

# IMPACT OF STAFF TURNOVER ON KNOWLEDGE MANAGEMENT IN SRI LANKAN SOFTWARE COMPANIES

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(09/9056)



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This Dissertation was submitted to the Department of Computer Science & Engineering of the University of Moratuwa in Partial Fulfilment of the Requirement for The Degree of Business Administration.

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## ABSTRACT

The concept of Knowledge Management (KM) can be considered as more important in the context of organizational learning. In this context, the contribution of KM on Information Technology (IT) industry is enormous. IT industry in Sri Lanka can be considered as one of the fast growing in the current economic environment. Hence, this research tries to examine the impact of staff turnover (ST) on knowledge management. The research problem in this study can be considered as follows,

“Is there any Impact of Staff Turnover on Knowledge Management in IT companies in Sri Lanka?”

The questionnaire method has been adopted to identify the causal relationship in Knowledge Management and Staff Turnover. It has administered to employees in the field of software industry. The data was collected by means of a structured questionnaire based on the Knowledge Management and Staff Turnover.

The major finding emulating from the study was that there is a positive relationship between high Staff Turnover and weak Knowledge Management. The study showed that organizational factors such as Managerial Style, Lack of Recognition, Lack of Competitive Compensation System and Toxic Workplace Environment significantly influenced employee Knowledge Management in software industry. Furthermore the individual factors such as Leadership, Organization, Technology and Learning can be considered as factors which affect to employee turnover in software industry. This study can be expanded to other areas like banking to generalize the research findings.

**Keywords:** Information Technology, Knowledge Management, Sri Lanka, Staff Turnover, Software Industry.



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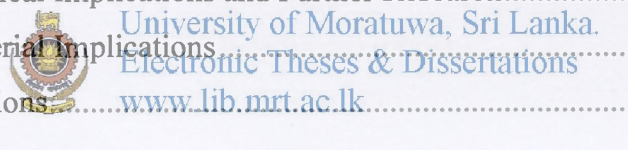
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## LIST OF ABBREVIATIONS

Abbreviation	Description
IT	Information Technology
IC	Intellectual Capital
ICT	Information and Communication Technology
KM	Knowledge Management
ROI	Return on investment
ST	Staff Turnover
SEE	Software Engineering Environments
SME	Small and Medium-sized Enterprises
SPSS	Statistical Package for the Social Sciences



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# CHAPTER 1

## INTRODUCTION

This introductory chapter describes the background to the problem domain, the main objectives, a brief introduction to research method and a brief review of the previous research that has been conducted in the area.

### 1.1 Background

In Sri Lanka, the Information Technology sector can be considered as one of the major revenue generating sources. Likewise, a high Staff Turnover can be seen in the industry. Furthermore knowledge management can be considered as one of the many important factors in any industry. Hence the importance of this for IT cannot be ignored. However no proper research has been done to identify the impact of staff turnover on Organizational Knowledge Management in the Sri Lankan context. Hence it is worthwhile to link these two by looking at the context of IT in Sri Lanka.



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Knowledge Management creates a new working environment where knowledge and experience can easily be shared and also enables information and knowledge to emerge along with a flow to the right people at the right time so that they can act more efficiently and effectively (Akhavan et al. 2009). An elementary success factor of KM is to have a common understanding of the terms "Knowledge Management" and "Knowledge Sharing" and how they apply to your situation and needs. Some organizations choose not to use these terms at all because they are not accepted within the culture (Koenig et al. 2004).

By recognizing this fact, an organization is actually adhering to a critical success factor of KM as listening to your employees and customers. The definition of KM has evolved quite a bit since the mid 1990s. It started simply as valuable information in action, in which value is determined by the organization and the recipient. Although this definition still held true today, KM has evolved into more rigorous



discipline that is subject to the same scrutiny as other business processes within an organization and is expected to show a return on investment (ROI) (Koenig et al. 2004).

According to Sri Lanka Information Communication Technology Association (SLICTA) Rising Demand survey (2007), the overall IT workforce grew by around 20% year-on-year over the last two years. That is a growth of nearly 10,000 IT professionals. The growth of the workforce in IT companies and non-IT companies nearly matched the predicted figure in the previous survey. Figure 1.1 below shows the overall growth trend. The workforce figures for 2003 and 2004 are from the previous survey.



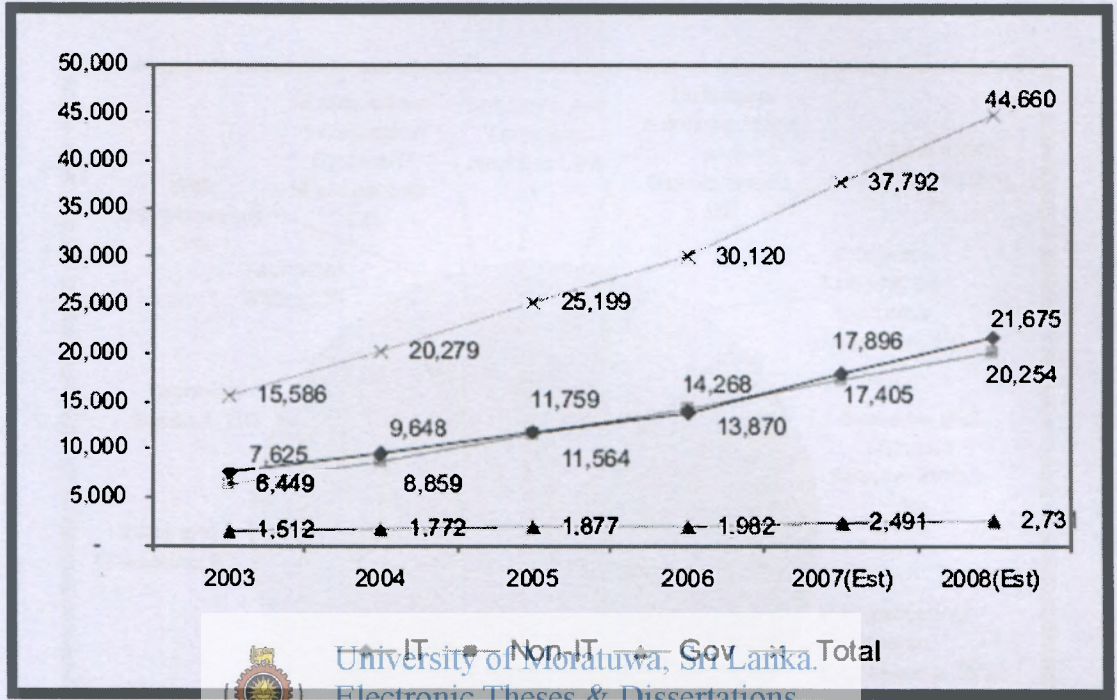
**Figure 1-1: Overall IT workforce growth trend 2003 – 2008**

(Source: Rising Demand, 2007, p.6.)

However some research identify that the IT workforce grew by 9,841 across the IT, non-IT and Government sectors to stand at 30,120 as at the end of 2006. The workforce in the IT sector increased by 4,222 (122 short of expectation) and the non-IT sector grew by 5,409 (169 short of expectation) over the two years from 2004. The Government sector lagged behind with a growth of only 210 over the same



period (633 short of expectation). The Government agencies that were included in this sample were Ministries, Departments and Corporations. The sample did not include any Provincial Government Organizations.



