the withdrawal process and is the deliberate desire to leave an organisation (Mobley W., 1977; Mobley, Horner & Hollingsworth, 1978; Mobley, Griffeth, Hand & Meglino, 1979). This topic has been researched extensively throughout psychology and management disciplines over the years. The study from Mobley (1977) found that there other factors (intermediaries) that affect the withdrawal process as seen in Figure 1. This process follows logic in that one experiences dissatisfaction which triggers thoughts of quitting, thus intent to leave may be the last step before actual turnover (Mobley W. , 1977).

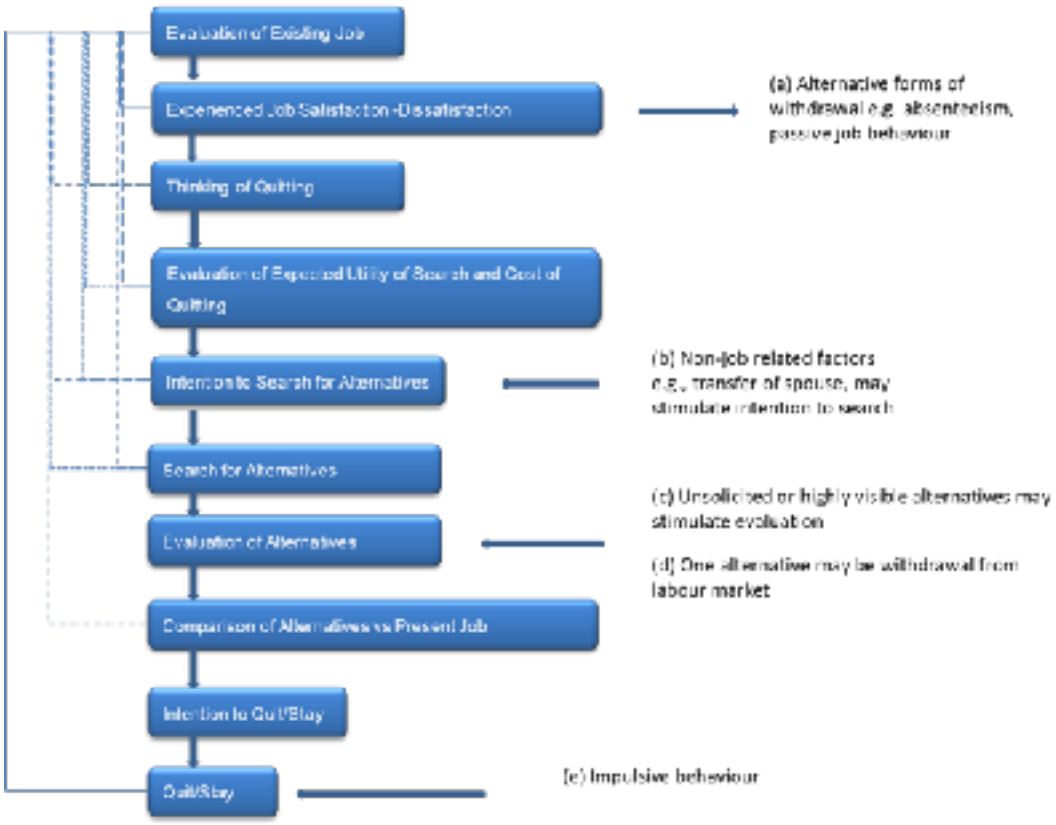

Figure 1: The Employee turnover decision process (Adopted from Mobley W., 1977)

Barak, Nissly, and Levin (2001) conducted a meta-analysis study and discovered that organizational or job related such as burnout, job dissatisfaction, other job opportunities offered, low organisational and professional commitment are some of the variables that influence turnover intentions.

Researchers like Hellman (1997) and Ozdevecioglu, Dermirtas, & Kurt (2015) found that behavioural intention to quit is a strong predictor of turnover across industries. This is a major issue in many organisations; because there are financial and psychological costs involved, loss of talent and expertise and vacancies to be filled when an employee quits (Purohit, 2016; Tymon, Stumpf, & Smith, 2011). van den Berg & Nelson (1999) and Ozdevecioglu, Dermirtas, & Kurt (2015) found turnover to be caused by the working environment, leadership style, remuneration structure, perceived over qualification and work dissatisfaction.

H9: Job satisfaction is negatively associated with an IT subordinate's intent to leave.

Theoretical framework

The IT profession has undergone rapid changes over the years and these have been driven by the changing business environment, systems and technology as well as the overall role and impact of IT in the organisation (Lee & Farwell, 1995). IT professionals need to constantly be on the lookout for new innovative ways of doing things. When there are high levels of uncertainty it has been found that the creative output and innovative solutions decline (Hoyt & Gerloff, 2000). This can have a knock on effect of the subordinate's performance and intent to leave. In times of uncertainty the subordinate needs to know what has to be accomplished and the process to accomplish the tasks (Igbaria & Guimaraes, 1993). These need to be defined by the manager based on their expertise, their awareness of the risks and challenges that might be faced (Baird & Kram, 1983) while avoiding causing confusion concerning the subordinates roles and expectations (Igbaria & Guimaraes, 1993; Kahn et al., 1964).

When managing technical employees, the working environment needs to be: supportive, facilitate learning and knowledge sharing, allow freedom to work independently, provide challenging and analytic work and be development orientated (Hoyt & Gerloff, 2000). The success of meeting operational requirements depends on the abilities of the manager to lead the team and form relationships with the subordinate (Bassellier, Reich, & Benbasat, 2001).

The relationship as an exchange is positive when there is an interchange of resources including technical, psychological and organisational resources (Baird & Kram, 1983). According to social exchange theory, similarity brews a higher degree of information sharing and perceived LMX quality thus increased job performance (Kim et al., 2010) as well as decreased intent to leave (Gerstner & Day, 1997).