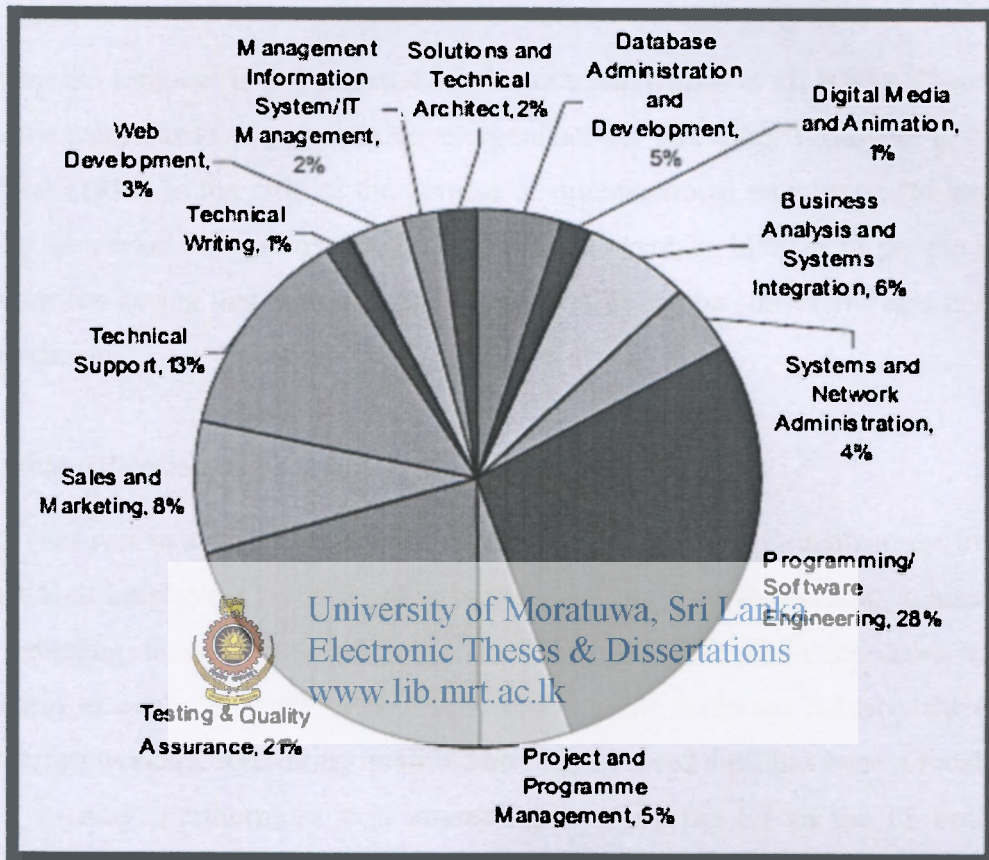
**Figure 1-2: Growth of the IT workforce by sector 2003 - 2008**

(Source: Rising Demand, 2007, p.14.)

The figure 1.2 shows the overall job demand in Sri Lanka. The demand for IT professionals in the IT sector is 4,026, accounting for more than half (52%) of the overall demand. The Non-IT sector requires another 3,137 (41% of the overall demand) and the Government requirement is 507 (7% of the demand). Although the Government requirement seems small it is more than double the growth over the two years since 2004. Hence it is understandable that there is a high demand in the IT sector which will lead to staff turnover and as a result knowledgeable and experienced staff also moving inside the industry (Rising Demand, 2007). The Rising Demand survey has been done in the Sri Lankan Information, Communication and Technology sectors. The highest demanding job category is ‘Software Engineering’, which was 28%. When considering all three sectors, Testing & Quality Assurance



was the second highest demanding job category (21%) and Technical Support staff also play an important role in Sri Lankan ICT industry and they can be considered as the third highest demanding job category (13%). This information has been illustrated in the figure 1.3.



**Figure 1-3: Demand of IT Staff**

(Source: Rising Demand, 2007, p.9)

This research is focusing to only direct IT companies. The Programming/Software Engineering has the highest demand rate in IT industry, which was 28% compared with entire job categories (Rising Demand, 2007). Therefore, staff demanding on a single job category is creating a knowledge gap in IT industry, which makes high demand for other job categories in the same industry. Because of the nature and the significant growth in industry many companies face difficulties in recruiting skilled people.



According to Alwis (2008), the problem of staff turnover may arise in any industry as well as in the Public Sector. Therefore, skilled employees leave organizations and eventually knowledge assets will be lost. As a result it is critical to implement an appropriate procedure to ensure that information and knowledge could be kept in the organization.

Employees' turnover is a much studied phenomenon (Shaw et al. 2001). There is no standard reason as to why people leave organizations. The term "turnover" is defined by Price (1977) as the ratio of the number of organizational members who have left during the period being considered, divided by the average number of people in that organization during that period. In the IT sector, this can be considered as a common phenomenon.

## **1.2 Identification of Problem**

Staff Turnover is a major issue in any industry in the world. Organizations invest a lot on their employees in terms of induction and training, developing, maintaining and retaining them in their organization. Therefore, Management takes various measures to retain the staff in the organizations. The Software industry thrives on knowledge workers. Recruiting qualified and experienced staff has been a focal point to IT industry. Furthermore it is interesting to study the ST in the IT sector by looking at the above perspective.

Hence the following problem has been highlighted in this study.

**“Is there any Impact of Staff Turnover on Knowledge Management in IT Companies in Sri Lanka?”**

This study discusses how Staff Turnover will affect on Knowledge Management. KM can be considered as one of the important factors in today's market driven modern society and could be defined as a factor which enables information and knowledge to emerge and flow to the right people at the right time so that they can



act more efficiently and effectively to share their knowledge in work environment (Akhavan et al. 2009). In the IT sector too it can be seen that the staff turnover had been highlighted in different research forums. Staff turnover can be defined as the rotation of workers around the labour market between firms, jobs and occupations and between the states of employment and unemployment (Abassi et al. 2000).

### 1.3 Research Objectives

Being an employee in a software industry, the author has practically experienced the problems and realized that the turnover problem is becoming critical day by day. And also the author has identified this industry as the future of an economic boom in Sri Lankan. On the other hand, KM plays a vital role in knowledge economy. Especially in the IT sector it can be considered as a dominant force leading for success.

Hence, the author has decided to find out the existing knowledge in this area by conducting several web searches on ST and KM. Some information has been found on impact of ST and KM studies carried out through out the world. Accordingly no research has done in Sri Lanka to identify the relationship between ST and KM. Hence, it was decided to fulfill the requirement by studying the Impact of Staff Turnover on KM in Sri Lankan software companies.

The following objectives were considered.

***Objective 1: To identify the significant factors that affects Staff Turnover in Sri Lankan IT Industry.***

Here this study will be made to find the most influential factors for staff turnover. According to the findings of literature review staff turnover has been defined by using following variables, Managerial Style, Lack of Recognition, Lack of Competitive Compensation System and Toxic Workplace Environment.



***Objective 2: To identify the organizational units most prone to staff turnover in Sri Lankan IT Industry.***

The objective 2 examines the organization units/departments which can be considered as most significant to Sri Lankan Software industry. Sections covered include Database Administration and Development, Digital Media and Animation, Systems and Network Administration, Project and Program Management, Technical Support, Web Development, Solutions and Technical Architect, Business Analysis and Systems Integration, Programming and Software Engineering, Testing & Quality Assurance, Management Information Systems/IT Management, Technical Writing and Sales and Marketing. In addition, this section will provide the Management some guidance on which categories of IT sector has more involvement in staff turnover.

***Objective 3: To study and analyze the effect of staff turnover on Knowledge Management in Sri Lankan IT Industry.***

This is the main argument of research. This will identify the significant relationship with the effects of Staff Turnover on Knowledge Management in Sri Lankan IT industry.

***Objective 4: To develop a ranking for KM factors of those affected by staff turnover in Sri Lankan IT industry.***

It will evaluate the key factors that will lead to staff turnover in this study and factors such as Leadership, Organization, Technology and Learning have been covered. Out of these factors, the most influential factors have been ranked, by using certain statistical techniques.