An observation by Schriesheim, Castro & Cogliser (1999) as well as a meta - analysis by Gerstner and Day (1997), revealed noteworthy correlations between LMX, satisfaction with the level of supervision, job satisfaction and turnover intentions. Furthermore, literature has proven over the years that job satisfaction plays a key role in leading to turnover intentions (Igbaria & Guimaraes, 1993; Baroudi, 1985; Mobley, 1977; Locke, 1985). As discussed by Mobley (1977), this relationship has been consistently found, however it is not a strong correlation. Furthermore, Lum et al. (1998) and Robins (2001) suggested that moderating factors such as alternative employment, economic conditions and tenure add further complication to the relationship, with alternative employment being the biggest driver especially when the opportunity is very attractive. Therefore, Firth et al. (2004) argues that because of this link, it is important that managers monitor the factors that affect employee job satisfaction as turnover affects the effectiveness of the organisation. Through the identification of these factors, managers can circumvent turnover behaviour in time before actual turnover and retain talent.

The hypothesised relationships are seen in Figure 2, which aims to explain the links between manager's expertise, LMX, job satisfaction and intent to leave. The study investigates the strength of the relationship between a manager's expertise (technical and general skills) and the subordinate's intent to leave as an outcome variable, while LMX and job satisfaction are treated as mediating factors. This model will be tested in the South African context, in the IT profession.

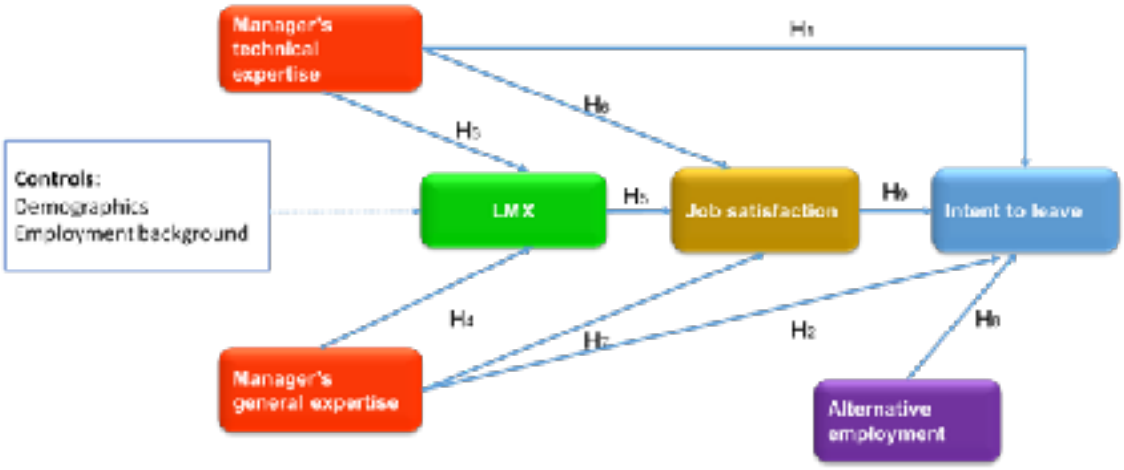

Figure 2: Conceptual framework of the study

Hypotheses

From the above review of literature and the proposed model, the study proposes the following hypotheses;

H1: A manager's technical expertise is negatively associated with an IT subordinate's intent to leave.

H2: A manager's general expertise is negatively associated with an IT subordinate's intent to leave.

H3: A manager's technical expertise is positively associated with LMX.

H4: A manager's general expertise is positively associated with LMX.

H5: LMX is positively associated with job satisfaction.

H6: A manager's technical expertise is positively associated with an IT subordinate's job satisfaction.

H7: A manager's general expertise is positively associated with an IT subordinate's job satisfaction.

H8: Alternative employment opportunities are positively associated with an IT subordinate's intent to leave.

H9: Job satisfaction is negatively associated with an IT subordinate's intent to leave.

Research questions

- Does the manager's expertise (technical and business skills) affect an IT subordinate's intent to leave?
- Is there a relationship between LMX and the manager's expertise?
- Is there an association between LMX and job satisfaction?
- Is there an association between job satisfaction and intent to leave?
- Is there an association between alternative employment and intent to leave?

Research delimitations

Some factors discussed in the literature such as Person-Supervisor fit (PS fit), job performance and homophilly are delimitations of this study as they are not explicitly measured as part of this study, even though they might have an influence on the results (it is worthy to note that some of this is in fact measured, for instance the technical level of the manager). It was important to mention these concepts and their influence on the topic but these were not measured to limit the study and to maintain a single focal point.

The quality of LMX is not measured across the dyad; it is measured only from the subordinate's perspective. Gerstner & Day (1997) recommended that an LMX study should look at both perspectives, furthermore Kenny & Judd (1986) state that this will result in a considerable amount of bias into the study. However, for this the study the reason for this decision was based on: Time constraints, avoiding the problem of interdependence where the score of one can be influenced by the other; lastly, the subordinate's perspective is more relevant for the purpose of this study. This is a limitation in that the study may not be able to infer to LMX measured from a manager's perspective. The quality

of LMX could also be affected by the amount of co-work time spent by the dyad, which was not factored in the study. To minimise these effects, construct validity was assessed precisely for items relating to LMX.

The study does not test for a causal relationship between the manager's expertise and the subordinate's intent to leave as this will be difficult to administer and difficult to control the effects of extraneous variables.

The study also needs to lookout for common source bias as Evans (1985) stated that it reduces the power to detect significant interactions which the study seeks to explain.

Assumptions

The study assumes that the respondents will reflect normal perspectives and experiences of working with a manager in the technical environment. Should the responses received not be a good representation of the IT professional's experiences, this will have severe implications on the findings especially since the whole study is based on the perceptions of the professional (including rating quality of management expertise, rating LMX, judging their overall job satisfaction and stating their intentions to leave).

Research methodology

The approach of this methodology was an explanatory study into how the manager's expertise affects the IT professional's intent to leave as mediated by LMX and job satisfaction. This section describes the data collection and analysis methods adapted for this study based on the conceptualised framework discussed previously.

The overall research paradigm chosen was the positivism approach, which relies on the fact that theories are created from measurable observations (Bhattacherjee, 2012). Therefore this study followed a quantitative research design that used data to investigate the research questions posed through mathematical and statistical analysis. The use of a quantitative design was based on the aim to research the IT professional's intent to leave phenomena. This method was suitable for this study because a quantitative study is objective, efficient and reliable and will provide precise measurement and analysis of target concepts (Sandström, Borglin, Nilsson, & Willman, 2011).

By using a quantitative design, it was easier to quantify the relationships among the variables (manager's expertise, LMX and intent to leave). In this study the independent variable, the manager's expertise was used to predict the movement of the outcome variable, intent to leave.

Research design

This study was deductive in nature in that the aim was to test concepts through building hypotheses from theory, use data and reduce it to a specific conclusion (Bhattacherjee, 2012). The research design followed a non-experimental approach in that it was used to examine associations among the manager's expertise and intent to leave (Sousa, Driessnack, & Mendes, 2010).

A questionnaire was used for data collection and analysis to measure intent to leave (Sandström, Borglin, Nilsson, & Willman, 2011). This allowed for data to be easily captured as closed questions were used and thus easily converted to numbers; it also permitted for a large number of variables to be analysed and

lastly it had the flexibility to look at a problem from different perspectives using different theories (Creswell & Plano Clark, 2011).

The questionnaire was developed on software called Qualtrics with a cover letter clarifying the aim of the study as well as assuring the respondent anonymity. The instrument was distributed via a link on the following platforms: WhatsApp, Facebook, email and LinkedIn.

Population, sampling procedure and sample

Population

The study was done in the South African corporate context. The population of the data was comprised of IT professionals, in particular the IT subordinates in South Africa including information, system and data analysts as well as programmers, data architects, administrators and engineers.

Sampling procedure

The sample was made up of IT subordinates working in the IT industry in South Africa. Convenience sampling was used as it was easier and faster to get access to the participants. Of the total of 300 surveys that were were distributed, the bulk of the questionnaires were distributed on LinkedIn via a mail link by searching for technical professionals using keywords such as; information, system and data analysts, programmers, data architects, data administrators, data scientists and data engineers etc. The rest were distributed through a mail list with colleagues from certain corporate organisations and contacted via email, Facebook or WhatsApp. The disadvantage of using this method is that it may introduce sampling bias, errors and limits generalisability which is discussed further below.

Sample

A total of 300 survey links were distributed to IT subordinates. A response rate of 129 (43%) individuals was achieved and this is deemed acceptable for studies (Sekaran, 2001).

Part one of the survey asks about the work and demographic profile of the respondents. The sample demographics are summarised in **Error! Reference source not found.** which shows descriptive analysis of the gender, age, qualification and tenure at the current organisation.

Overall, the average respondent was a black (58%), male (34%), middle aged (median age = 31) full-time employee, with a degree qualification (20.5%). They have 3 to 5 years' experience (21%) and tenure of 3 to 5 years in the current organisation (11%) and they intend to remain with the current organisation for 2 years or less (7%).

The sample showed that 62% of the subordinates were aware of their manager's formal education with 39% specifying that the qualification is a postgraduate (honours, masters, and doctorate).

Table 1: Demographic analysis of IT professionals

Demographic profile		%
Gender	Female	27.23
	Male	57.36
Age	25 years or less	20.93
	26 - 35 years	59.69
	36 - 45 years	13.18
	Older than 45 years	6.20
Race	Black African	58.14
	White	25.58
	Indian	11.63
	Coloured	3.10
Qualification	Grade 12 or less	3.10
	Certificate or diploma	13.95
	Degree	34.88
	Post graduate (Honours, Masters, Doctorate)	48.06
Employment type	Full-time employee	96.90
	Part-time employee	3.10
Duration at the current organisation	2 years or less	47.29
	3 - 5 years	30.23
	6 - 10 years	6.20
	More than 10 years	5.43

Research instrument

The research instrument was comprised of five sections: demographics and background, manager expertise, LMX, job satisfaction, intent to leave.

The collection and analysis of data was supported by *demographic and background* information as the controls of the study to minimise alternative explanations. Gender, employment type and the manager's formal education were coded as dichotomous variables (0 = male, 1 = female; 1 = Full-time employee, 0 = Part-time employee and 1 = yes, 0 = no). Ordinal measures were

coded as follows: Race; 1 = Black African, 2 = White, 3 = Indian and 4 = Coloured. The participant's age; 1 = 25 years or less, 2 = 26 – 35 years, 3 = 36 – 45 years and 4 = older than 45 years. The subordinate's and manager's education; 1 = grade 12 or less, 2 = Certificate or Diploma 3 = Degree and 4 = Post graduate (Honours, Masters, Doctorate). Job experience in the IT industry, organisational tenure and number of years intending to stay; 1 = 2 years or less, 2 = 3 – 5 years, 3 = 6 – 10 years and 4 = more than 10 years.

Alternative employment was used a control item and adopted from Jacobs & Roodt (2008) to measure the respondents view on alternative employment; "I feel that I do have alternative employment opportunities to my current job".

Technical expertise was used to assess the manager's extent of technical knowledge. Five measures were assessed. The first measure requested the subordinate to provide information regarding the manager's qualification in the technical field (if any) and the level of that qualification (by selecting between less than grade 12 to post graduate). The second item requested the subordinate to state the manager's number of technical experience in years. In addition, there were items that requested the subordinate to rate their manager's skills on a scale of 0 to 100 on items such as "The quality of your manager's technical knowledge" and "The quality of your manager's technical experience".

General management was used to measure the manager's knowledge of business processes, functions and application to the organisation objectives. As well as assessing the manager's ability to implement effective tasks aligned to the organisation strategy. Six items were used which included the subordinate rating their manager from 0 to 100 on items like "The quality of your manager's business skills". While other items were 5 point Likert scale such as "My manager is able to interpret business problems and develop technical solutions", "My manager is knowledgeable about the environmental constraints within which the organisation operates" adopted from Byrd & Turner (2001) as well as "My manager makes competent decisions" adopted from Williams & Anderson (1991) and lastly "I am impressed with my manager's knowledge of his/her job" from Erdogan and Enders (2007).

Leader member exchange measured six items derived from Graen & Uhl-Bien (1995) using 5 point scale items. The items include questions such as: “My manager understands my job problems and needs”, “My manager understands my potential” and “I know how satisfied my manager is with what I do?”

Job satisfaction was used to measure the individual’s contentment with their job thus far. Four items were used from Brayfield & Rothe (1951) which were made up of 5 point Likert type scale questions such as “There are some conditions concerning my job that could be improved” and “Overall, I am satisfied with my job”.

Intent to leave evaluated the subordinate’s level of determination to depart from the organisation. Six items were adopted from Jacobs & Roodt (2008) which used five point Likert rating scale assessing items such as “I consider leaving my current job”.