## 1.4 Scope of the Study

Sri Lankan Software companies have been selected and purposive sampling used in this research as a sampling strategy. The names of those who responded respondents were initially determined by the Management of each organization through company record based on their job responsibilities, position held and involvement in the subjects studied. Thirteen job categories were selected by considering the demarcation governed by ICTA. However, those who responded were also selected based on the researcher's individual judgment where permitted on the grounds that they could provide the necessary information needed for the research. The data was collected through the distribution of a questionnaire.

The main purpose of conducting this study is to ascertain factors such as growth of the software industry governed by factors, such as the growth of the industry. Further the factors of staff turnover and knowledge management and relationship between KM and ST has been discussed in the literature review.

## 1.5 Significance of the Study



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Over the past decades, the software industry in Sri Lanka has developed at a rapid pace. Nature of the industry is always dynamic and the environment is ever changing. Hence this study helps to identify how staff turnover will affect KM. Moreover, it identifies the impact on staff turnover on KM for Sri Lankan Software companies. It tries to understand the empirical gap to enable decision makers to make decisions by looking at different scales of organizations and the context of organization as a whole. Furthermore it understands the differences in its nature in KM. A finding of this research is helpful for the researchers to compare this scenario with other countries. In addition, this might be momentous for the development of the industry as well as the quality of employees.



## **1.6 Organization of the Dissertation**

The chapter outline for the proposed study is given below.

### **Chapter One: Introduction**

This chapter will discuss the background of the study, scope of the study, a description of the research problem, the main objective of the study, significance of the study and the limitations of the study.

### **Chapter Two: Literature Review**

This chapter describes the literature review and will present the literature relevant to the research. It will examine both theoretical and conceptual reasoning and empirical studies relevant to the research theme.

### **Chapter Three: Research Methodology and Design**

Methodology will describe the conceptual framework; operationalization of the conceptual framework, hypothesis, and sample in the study. Further it will discuss data collection methods and data analysis methods.

### **Chapter Four: Data Analysis and Interpretation**

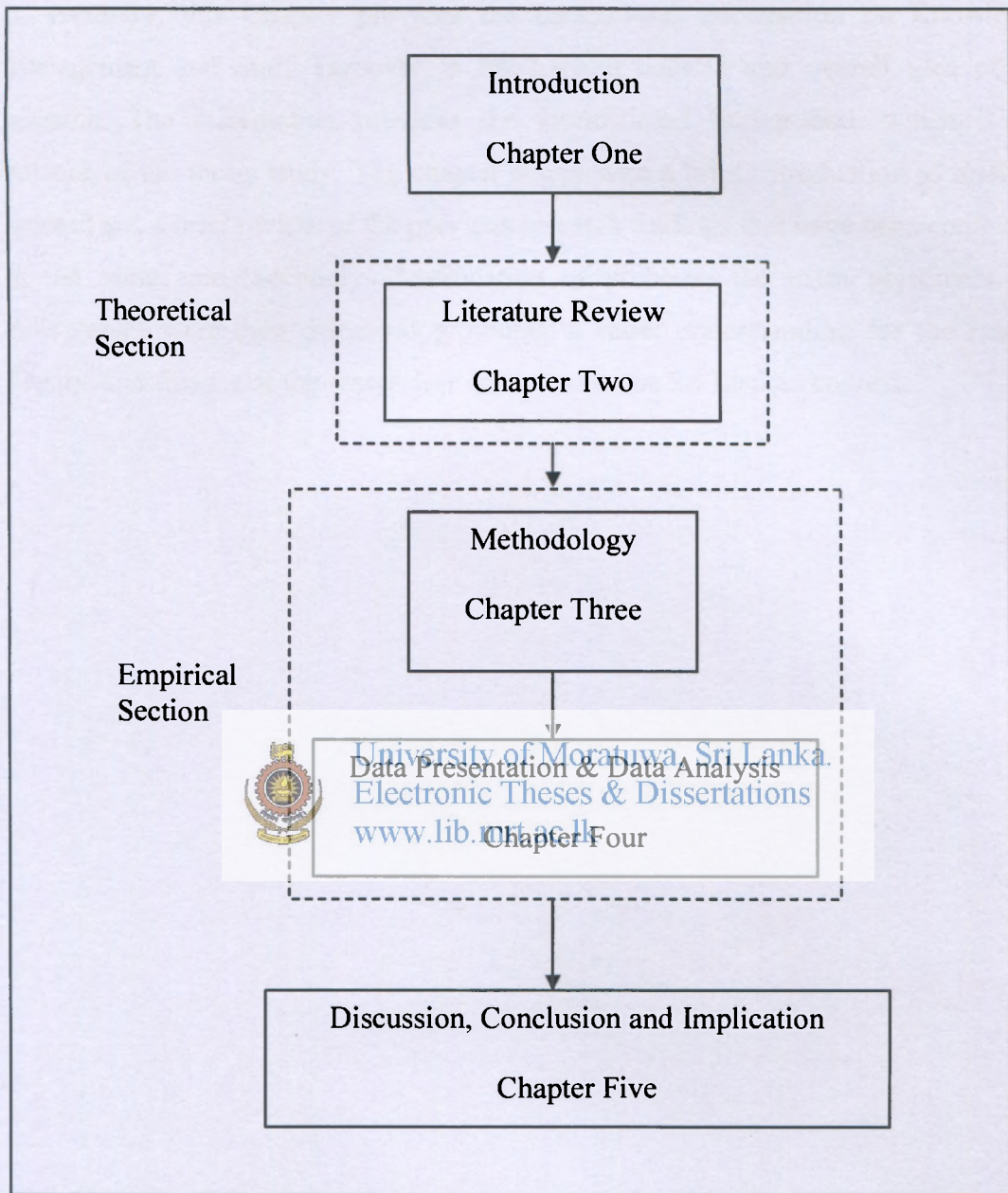
This chapter explains Data presentation and sample profile, how the goodness of the data is measured, how the hypotheses were tested and the results of hypothesis tests with qualitative measurements.

### **Chapter Five: Recommendation, Conclusion and Implication**

In this chapter, the author explains the final outcome of the study. That will present the Summary, Conclusion, discussion and findings, theoretical and managerial implications. Furthermore it will discuss the importance of further research on the area explored.



A diagram illustrating the research structure is presented in Figure 1-4.



**Figure 1-4: The Research Structure**

## 1.7 Chapter Summary

In summary, this Chapter provides the background information on Knowledge Management and Staff Turnover in Sri Lankan context and overall idea of the research. The information provides the foundational background, which is the balance of the thesis study. The chapter began with a brief introduction to research method and a brief review of the previous research findings that have been conducted in the same area. Secondly identification of problem, the main objectives and deliverables were then discussed providing a better understanding for the reader. Finally significance of the research is discussed in the Sri Lankan context.



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## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

A proper academic background relating to the Management problem is essential in order to frame the conceptual model of a research project. In order to achieve this task, the researcher has conducted an extensive literature survey related to adoption of Staff Turnover and Knowledge Management practices. It was found that only a very low number of researches have been done on staff or employee turnover impact to KM in various industries including IT all over the world. This chapter includes the extracts of such international studies as well as the information related to the research subject gained through various other sources such as preliminary interviews with academic staff.

The researcher intends to provide the technical knowledge on ST and KM, which are the two main concepts focused under study with the aim of providing a clear knowledge to the reader about factors required in implementing such concepts.

Finally, the prior studies in implementing similar concepts would be discussed with the aim of identifying the independent variables, which affects the successful implementation of staff turnover concept. Further dependent variable dimensions of KM have been critically examined in the literature.

## 2.2 Understanding of the Staff Turnover

It is worthwhile to understand the concept of staff turnover with the backing of literature. According to Ongori (2007) Organizations invest a lot on their employees in terms of induction and training, developing, maintaining and retaining them in their organizations. Therefore, Managers at all costs must minimize employee's turnover. But again Kevin et al. (2004) argued that through his research that there is no standard framework for understanding the turnover process as a whole, and a wide range of factors have been found useful when it comes to interpreting employee turnover, and these have been used to model turnover in a range of different organizational and occupational settings.

In addition Ongori (2007) explains the purpose of benefits of understanding staff turnover. Therefore, there is a need to develop a fuller understanding of the staff turnover, more especially, the sources- what determines employee turnover, effects and strategies that Managers can put in place to minimize turnover. Along with globalization that is heightening competition, organizations must continue to develop tangible products and provide services, which are based on strategies created by employees. These employees are extremely crucial to the organization since their value to the organization is essentially intangible and not easily replicated (Stovel et al., 2002).

In the study "Turnover the real bottom line", Abbasi et al. (2000) state the value of turnover as top most important topic to any organizations. Therefore, the author clarifies that Managers must keep in mind that employees are the major contributors to the efficient achievement of the organization's success. They must hire and train the right people, adapt their managerial style to today's worker, provide recognition and pay for superior performance, and create a nontoxic and productive work environment. Those Managers who cannot or refuse to change face the prospect of excessive departures that can imperil the business strategy and be ruinous to the performance of their organization.



### 2.3 Definition of Staff Turnover

Various authors have defined the concept of staff turnover in different perspectives,

Abbasi & Hollman (2000) defines that the Employee turnover is the rotation of workers around the labour market; between firms, jobs and occupations; and between the states of employment and unemployment. But Price (1977) has defined “turnover” as the ratio of the number of organizational members who have left during the period being considered as divided by the average number of people in that organization during the period. Meanwhile Woods (1995) as cited by Ongori (2007) frequently states Managers refer to turnover as the entire process associated with filling a vacancy: either each time a position is vacated, voluntarily or involuntarily, a new employee must be hired and trained. This replacement cycle is known as turnover.

### 2.4 Factors Affecting Staff Turnover

According to Ongori (2007) most researchers have attempted to answer the question of what determines people's intention to quit by investigating possible antecedents of employees' intentions to quit. To date, there has been little consistency in findings, which is partly due to the diversity of employees included by the researchers and the lack of consistency in their findings. Therefore, there are several reasons why people quit from one organization to another or why people leave organizations.

The National Study of Turnover in Nursing and Midwifery by McCarthy et al. (2002) research study finds out factors that effect staff turnover in their industry. In deeply looking at staff turnover those factors can affect any industry. However this research study provides the following factors against the staff turnover such as Age, Work Experience, Tenure, Kinship responsibility, Education, Promotional opportunity, Pay distributive justice ,Work environment, Alternative employment opportunity or job market, Job commitment, Job satisfaction, behavioral intention to stay or leave.



Firth et al. (2004), investigates variables that may be predictive of intentions to leave a job, and tests a model that includes mediating variables. A total of 173 retail sales people completed questionnaires measuring commitment to the organization for which they worked, job satisfaction, stress (job stress), supervisor support, focus of control, self-esteem, the perceived stresses in the job and their intention to quit. This clearly indicates that this is an individual decision that makes one to quit.

There are also other factors, which make employees to quit their organizations, such as poor hiring practices (Recruitment practices), managerial style, lack of recognition, lack of competitive compensation system in the organization and toxic workplace environment (Abassi et al.,2000). Further it has argued that very often when these employees move, they migrate to competing organizations with the knowledge and trade secrets acquired from their former employers thereby creating an even more critical situation for the latter.

Samuel et al.(2009) argued factors such as competitive salary, good interpersonal relationships, friendly working environment, and job security which were cited by employees as key motivational variables that influenced their decision to quit or stay further in the organizations. Also Woods et al. (1998) conducted a study of turnover and diversity in the lodging industry, surveying almost 5,000 General Managers of hotel trade. These researches concluded that the five most cited internal causes of turnover were rate of pay, communication problems, Lack of advancement opportunities, Lack of recognition for a job well done and conflict with Management.

Ramlall (2003) indicates that the total cost of employee turnover is about 150% of an employee's salary. Because of this high cost of turnover, the organization that is the focus of this article sought to understand their employee's turnover intentions and the reasons for the potential turnover. Through the various instruments used, the researcher sought to understand why employees would choose to leave the organization. As indicated in research findings salary, lack of challenge and opportunities in one's position, and the inability to advance in one's career were found to be the most significant factors. Other factors identified by those who



responded included lack of recognition, ineffective leadership, and a work environment that lacked teamwork spirit. Other factors cited included employees wanting to be paid at or above the market rate for their job classification and that there should be consistency in the ways in which employees are paid.

Abeyssekera (2007) discuss six variables, which were affected to staff turnover, and also highlighted that those variables are the main key elements of a research framework. The framework shows that MEIL (Marketing Executive Intention to leave) is influenced by six main HRM practices. The HRM practices are realistic job information, job analysis, career development, compensation, management style and work family balance. These six HR practices are labeled as the independent variables. In addition, the author explains that success of the Leasing Companies depends on the amount of quality business brought by the marketing executives operating in a highly competitive environment. These marketing executives are the backbone of Leasing Companies. It is the responsibility of the Contemporary Management Research 234 management to retain the marketing staff by motivating them. When a marketing executive leaves a Leasing Company, the company loses not only the training cost, but also the valuable portfolio handled by the executive. It is revealed that most of the time the marketing executive leaves with his portfolio as the client is psychologically attached to the executive.

Staff turnover can occur through employee respect. Booth (2007) explained the development of a strong culture which improves a sense of confidence and respect between employees elicit a response for a better working life which is more likely not to be found elsewhere. Staff turnover increases because the work environment and jobs which people perform are not held in sufficient esteem to meet the desires of employees who develop a higher self-worth.

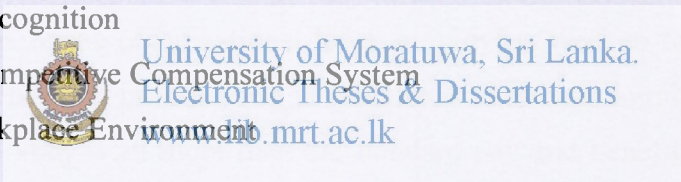
An empirical study done on retention and reduction of employee turnover in both Public and Private Sector Organizations, Samuel (2009) has identified Turnover is not only destructive to organizations it is also costly. Every time an employee quits, a replacement must be recruited, selected, trained and permitted time on the job to gain



experience. Apart from the costs that are directly associated with recruiting and training a new employee, other indirect costs exist. Furthermore, Bliss (2007) and Sutherland (2007) contend that organizations lost productivity, social capital and suffer customer defection when a productive employee quits. Knowledge, skills and contacts that a departing employee takes out of the organization constitutes a huge loss. These attributes are, in most cases, lost to a competitor organization which may use this to gain competitive advantage.

Finally, based on the above theoretical observations, and evaluations of the factors for implementing Staff turnover variables the following key factors are most highlighted during the literature review. Hence, for ease of comprehension and measurement the conceptual model of Abassi et al. (2000) has been used.

- a) Recruitment Practices
- b) Managerial Style
- c) Lack of Recognition
- d) Lack of Competitive Compensation System
- e) Toxic Workplace Environment



#### **2.4.1 Recruitment Practices**

Putting the right people in the right position at the right time and then training them properly is one of the most critical tasks any organization may face. Good Recruitment Practices and screening practices and effective job matches can increase the speed with which new hires are moved to their profitable use. Excessive turnover is driven by and is the natural and inevitable result of poor management. Overall, organizations fail because of managerial incompetence. Poor judgment, poor communication skills, lack of foresight, and a narrowly focused view of the management job, are some of the reasons why Managers fail in the human relations area as well as others Abassi et al. (2000).