Statistical analysis

The study was aimed at testing the theory discussed in the literature review through hypotheses.

Data was analysed according to the different research questions. This study employed regression analysis to estimate relationships between the dependent and independent variables (Lee G. , 2015).

Multiple item scales from multiple variables were assessed using factor analysis to check whether the items cluster together or separate into discernible sets of variables (Lee G. , 2015). Confirmatory factor analysis (CFA) was employed to test factor structure and used to summarise factors in the questionnaire, establish associations between variables and constructs, and provide construct validity for the scales in the questionnaire (Williams, Brown, & Onsman, 2010). The pre-specified groups of variables for intent to leave, LMX, job satisfaction and experience were assessed to check the extent to which they lie in their factors based on correlations and overlaps (Lee G. , 2015).

Structural equation modelling (SEM) involves using CFA to test the loading of the observed variables onto the latent constructs then assessing the paths between the latent constructs (Lee G. , 2015) as shown in the conceptual model. Path analysis, which is a form of multiple regression analysis, studies the differences between dependent and two or more independent variables (Lee G. , 2015). This was used to look at the relationship between the manager's expertise (independent variable), turnover intentions (dependent variable) as well as LMX and job satisfaction (both as independent mediating variables) and determine the degree and extent of causal relationships between variables.

Demographics and background information were analysed as descriptive stats by measuring their central tendency scores such as mean, standard deviation and weighted mean.

Validity and reliability

Validity measures the quality of the study (Bhattacherjee, 2012), through the research design. In this quantitative study, the use of the survey was deemed valid if the items actually measure the constructs discussed, that is, the manager's expertise, LMX, job satisfaction, alternative employment and intent to leave.

Criterion validity is the generalizability of the study to a wider population (Tappen, 2011). In this study, the sample was the IT subordinates in South Africa that decided to participate in the survey. Since the stratified sampling procedure was not followed, there lies a risk that the sample, especially since the sample size is small, will not represent the wider population. Therefore, for future studies, effort into finding a representative sample must be ensued in order to ensure validity of the study.

The use of a questionnaire was good for external validity and not internal validity (Bhattacherjee, 2012). External validity is good for studies that do not test for causal effects (Bhattacherjee, 2012). Internal validity means that the results can be trusted as it infers causality based on theory but this cannot be

proved without a properly designed experiment which is not done in this study. External validity also talks to generalisability of the study, because convenience sampling was used, this means the results cannot be generalised to the wider population (Bhattacherjee, 2012).

In this study content or construct validity was achieved through the fact that the measures used were adopted from previous studies that proved their performance and acceptance in the literature over time (Bhattacherjee, 2012).

Convergent validity, similar to internal validity was tested using CFA to check that the responses for the each construct items are consistent and that they cluster (Lee G. , 2015). While discriminant validity assessed that the different constructs remain separate from other clusters (Lee G. , 2015).

The use of standardised statistical techniques like regression and path analysis (which test the strength of the conceptualised model) also ensure validity in the study.

Reliability refers to the accuracy and consistency of collection of data (Lee G., 2015). In this study reliability was achieved through ensuring that the structure of the questionnaire uses multi item scales across like-minded questions. This ensures research consistency in the measures of variables. Reliability was assessed by using the coefficient alpha. In addition, to minimize measurement error, instructions were provided to ensure that participants understand the purpose of the study (Marczyk, Dematteo, & Festinger, 2005). Reliability was achieved when the results showed consistency with previous research (Marczyk, Dematteo, & Festinger, 2005), especially the link between job satisfaction and intent to leave which has been proven consistent over time (Mobley W. , 1977).

Ethics

The questionnaire clearly stated that participation is completely voluntary, anonymous and confidential. To ensure this, the questionnaire was distributed

via a link thus the respondent's identification was not captured. The study reports all results whether negative or unexpected, no data was excluded.

Results

This section discusses the statistical analysis of the measures of interest. The items analysed were the manager's technical and general expertise, LMX, job satisfaction and intent to leave.

The statistical programme used for the analyses is Statistical Analysis System (SAS). The results start with the presentation of the assessment of reliability and validity on the initial relationships for the proposed model through multiple regressions. This is followed by a brief summary of the fit statistics for the proposed model (global and local fit), and lastly the results from the structural equation modelling (SEM) technique to determine how the model is integrated as a whole (including latent variable structuring).

Table 2 provides summarised correlation and descriptive statistics for the investigated variables. The indicators of the latent concepts loaded satisfactorily. All the Cronbach alpha values for the latent constructs except job satisfaction were above .80 which is considered as high reliability. The correlations suggest some significant but not strong relationships between intent to leave and the variables (technical expertise, general expertise and job satisfaction). LMX plays a little role as it is weakly and non-significantly correlated with intent to leave. There is a significant negative relationship between job satisfaction and intent to leave, this finding is consistent with theory that the happier a professional is with their job the less likely they are to leave (Lambert, Hogan, & Barton, 2001). Technical and general expertise is correlated with all other variables, providing initial support for the hypothesised relationships.

From Table 2, in summary, significant statistics were reported by all the latent variable measurements. Therefore, the structural models are estimated next.

Table 2: Correlations and descriptive statistics for regression variables

	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)
(1) Technical expertise	3,64	0,93	(0,91)					
(2) General expertise	4,01	0,82	0,59*	(0,89)				
(3) Job satisfaction	3,46	1,09	0,36*	0,52*	(0,73)			
(4) LMX	3,69	1,01	0,36*	0,63*	0,43*	(0,92)		
(5) Alternative employment	3,79	1,17	-0.08	0,04	0,04	0,11	(1)	
(6) Intent to leave	3,29	1,15	-0,20*	-0,35*	-0,58*	-0,16	0,2*	(0,86)

Notes: * = p <0.05. Standardised Cronbach alphas are on diagonal in parentheses.

The first fit attempt of the structural model paths was based off theory and the hypothesised model. Even though this was an acceptable fit, the model could be improved through the following structural alterations: removal of two job satisfaction questions that were worded in a negative manner and exclusion of some technical expertise questions from the construct. A summary of the adjusted model fit was assessed using different indices. The final measurement of the model was a good fit, the indices are: Chi-Square = 199 p = <.0001, SRMSR = .00687, RMSEA = .0611 (90% CI = .0449 - .00762), CFI =.9450, NNFI = .9361 and normal residuals. The root mean square of approximation (RMSEA) is at an acceptable rate which Lee, G. (2015) suggests an RMSEA less than .8 is acceptable. The local fit statistics are good, with the largest normalized residual = .41. The R-squared statistics range from .36 to .49, and the standardized paths ranging from -0.67 to .78 as seen in Figure 3.