## **2.4.2 Managerial Style**

The experience, background, and training of Managers appear to have a significant impact on the issue of turnover. Studies show that the backgrounds of Managers profoundly affect the mobility of people who work for them. A Company's work environment is a reflection of the personality and philosophy of its leadership. Chief Executive Officers, who have a particular staff function background, say accounting, often are deficient in their knowledge of other functional areas such as production and marketing necessary to successfully manage and socially integrate the whole organization. They are more likely to have a desperate strategy with regard to energizing, activating, and unifying the different functional areas of the organization Abassi et al. (2000).

## **2.4.3 Lack of Recognition**

Lack of personal and team recognition translates to the employee as a lack of success. Regardless of the organizational level, employees want to feel good about themselves and their work, have a sense of purpose, and to be recognized when they do their jobs well. They want more than the standard pay and benefits package that formed the heart of traditional retention plans. In addition, some employees appreciate the challenge by Management to grow professionally. They consider recognition as a form of reinforcement and feedback for their accomplishments. There is little wonder why lack of recognition is the number one reason for people to leave their jobs Abassi et al. (2000).

## **2.4.4 Lack of Competitive Compensation System**

Another parameter of personnel policy the design of an organization's compensation system-may have a critical impact on its ability to achieve its strategic goals in the human relations area. Overall, a poorly designed wage policy where salaries and benefits are not competitive can lead to affect turnover. Workers expect tangible rewards for their good work and they like to be paid or receive financial rewards commensurate with their worth to the organization. For this reason, the organization's

objectives and philosophies about what it will pay its workers, as well as concerns about pay equity within the organization and in relation to other organizations, must reinforce and reflect the organization's culture, external environment, and business strategy (Abassi et al. (2000).

#### 2.4.5 Toxic Workplace Environment

Creating a positive and upbeat able work environment that nurtures trust and induces workers with a sense of common purpose is not easy. Employees want a feeling of belonging and security. Their decision to stay or leave may depend on working conditions, the characteristics of the employer and the "toxicity" of the work environment. Organizations can develop policies and programs to enhance the skills, competencies, and intellectual growth of their employees to give them reason to stay and to achieve their career aspirations. The signs of a toxic workplace are,

- a) When an organization requires people to choose between having a life and a career.
- b) When an organization treats people as if they are a factor of production.
- c) When an organization looks at its people and sees them as costs, salaries, benefits, and overhead.

That is, some organizations do not see their employees as assets While employee allegiance and devotion are not automatic anymore, if there is a positive work environment that is enriching and rewarding to employees, in which they have an affinity for those around them, they are more likely to stay and to energetically participate in all the organization's activities (Abassi et al. 2000).





## 2.5 Understanding of the Knowledge Management

Knowledge Management is not a single process, which is collaboration of human resources, enterprise organization and culture, as well as the information technology, methods and tools that support and enable it. O'Leary et al. (2001) describes a KM system that facilitates creation, access and reuse of knowledge, and its main goals are to promote knowledge growth, communication, preservation and sharing. In the context of software development, KM can be used to capture the knowledge and experience generated during the software process. Although every software development project is unique in some sense, similar experiences can help developers to perform their activities. Reusing knowledge can prevent the repetition of past failures and guide the solution of recurrent problems. So, to be effective, a KM system should be integrated to the software process. Software Engineering Environments (SEEs) integrates collections of tools supporting software engineering activities across the software development lifecycle.

According to Montequin et al. (2006), making the transition becoming a firm that manages efficiently in all aspects of knowledge is not a trivial step, even less when talking about small and medium-sized enterprises (SMEs). Knowledge and KM are vital areas for most organizations nowadays, especially those that are knowledge intensive. Firms should develop the right circumstances to stimulate the development of knowledge. Implementing KM means something more than implementing a set of IT tools: it involves changes in the organizational structure, process and culture. The first step to change from a Traditional Company into a KM is to be aware of the knowledge of the organization.

According to Uwe (1997), in reality, two types of knowledge are like two sides of the same coin, and are equally relevant for the overall knowledge of an organization. Tacit knowledge is practical knowledge that is key to getting things done, but has been sadly neglected in the past, falling very often a victim to the latest management fad. For instance, the recent spate of business process re-engineering initiatives, where cost reduction was generally identified with the laying off people the real and



only repositories of tacit knowledge has damaged the tacit knowledge of many organizations. Explicit knowledge defines the identity, the competencies and the intellectual assets of an organization independently of its employees; thus, organizational knowledge is par excellence, but it can grow and sustain itself only through a rich background of tacit knowledge.

In addition to that, Yu-Chung et al. (2005) explains Knowledge as not easily measured or audited, so organizations must manage knowledge effectively in order to take full advantage of the skills and experience inherent in their systems and structures as well as the tacit knowledge belonging to the employees of the firm. KM can more effectively integrate and administer a firm's information technology base and assist in the development of a systematized information model.

It is important to understand, how KM will be able to help enterprises to understand the effect that different enablers have on the case companies. According to Yeh et al. (2006) in the process of carrying out knowledge management; enterprises have to face the varying conditions of corporate culture, workflow processes, and the integration of group members' knowledge. They also need strong support from top Management, because it is possible that during the process they will encounter resistance from employees. Enterprises also need to increase the usage of information technology in order to help the problem regarding the flow of information. Therefore, other than the collection of KM theories, if through the study of actual experiences of various companies we can identify the key enablers, then we will be able to observe the various aspects of KM as well as its overview.

In addition Stankosky, M.A., (2005), highlighted the results of 11 research efforts that address various aspects of KM, all with the intention of adding to the Management body of knowledge. The following key benefits, derived from their research, are only the beginning of this quest,

- a) KM requires the integration and balancing of leadership, organization, learning and technology in an enterprise-wide setting.



- b) KM must not only recognize requirements and conditions for success, but also support the desired benefits and expectations of the enterprise.
- c) Streamlined organizational structure, with strong cultures, has a higher chance of KM success.
- d) An atmosphere/culture of trust is necessary to sharing knowledge.
- e) National culture affects the values and practices of every organization in Knowledge Management implementation, especially at the lower levels.
- f) KM technologies contribute to organizational growth only if the flow and context of knowledge are supported.
- g) KM technologies are useful in managing and leveraging intellectual capital, but the size of the organization is a major variant.
- h) Successful KM technology implementation requires an organizational culture that promotes a blend of product and people orientation.
- i) KM success factors are dominated by management ones, such as culture, process, and organization, with technology as the least important.
- j) KM criteria for success should include both soft and hard measures if top leadership is to support KM initiatives.
- k) Knowledge assets are strategic, and must be accounted for and valued accordingly.

## 2.6 Definition of Knowledge Management

Prior studies defining knowledge Management as Ouintas et al. (1997) defines “KM is to discover, develop, utilize, deliver, and absorb knowledge inside and outside the organization through an appropriate management process to meet current and future needs”. But Allee (1997), Davenport (1998), Alavi et al. (2001) describe KM as “managing the corporation’s knowledge through a systematically and organizationally specified process for acquiring, organizing, sustaining, applying, sharing and renewing both the tacit and explicit knowledge of employees to enhance organizational performance and create value”. Gupta et al. (2000) defines KM as a process that helps organizations find, select, organize, disseminate, and transfer important information and expertise necessary for activities. Interestingly Bhatt

(2001) defines KM as a process of knowledge creation, validation, presentation, distribution and application. Nevertheless, Holm (2001) perspective of KM is different as he mentioned it as getting the right information to the right people at the right time, helping people create knowledge and sharing and acting on information. Furthermore, Horwitch et al. (2002) define KM as the creation, extraction, transformation and storage of the correct knowledge and information in order to design.

## **2.7 Key Factors for Knowledge Management**

Bixler (2002) states that there are four pillars to support enterprise-wide KM initiatives: leadership, organization, technology and learning. Managers develop business and operational strategies to survive and position for success in today's changing environment, so leadership is needed. Those strategies determine vision, and must align KM with business tactics to drive the value of KM throughout the enterprise. For an organization to succeed, the value of knowledge creation and collaboration should be intertwined throughout the enterprise. Operational processes must be aligned with the KM framework and strategy, including all performance metrics and objectives. Technology enables and provides the entire infrastructure and tools to support KM within the enterprise. Organization learning must be addressed with approaches such as increasing internal communications, promoting cross-functional teams and creating a learning community.

Davenport et al. (1998) conducted an exploratory study in 24 companies, one of the aims being to determine the factors associated with their effectiveness. As a result, 18 projects were classified as successful, from which eight common success factors were identified. They were linking KM to economic performance or industry value, a clear purpose and language, a standard and flexible knowledge structure, multiple channels for knowledge transfer, a knowledge-friendly culture, a technical and organizational infrastructure, change in motivational practices, and Senior Management support.



Drucker (1993) has described knowledge, rather than capital or labor as the only meaningful economic resource in the knowledge society, and Senge (1990) has warned that many organizations are unable to function as knowledge based organizations, because they suffer from learning disabilities. Although, there is recognition that the knowledge society and the knowledge economy have arrived, and that knowledge is a key business asset, organizations are still in the early stages of understanding the implications of KM. The reasons behind the organizations are lack of learning disabilities. Therefore, learning culture is a most important resource to KM.

In addition Mathi (2004) defines Knowledge management is a process that helps organizations finds, select, organize, disseminate, and transfer important information and expertise to gain business advantage. In Mathi's research findings the successful implementation and sustenance of drive for the KM initiatives were indentified as Culture, Organization, Strategy, Systems and Infrastructure, Effective and Systematic Processes and Measures.



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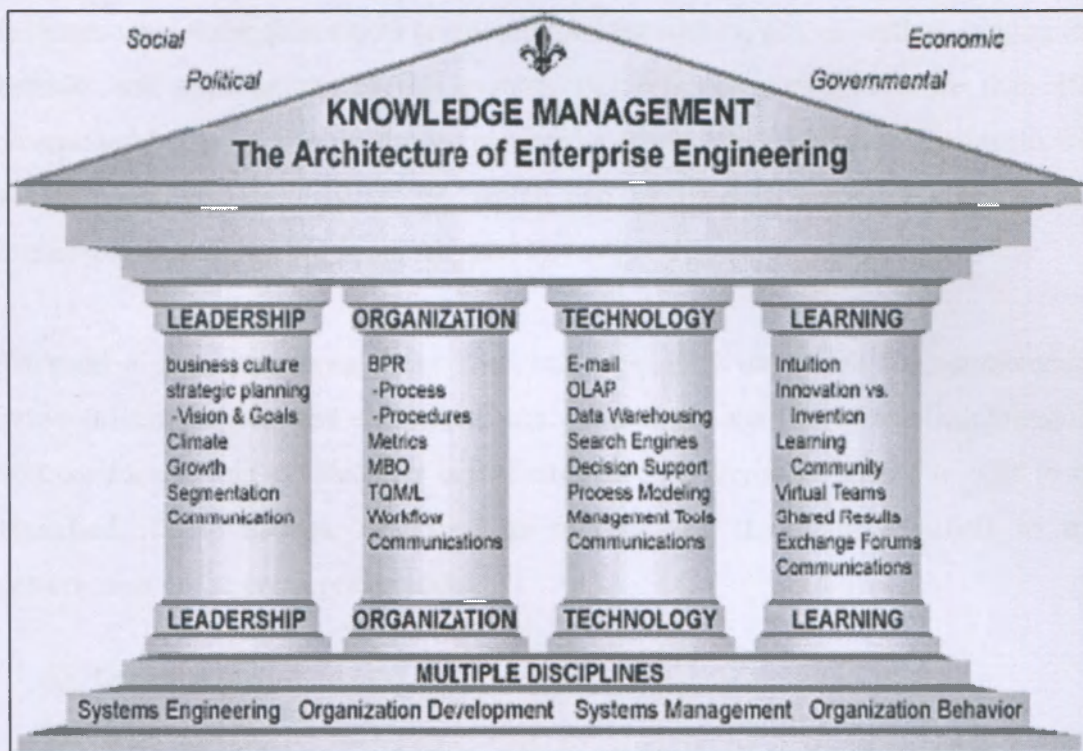
Hasanali's study (cited in Ranong et al., p. 12) is related to management in an organization. This study maintains that the success of KM depends upon many factors. In the point of view of the authors, there are some interesting factors which should be adapted to KM. We need to identify and examine these factors for our study. Hasanali's critical success factors were Leadership, Culture, Structure, roles, responsibilities, Information Technology infrastructure and Measurement.

Rudy Ruggles manages the ongoing research into Organizational Knowledge Management by the Ernst & Young Center for Business Innovation. Ruggles (1997) argument is Knowledge becomes embedded in the firm's routines and culture. New recruits learn from old hands purely by working alongside them, and exposure and seasoning is a far more important learning mechanism than training. In such an environment it is safe to assume that sufficient knowledge and capabilities exist in the organization, or that incremental learning occurs fast enough, to deal with contingencies.

Wong (2005) argues that there is a strong link to a business imperative, with a compelling vision and architecture, knowledge leadership, a knowledge creating and sharing culture, continuous learning, a well-developed technology infrastructure and systematic organizational knowledge processes.

According to figure 2.1 four pillars of KM help to understand the factors with effect to KM. According to Stankosky et al. [1999] leadership deals with the environmental, strategic and enterprise level decision making processes involving the values, objectives, knowledge requirements, knowledge sources, prioritizations and resource allocation of the organization's knowledge assets. It stresses the need for integrative management principles and techniques, primarily based on systems thinking approaches. Further the organization deals with the operational aspects of knowledge assets, including functions, processes, formal and informal organizational structures, control, measures, process improvement and business process reengineering. The adoption of Technology deals with the various information technologies peculiar to supporting and/or enabling KM strategies and operations. That is one way used which relates to technologies that support the collaboration and codification of KM. Finally, learning deals with organizational behavioral aspects and social engineering. The learning pillar focuses on the principles and practices to ensure that individuals collaborate and share knowledge to the maximum. Emphasis is given to identifying and applying the attributes necessary for a "learning organization." All four pillars must be balanced in order to avoid failing the whole system (Stankosky et al. 2001).





**Figure 2-1: Four Pillars of Knowledge Management**

(Source: Stankosky, 2005, P.6.)



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Latimer (2002) argued that three phases of the staff turnover process, all of which contribute to the cost of turnover: according to him Separation costs associated with lost or decreased productivity and disruption to operations as an incumbent leaves, with the position being possibly vacant for a period and displaced work falling on others. Secondly acquisition is described as costs associated with advertising, interviewing, selecting and employing a replacement. Finally Knowledge transfer and training was costs associated with lost institutional knowledge, the learning curve of the replacement and on-the-job training of replacements.

Finally, Based on the above theoretical observations and evaluations of the factors for implementing knowledge management variables the below key factors are most highlighted during the literature review. Therefore, for ease of comprehension and measurement the conceptual model of Bixler (2002) has been used. Dr. Charlie Bixler examined the drivers for, and value delivered from, KM to an enterprise. He

indicates what the requirements and conditions for success are, as well as ranking the benefits and expectations of this system. His research surveyed more than 100 enterprise Managers. The results are expected to serve as a foundation for developing a KM capability maturity model, which can be used to assess the design and implementation of a KM (Stankosky 2005).

To build a conceptual model for KM that adequately expressed the relationships between technological and cultural factors, an in-depth analysis of existing literature was conducted; this enabled key organizational characteristics related to KM to be identified. These factors, described as follows, are the main elements in the construction of the conceptual model.