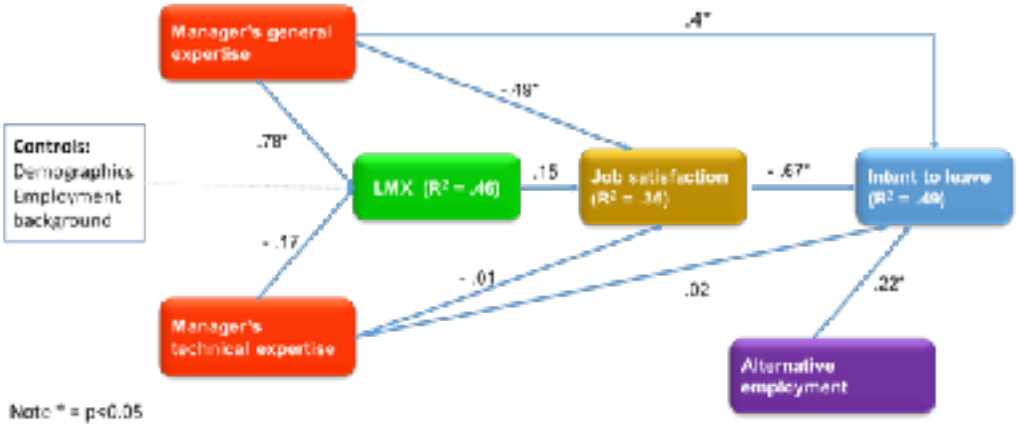

Figure 3: Standardised paths for model

In the model in Figure 3, all paths that are significant are somewhat large, statistically significant and positive except for the path between job satisfaction and intent to leave as well as general expertise and job satisfaction.

SEM analysis was conducted to determine the causal effects of exogenous variables on endogenous variables. The structural effects on job satisfaction, LMX and turnover intent are reported in Table 3. The results show that, all the variables, except the manager's technical expertise, have statistically significant effects on intent to leave. Furthermore, all the variables that have significant effects are in the hypothesised direction.

Table 3 shows the direct, indirect and total effects of the SEM structural model, utilising both standardised and unstandardized paths with their standard errors.

Table 3: Structural effects on LMX, Job satisfaction and Intent to leave

		Endogenous variables					
		Intent to leave		Job satisfaction		LMX	
Causes		**B (SE)**	**β (SE)**	**B (SE)**	**β (SE)**	**B (SE)**	**β (SE)**
Technical expertise	Direct			-0,004(0.12)	-0,01(0.12)	-0,21(0.15)	-0,17(0.12)
	Indirect	0,02(0.08)	0,02(0.08)	-0,03(0.03)	-0,03(0.03)		
	Total	0,02(0.08)	0,02(0.08)	-0,03(0.12)	-0,03(0.12)	-0,21(0.15)	-0,17(0.12)
General management	Direct			0,59*(0.21)	0,49*(0.16)	1,15*(0.21)	0,78*(0.11)
	Indirect	-0,49*(0.13)	-0,40*(0.09)	0,14(0.11)	0,12(0.09)		
	Total	-0,49*(0.13)	-0,40*(0.09)	0,73*(0.18)	0,61*(0.11)	1,15*(0.21)	0,78*(0.11)
Job satisfaction	Direct	-0,67*(0.12)	-0,67*(0.06)				
	Indirect						
	Total	-0,67*(0.12)	-0,67*(0.06)				
LMX	Direct			0,12(0.09)	0,15(0.12)		
	Indirect						
	Total			0,12(0.09)	0,15(0.12)		
Alternative employment	Direct	0,15*(0.06)	0,22*(0.08)				
	Indirect						
	Total	0,15*(0.06)	0,22*(0.08)				

*=p<0.01. Note. B represents the unstandardized Maximum Likelihood structural coefficients. β represents the standardized Maximum Likelihood structural coefficients. SE represent standard error

H1: A manager's technical expertise is negatively associated with an IT subordinate's turnover intentions.

The correlation statistics in Table 2 show that there is a weak inverse relationship between the manager's technical expertise and intent to leave ($r = -0.2$, $p<0.01$). From the SEM analysis results on **Table 3**, the manager's technical expertise has insignificant effects on the subordinate's intent to leave. The analysis showed an indirect effect, however this was not statistically significant ($p>0.05$). Therefore, the hypothesis is rejected; even though the manager's technical expertise is negatively associated with the IT subordinate's turnover intentions, the path coefficients are insignificant.

H2: A manager's general expertise is negatively associated with an IT subordinate's turnover intentions.

The correlation statistics in Table 2 show that there is a moderate inverse relationship between the manager's general expertise and intent to leave ($r = -0.35$, $p<0.01$). From the SEM analysis results in **Table 3**, a manager's business expertise does not have a direct effect on the subordinate's intent to leave, however, an indirect effect exists at -0.49 ($p<0.01$). Therefore, the hypothesis is accepted; a manager's general expertise is negatively associated with the subordinate's thoughts of quitting. For this study it shows that when the manager possesses interpersonal/business skills, this decreases the subordinate's turnover intentions.

H3: A manager's technical expertise is positively associated with LMX.

The manager's technical expertise has a weak insignificant direct effect on LMX. Furthermore, the correlation between the manager's technical expertise and LMX is moderate ($r = 0.36$, $p<0.01$) as shown in **Table 2.** Therefore, the hypothesis is rejected because the manager's technical expertise is not positively associated with LMX.

H4: A manager's general expertise is positively associated with LMX.

From **Table 3**, the manager's general expertise has a large significant direct effect on LMX. The correlation showed a large association between general management expertise and LMX, hence good evidence of a relationship ($r = 0.63$, $p<0.01$), as shown in **Table 2**. Therefore, the hypothesis is sustained; the manager's general expertise is positively associated with LMX.

H5: LMX is positively associated with job satisfaction.