- a) Leadership
- b) Organization
- c) Technology
- d) Learning

### 2.7.1 Leadership



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According to Drucker (1998) there is a link between leadership and innovation. All innovation is work rather than genius, it requires knowledge, skill and focus, and there are clearly people who are more talented innovators than others. Hence the concept of leadership in this regards cannot be ignored.

Furthermore Hubbard et al. (2002) describes thus Leadership does not mean just having leaders at the top - rather it is about creating leaders throughout the organization. The role of a knowledge leader is to provide strategic visions, motivating other organization for all people to achieve the company objectives, and effectively communicate by giving right solutions and clearly explaining the subject matters to other people through organization , act as a change agent, coach others around, model good practices, and carry out the knowledge agenda (Debowski, 2006).



In addition Bixler (2002) defines Leadership which develops business and operational strategies to survive and position for success in today's dynamic environment. Those strategies determine vision, and must align KM with business tactics to drive the value of KM throughout the enterprise. Focus must be placed on building executive support and KM champions. A successful implementation of a KM system requires a champion or leader at or near the top of an organization who can provide the strong and dedicated leadership needed for cultural change. Moreover, it is also understood that knowledge leaders should religiously explain the goals of knowledge management to all concerned so that people can identify their roles in achieving those goals. They need to provide guidance on any change taking place in the processes and also priorities needed to reach those goals (Debowski, 2006).

The role of leadership in managing knowledge in software organizations very critical, recent research conducted by Sing (2008) study on the relationship as well as the impact of leadership styles on knowledge management practices in a software firm in India. Sing explained leadership style in software organization as found to be directive in nature where the highest concern is to closely regulate job behaviors of fellow knowledge workers.

According to DiGiacomo, J. (2003) Leadership develops business and operational strategies to survive and position for success in today's dynamic environment. Those strategies determine vision, and must align knowledge management with business tactics to drive the value of knowledge management throughout the enterprise. Leadership establishes and implements the strategy and nourishes the culture and climate, which the strategy necessitates. Leadership interacts with the environment to position itself for success. Focus must be placed on building executive support and knowledge management champions. Knowledge management systems require a champion or leader who can provide strong and dedicated leadership needed for cultural change.



## 2.7.2 Organization

Knowledge Management must be incorporated into the business processes. DiGiacomo, J. (2003) stated that the value of knowledge creation and collaboration should be intertwined throughout an enterprise. The organizational structure must support the strategy. Operational processes must align with the KM framework and strategy, including all performance metrics and objectives. While operational needs dictate organizational alignment, a KM system must be designed to facilitate KM throughout the organization. Operational processes must be aligned with the new vision while redesigning the organization and identifying key levers of change, including roles and responsibilities. Introducing KM requires organizational change, and KM inevitably acts as a catalyst to transform the organization's culture. The increasing value placed on highly capable people, rising job complexity and the universal availability of information on the Internet are fundamental changes contributing to the move by organizations to leverage KM solutions. In order to begin changing the organization, KM must be integrated into the business processes. The right business processes and performance management systems must be strong enough to deal with turbulence yet flexible enough to adapt to change.



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The diversification of technology defined and explained by Bixler (2002) argued that the value of knowledge creation and collaboration should be intertwined throughout an enterprise. Operational processes must align with the KM framework and strategy, including all performance metrics and objectives. While operational needs dictate organizational alignment, a KM system must be designed to facilitate KM throughout the organization. Operational processes must be aligned with the new vision while redesigning the organization and identifying key levers of change, including roles and responsibilities. Introducing KM requires organizational change, and KM inevitably acts as a catalyst to transform the organization's culture. The increasing value placed on highly capable people, rising job complexity and the universal availability of information on the Internet are fundamental changes contributing to the move by organizations to leverage KM solutions. In order to begin changing the organization, KM must be integrated into business processes.



### 2.7.3 Technology

According to DiGiacomo, J. (2003) Technology enables and provides the entire infrastructure and tools to support Knowledge Management within an enterprise. While cultural and organizational changes are vital to achieving a Knowledge Management strategy, a lack of proper tools and technology infrastructure can lead to failure. Any technical solution must add value to the process and achieve measurable improvements. Proper assessing and defining Information Technology capabilities is essential.

Bixler (2002) claims that there are many factors that are known to affect the success of technology, therefore defines that Technology enables and provides the entire infrastructure and tools to support KM within an enterprise. Whilst cultural and organizational changes are vital to achieving a KM strategy, a lack of the proper tools and technology infrastructure can lead to failure. Any technical solution must add value to the process and achieve measurable improvements. Properly assessing and defining IT capabilities is essential, as identifying and deploying best of breed KM software and IT tools to match and align with the organization's requirements.



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### 2.7.4 Learning

Learning process is sharing knowledge and building ideas of employees. According to DiGiacomo, J. (2003) the best tools and processes alone will not achieve a Knowledge Management strategy. Ultimately, people are responsible for using the tools and performing the operations. Creating organizational behavior that supports a Knowledge Management strategy will continue long after the system is established. Organizational learning must be addressed with approaches such as increasing internal communications, promoting cross-functional teams, and creating a learning community. Learning is an integral part of knowledge management. In this context, learning can be described as the acquisition of knowledge or a skill through study, experience, or instruction. Enterprises must recognize that people operate and communicate through learning that includes the social processes of collaborating,

sharing knowledge and building on each other's ideas. Managers must recognize that the knowledge resides in people, and knowledge creation occurs in the process of social interaction and learning.

Bixler (2002) stated that learning is one of the best tools to maximize the productivity of the knowledge people. However the author further explains the best tools and processes alone will not achieve a KM strategy. Ultimately, people are responsible for using the tools and performing the operations. Creating organizational behavior that supports a KM strategy will continue long after the system is established. Organizational learning must be addressed with approaches such as increasing internal communications, promoting cross-functional teams and creating a learning community. Learning is an integral part of knowledge management. In this context, learning can be described as the acquisition of knowledge or a skill through study, experience or instruction. Enterprises must recognize that people operate and communicate through learning that includes the social processes of collaborating, sharing knowledge and building on each other's ideas.



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The organizational learning literature is concerned with the development of a better understanding of the learning process at different levels and in different contexts in organizations. The basis of the most relevant literature is individual learning but in recent years those in strong focus on the concept of 'organizational learning'.

## **2.8 Relationship between Knowledge Management and Staff Turnover**

In literature there can be seen some attempts to link the concepts of Knowledge Management and Staff Turnover. According to Foster (1999) the benefits of a KM programme, initiative, strategy or system can be many and varied, and cost justification may be difficult. More interestingly the survey of KPMG's study (cited in Penelope et al., p. 24) stated that 'the ability to leverage the intellectual capital of the organization can reap numerous benefits' and it lay emphasis on improved staff morale (making a search for, and access to information easier and quicker, thus



permitting more time for innovation, higher quality work, and more accurate decisions often evidenced by a reduction in staff turnover or easier attraction of high-calibre recruits) which can be seen as a more important factor in the sense of KM. Furthermore some authors stress the importance of staff retention and try to link this into KM.

Furthermore, the study found one more relationship between KM and ST. Makararavy (1996) stated the knowledge sharing is very important for the task of the organization. If the expatriates did not share their knowledge and skills to the successors and other employees, it is quite certain that the organization will fail to attract donors to grant the funds. Accordingly, knowledge transfer is very important for the organization where the staff turnover rate is high.

In addition Stovel et al. (2002) Human Resource Managers are effectively managing the people in their organizations through training and development, performance reviews, and the effective management of fluctuating workforce demands. Moreover there is a need for greater attention to be paid to the leveraging of human capital that exists within their knowledge-intensive workforce. Besides, research findings strongly suggest the need to increase KM behaviors such as the valuation and codification of organizational knowledge assets.