Table 3 shows that there is no significant path between LMX to job satisfaction despite having a moderate correlation ($r = 0.43$, $p<0.05$). The R-squared value of 0.46 indicates that approximately 46% of the variance in job satisfaction is predicted by LMX. Therefore, the hypothesis is not supported, because LMX is not associated with job satisfaction.

H6: A manager's technical expertise is positively associated with an IT subordinate's job satisfaction.

The manager's technical expertise has a weak insignificant direct and indirect effect on job satisfaction as shown in **Table 3**. The correlation showed a moderate association between the manager's technical expertise and job satisfaction ($r = 0.36$, $p<0.01$) as shown in **Table 2**. Therefore, the hypothesis is rejected; because the manager's technical expertise has no association with job satisfaction.

H7: A manager's general expertise is positively associated with an IT subordinate's job satisfaction.

The manager's general expertise has a fairly large significant direct effect on job satisfaction as seen in **Table 3**. The correlation showed a large association between the manager's general expertise and job satisfaction, hence good

evidence of a relationship ($r = 0.52$, $p<0.01$) shown in **Table 2**. Therefore, the hypothesis is sustained; the manager's general expertise is positively associated with job satisfaction.

H8: Alternative employment opportunities are positively associated with an IT subordinate's intent to leave.

Alternative employment has a large significant direct effect on intent to leave as seen in Table 3 and has a weak correlation to intent to leave ($r = 0.2$, $p<0.05$). Therefore, the hypothesis is sustained; alternative employment opportunities are positively associated with the subordinate's intent to leave.

H9: Job satisfaction is negatively associated with an IT subordinate's intent to leave.

The correlation showed a large negative association between job satisfaction and intent to leave, hence good evidence of an inverse relationship ($r = -0.58$, $p<0.01$), as shown in **Table 2**. Table 3 shows that there is a significant indirect effect from job satisfaction to intent to leave exists. The R-squared value of 0.36 indicates that approximately 36% of the variance in intent to leave is predicted by job satisfaction. The hypothesis is supported; job satisfaction is negatively associated with the IT subordinate's intent to leave.

To summarise the empirical tests, the manager's general expertise does appear to act as an explanatory variable on intent to leave on its own in an indirect manner as well as even through mediation effects of job satisfaction but not when mediated by LMX. The manager's technical expertise does not play a role on the subordinate's intent to leave even when mediated by LMX and job satisfaction. Contrary to literature discussed earlier, for the IT professional, the manager's technical expertise is not associated with their turnover intentions.

Discussion

In this study, a test of the manager's expertise using a full structural measurement model of turnover intent with LMX and job satisfaction as the mediating variables was conducted using a national sample of IT subordinates. The study will discuss each hypothesis and its finding by linking the findings to literature.

Technical expertise and intent to leave: From the results, the association between the manager's technical expertise and the subordinate's intent to leave was not supported. In addition, there was no literature covered in this study that explicitly proved this relationship. In the 90's, job requirements preferred technical skills over general managerial skills (Byrd & Turner, 2001; Todd et al., 1995) also some literature argued that in order for a manager to be successful in the IT industry, they are required to have a technical background and expertise (Gillard, 2009; Todd et al., 1995; Watson et al., 1990). From the results, due to the lack of association, one can assume that with time this requirement has changed from the subordinate's perspective. Even though, as Mael, Waldman & Mulqueen (2001) stated that manager's with a technical background are seen as more credible, this is could be assumed as just a perception and has nothing to do with how it affects the subordinate's overall turnover intentions. The other possibility could be that the sample population is at the advanced or maintenance stage of their careers (with several years of experience) as stated by Baird & Kram (1983), that is, they are well equipped, trained, experienced and can work autonomously without much assistance therefore that they did not see the need to have a technically proficient manager.

General expertise and intent to leave: An inverse relationship and indirect effect was found between the manager's general expertise and the IT subordinate's intent to leave. This means that the more the manager is perceived as encompassing the skills of a good manager such as business, communication and interpersonal skills, the less likely the subordinate intends to leave. This is supported by literature which argued that these skills are the determinant

success factor for managers in the IT industry (Byrd & Turner, 2001; Cheney & Lyons, 1989; Gillard, 2009; Watson, et al., 1990). When the manager's interpersonal skills and EI are high, the professional is less likely to experience thoughts of quitting; instead it fosters organisational commitment and loyalty to the manager (Igbaria & Guimaraes, 1993; Goleman, Boyatzis & McKee, 2001; Graen & Uhl-Bien, 1995). This is further backed by the trend over time that saw general skills becoming more popular in the job specs (Cheney & Lyons, 1980). The finding could also be explained in that the average sample population has 3 to 5 years' experience, they may have approached the advanced or maintenance stage of their careers as stated by Baird & Kram (1983) which possibly means that they are approaching or just started senior management positions where they need to start to learn soft skills, business operation skills and be more conceptual instead of very technical in order to advance their careers (Mallette, 2005). Thus, the sample population may have perceived more value in a manager with business and human skills rather than technical skills as of importance. This is further backed by Kane et al. (2017) showing that employees were six times more likely to leave an organisation that lacked leadership with soft skills that aimed at developing and growing their career goals.

LMX and the manager's general expertise: The findings show that the manager's general expertise has a positive effect on LMX. The association between general management and LMX is supported by theory in that, when a manager displays good interpersonal skills such as; communication, caring, constructive criticism and collaboration, this contributes to the establishment of a good quality relationship between the dyad (Graen & Uhl-Bien, 1995). Furthermore, Bassellier, Reich, & Benbasat (2001) and Gagnon & Michael (2004) proposed that in order for the manager to lead the team effectively, they have to form relationships with the subordinate built upon trust, support and information sharing which can be deemed as a highly developed exchange or partnership.

The study did not look at the demographic characteristics, values and behavioural styles between the manager and the subordinate to be able to

determine the role of homophily and PS fit on the results. As argued by the social exchange theory, similarity brews a higher degree of information sharing thus a positive exchange (Kim et al., 2010). It can be assumed that this could also have been a potential addition to the strength of the association, in that people with similar socio-demographic, behavioural and intrapersonal characteristics are more likely to be connected and have a personal network (McPherson, Smith-Lovin, & Cook, 2001) thus proving the relationship between the dyad to be a positive exchange.

Further backing from literature is observed between the concept of EI and the establishment of relationships. When a manager displays soft skills which correlates to high levels of EI this tends to build stronger relationships (Goleman, Boyazis, & McKee, 2001). When the quality of LMX is perceived as high and the EI of the leader is high, this creates an environment of information sharing, learning, trust and risk taking (Goleman, Boyazis & McKee, 2001; Graen & Uhl-Bien, 1995). While a low quality of LMX and low levels of EI create an environment of stress, role ambiguity and ambiguity which decreases the subordinate's performance and increases turnover (Igbaria & Guimaraes, 1993; Goleman, Boyazis & McKee, 2001; Graen & Uhl-Bien, 1995).

LMX and the manager's technical expertise: The empirical analysis showed that the manager's technical expertise has no effect on LMX. The lack of correlation is understandable in that LMX is based on the quality of the relationship formed and relationships are formed from interpersonal interactions which are not encompassed as part of technical expertise. Even though Baird & Kram (1983) argued that the relationship as an exchange is positive when there is an interchange of resources including technical, psychological and organisational resources, the sample population could have interpreted the questionnaire in a way that associates LMX with the general expertise and not technical expertise. Therefore this association was not supported in the study.

LMX and job satisfaction: The association between LMX and job satisfaction was not observed in this study, this can be possibly be explained from the perspective of Mobleys study shows that there are several stages involved in the withdrawal process such as job satisfaction and alternative employment

opportunities (Mobley W. , 1977) however, LMX is not listed as one of them. With that said, in literature there is evidence of LMX having an association with job satisfaction (Gerstner & Day, 1997) which in turn leads can lead to turnover intentions (Mobley W. , 1977), however this link was not observed in this study. Even though literature revealed noteworthy correlations between LMX, satisfaction with the level of supervision, job satisfaction and turnover intentions (Castro & Cogliser, 1999; Gerstner and Day, 1997), in this study that is not the case. As reported before, this could be because the sample population size was too small to measure mediation or because the LMX dyad was only assessed from the subordinate's perspective and not from both the manager and the subordinate. Another reason could be that the sample did not associate job satisfaction with how well they get along with their managers, it could be that their definition of job satisfaction is based off other variables not tested in this study such as pay and promotion for example.

Job satisfaction and the manager's expertise: The manager's general expertise was found to have a fairly large association with job satisfaction. This finding could be explained by the fact that when the manager's interpersonal skills are perceived as good by the professional, they will in turn have a positive outlook on their job (Purani & Sahadev, 2008). Research has shown that when a manager shows that they care about an employee's well-being and about their career development, this increases job satisfaction (Lambert, Hogan, & Barton, 2001). In this study it showed from the questionnaire that this high association is based off the fact that the subordinates felt enthusiastic about their work; that their most important needs were not compromised and overall they were satisfied with their jobs.

As opposed to the manager's general expertise, the manager's technical expertise has no direct effect on job satisfaction. A moderate correlation was found between the two latent variables; however correlation does not imply causation. This result was based off the subordinate's rating of the manager's technical knowledge and experience and ability to develop technical solutions. These items seem to not play a role in the subordinate's job satisfaction, this ties back to what was stated above that the subordinate could possibly be well

experienced enough to work autonomously therefore this would not contribute to their perceptions regarding job satisfaction.

Therefore, we can conclude that the manager's technical expertise does not play a role on the subordinate's job satisfaction and subsequently their intent to leave.

Alternative employment on intent to leave: As supported by theory, when the professional knows they have viable job opportunities which are promising, they are more likely to increase thoughts of quitting (Lambert, Hogan, & Barton, 2001). This is also observed in the sample population of the subordinate. The literature links this decision to job dissatisfaction (Lambert, Hogan, & Barton, 2001), for this study however, these factors were not assessed together. In addition, Mobleys study shows that alternative employment opportunities is part of the withdrawal process which can lead to turnover intentions and finally actual turnover (Mobley W. , 1977).

Job satisfaction and intent to leave: As expected from literature, job satisfaction had an inverse relationship with intent to leave (Mobley, 1977; Mobley, Horner & Hollingsworth, 1978) for IT professionals. From this study, it means the respondents that were satisfied with their jobs were not anticipating to quit, hence the negative correlation and vice versa. In the questionnaire, job dissatisfaction entailed all aspects of the professional's job were compromised and from literature it was found that when there are high levels of uncertainty (thus compromised) the creative output and innovative solutions decline (Hoyt & Gerloff, 2000), which can have a knock on effect of the professional's job satisfaction, then performance and finally their intent to leave the organisation.

Recommendations to management

Due to the lack of generisability to the IT population, the following should be deemed more as suggestions than recommendations as convenient sampling was used.

Organisations have begun to realise the importance of the employee's in relation to organisational effectiveness and success. This is supported by Brown, Duncan, Harris, & Kelly (2003) who proposed that organisations must have and retain the largest number of talented employees to maintain their competitive edge. Therefore, it is important for organisations to be aware of the psychological factors that influence employee's intent to leave in order to be able to retain the best talent. Best talent means employees that are high performers and those have the skills that allow the organisation to run effectively and therefore maintain competitive advantage. Furthermore, the retention of quality talent is highly important in the IT industry as it is a fast paced industry and the cost and time required to up skill a new employee would be a set back to the effectiveness of the organisation (Tymon, Stumpf, & Smith, 2011). Organisations that attract and retain talent are those that provide development opportunities in terms of training (formal and on the job), career development by supporting career goals and providing an array of work experience that align to the company's strategy (Kane, Palmer, Phillips, & Kiron, 2017). The survey results from Kane et al. (2017) showed that organisations that lacked this resulted in employees (spanning from junior to senior management) intending to leave six times more than those that offer these opportunities.

From the study, the manager needs to ensure that they develop their general managerial skills, these are both interpersonal skills and business operations expertise and less likely focus on technical expertise as the also proved by the respondent from the Kane et al. (2017) study that only 18% of the subordinates valued those skills. In the new age, professionals are looking for more than just a leader that creates a strategy and an organisation that provides a service. Manager's need to keep in mind that they are dealing with people and that people are the lifeline and backbone of the organisation (Kane et al., 2017). Manager's need to invest in their people, a good example they could follow is adopting the leadership style of a servant leader. These are leaders that place the well-being of the people above their welfare (Jaiswal & Dhar, 2017; Mittal, 2012), they are characterised by showing care, being attentive, influential,

forward looking, empowering, encourage growth and development of the employee (Jaiswal & Dhar, 2017).

From the findings and literature, job dissatisfaction leads to turnover (Mor Barak, Nissly, & Levin, 2001). The solution for turnover from the past studies is to improve the employee's job satisfaction (Jayaratne & Chess, 1984). The manager needs to be proactive in ensuring that they understand the cognitive process that can lead to increased turnover, especially in relation to IT professionals. This includes understanding what level they feel that they are in the organisation, their career development goals as well as the level of support required from each of them. If managers adopt some or all of these skills, this will have a positive effect on the IT professional's job satisfaction as seen in the findings and this will enforce employee engagement thus attracting and maintaining talent (Kane et al., 2017). Lastly, manager's need to learn the reasons of leaving from the professional's that left in order to avoid the same occurrence in the future.

The human resources (HR) teams in organisations must ensure that job specs include general managerial skills as one of the important factors when recruiting for IT managers. These must include skills such as: effective communication, conflict resolution, ability to run projects and caring for the employees etc. Furthermore, HR needs to hold the managers accountable for employee retention especially if the reason to leave was based on management dissatisfaction.

The industry representative bodies such as the Information Technology Association of South Africa (ITA) and The Institution of Information Technology Professionals South Africa (IITPSA) are also encouraged to understand the psychology behind intent to leave in IT professionals so as to enable the members to understand the importance of retaining talent and implementing these strategies in their different organisations.

Areas for future research

Due to time constraints the study used non-probability sampling known as convenience sampling therefore some IT roles were not covered in the study due to lack of responses, thus there is no holistic view of the IT professional hence impacting generisability. Further studies should ensure sampling methods that accommodate all divisions within the IT industry thus ensuring external validity. It is recommended that stratified random sampling should be used with a larger sample. This is backed by Bhattacherjee (2012) stating that this method provides greater reliability and precision.

Due to limited literature on the mediating role between the manager's expertise, LMX and job satisfaction on the IT subordinate's intent to leave. The items used in the questionnaire were adopted from previous studies that were not necessarily analysing the hypothesised conceptual model; hence they might have not covered the overall objective of this study fully. It is suggested that the questionnaire be modified to be more specific especially in analysing the technical expertise aspect. Furthermore, the questions used were leaning more towards general expertise and mostly soft skills. The LMX and job satisfaction questions did not exclusively highlight if the job satisfaction is due to the manager's expertise (especially the technical expertise), hence the assumption that the participants' night have understood those questions in the perception of general management skills rather than technical skills.

As mentioned in the delimitations, further studies should assess the quality of LMX across the dyad between the IT subordinate and the manager.

The instrument also limited the participants to the scales presented; this method limits the user to express themselves fully. It is difficult to infer cause-effect relationships from questionnaires because of their non-temporal nature and also there are chances of respondent bias (Bhattacherjee, 2012). Therefore, it is recommended that in future, a mixture of both quantitative and qualitative (interviews) methods should be used.

The work of Mobley and colleagues proposed that demographics such as age, gender, educational level and tenure can be used as indicators of job satisfaction, intent to leave and actual turnover (Mobley, 1982; Mobley et al., 1978, 1979), however this does not hold true for demographic variable race (Mueller, Boyer, Price, & Iverson, 1994). It is recommended that in future studies these effects should be tested to see the effect of demographic characteristics on this conceptual model.

There is a vast multitude of studies done on LMX, job satisfaction and intent to quit. However, it was found that there is limited literature on the complete integration of the latent constructs used in this study, that is, the manager's expertise role on those popular constructs in the IT industry in South Africa. Thus reference was made using other service professions. Therefore, more studies of this nature need to be conducted. Furthermore, the study should include more psychological variables of interest that could potentially influence the results such as role stressors, job performance, PS fit and organisational commitment to name a few. This will allow a holistic understanding of the IT professional's intent to leave based off the manager's expertise.

Limitations

Most of the items used were Likert scale questions, this is a limitation in that the individual was limited to the options provided even though they might have felt in between points and therefore it was difficult to tell the amount of truth from the respondent. The questionnaire did not have other languages available, this could have been necessary in some instances.

The study does not test a causal relationship between a manager's expertise, perceived LMX, job satisfaction and turnover intentions.

Discretion should be used when interpreting the results due to the limitations of the study. The sample size obtained was small especially to run a credible mediation analysis. Also the results cannot be generalised to the whole population because non-probability convenience sampling was used to obtain responses.

Cognisance should be taken that LMX was analysed in a biased manner as the manager's perspective was not taken into account due to time constraints of conducting the study.

In addition, there are multivariate linkages that exist among the latent constructs in this study that were not taken into account which could play moderating effects on the constructs which could have affected the results such as personal variables, PS fit etc.

Conclusion

The overall integrated model for technical expertise was not supported in this study; the entire path for technical expertise, with LMX and job satisfaction as mediators was not supported. The results however, show that the manager's general expertise is associated with intent to leave through the mediation of job satisfaction only, while the mediation of LMX was not supported. The explanation for this is explained above for the lack of association between LMX and job satisfaction.

Despite the argument from the Bassellier et al. (2001) and Kane et al. (2017) studies stating that organisations need a well-rounded manager who possesses both general and technical expertise, this was not the case for this study. From the discussion, the results showed that in today's age the professional is more concerned with a manager that displays interpersonal, leadership and business functional skills instead of technology management skills. The study further went on to show that there is no association between the manager's technical expertise and LMX or their job satisfaction, but the opposite is true for when the manager has general expertise. This further proves that the IT professional values the manager that provides guidance, career support, facilitates development, shares knowledge and deals with the uncertainty that comes with the technical environment that IT professional's find themselves in (Baird & Kram, 1983).

In terms of the research questions posed the following was discovered:

- The manager's general expertise does affect the subordinate's intent to leave. However, no association was observed for technical expertise.
- There is a relationship between LMX and the manager's general expertise but not for technical expertise.
- There is no association between LMX and job satisfaction.
- There is an association between job satisfaction and intent to leave. The more dissatisfied the subordinate, the more likely to leave.
- There is an association between alternative employment and intent to leave. The more alternative options available, the more the professional is likely to leave.

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