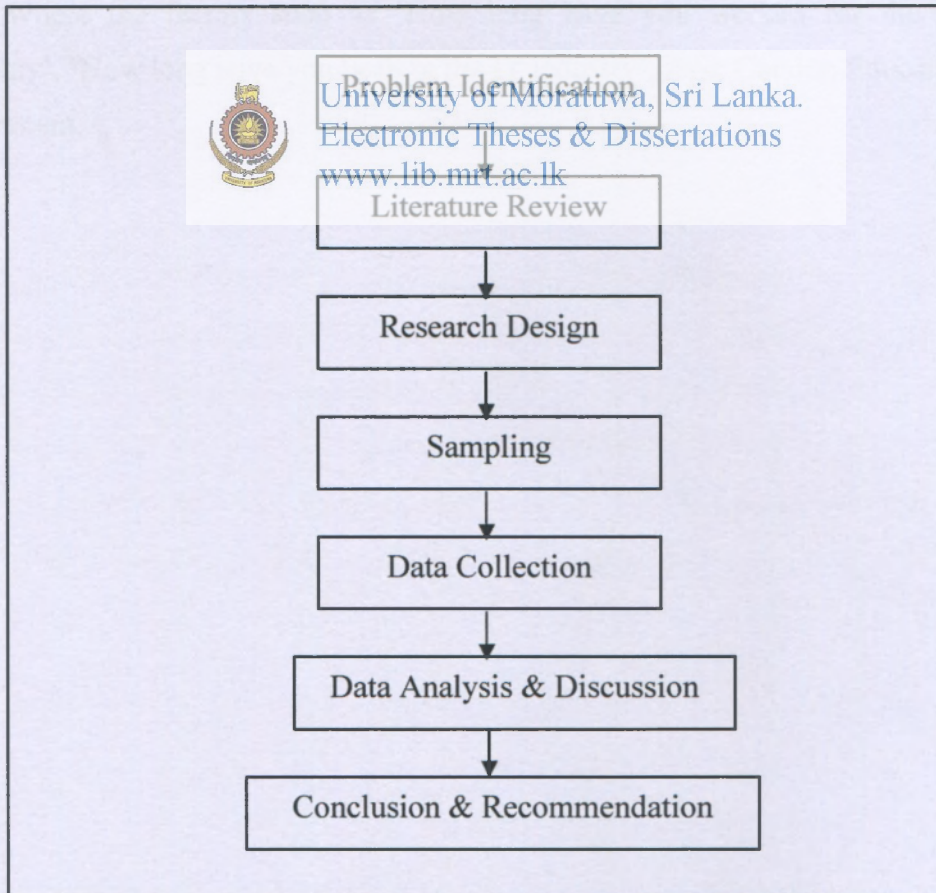
Further Akhavan et al. (2006) stated that the benefit and importance of KM is clear to every organization and nowadays, many companies search for the main reasons and factors for being successful in KM system design and implementation through their organization.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter describes the research methodology used in this study. Research methodology means what procedures have to be followed, their sequence, and the interrelationships existing among them, in carrying out this research study process (figure 3.1). Conceptual framework is necessary to establish the relationship between the dependent and the independent variables considered for the study that is being conducted. Subsequently, the data collection method that provides information on how to collect sources is explained. Finally, the reliability of our research is explained.



**Figure 3-1: Research Process**



This research is based on a quantitative approach. Quantitative methods are concerned with numbers and data is collected by use of a questionnaire. The quantitative research findings are representing statistics, which can improve the understanding of the current situation. The author conducted a single stage questioner rather than conducting a pilot questionnaire. Therefore, this method is able to generalize the findings within this study.

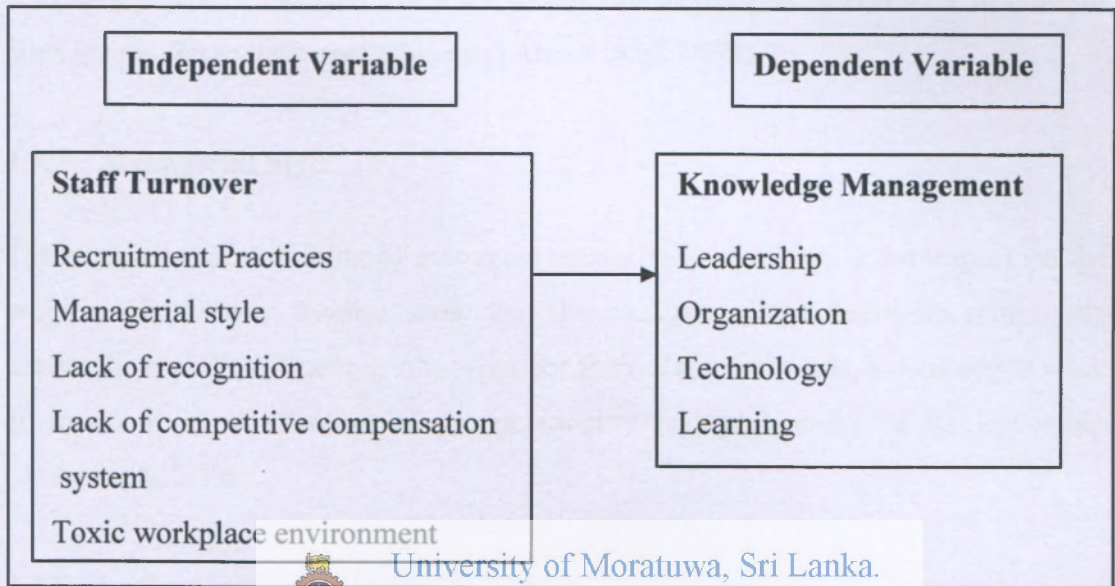
The Questioner of this study is divided into three parts. They are Staff Turnover, Knowledge Management and Demographic Data. ST (Part A) consists of 20 Questions in five sections, (Poor Recruitment Practices, Managerial style, Lack of recognition, Lack of competitive compensation system ,Toxic workplace environment) supporting quantitative analysis and KM (part B) 14 questions support quantitative analysis in four sections measure KM (Leadership, Organization, Technology, Learning). Finally six questions evaluate demographic data. Where the factors such as ‘How long have you worked for the present company’, ‘How long have you been in the IT industry’, Age, Gender, Education and Department.



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### 3.2 Conceptualization Framework

Based on the narrow down scope of the literature review from the Second Chapter, the relationship between the major factors determining Staff turnover and knowledge management is shown in figure 3.2.



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**Figure 3-2: Conceptualization Framework**

In the conceptual framework staff turnover has been identified as independent variable where as, the factors of Poor Recruitment Practices, Managerial style, Lack of recognition, Lack of competitive compensation system and Toxic workplace environment support for Operationalization process. The Dependent variable is Knowledge Management, where the factors are Leadership, Organization, Technology and Learning have been taken for the Operationalization process.



### **3.3 Definition of Concepts**

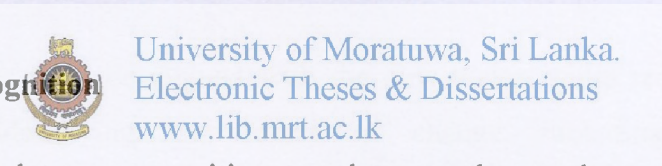
#### **3.3.1 Recruitment Practices**

Putting the right people in the right position at the right time and then training them properly is one of the most critical tasks any organization may face. Good hiring and screening practices and effective job matches can increase the speed with which new hires are moved to their profitable use (Abassi et al. 2000).

#### **3.3.2 Managerial Style**

The experience and training of managers appear to have a significant impact on the problem of turnover. Studies show that the backgrounds of managers profoundly impact the mobility of people who work for them. In other words, a company's work environment is a reflection of the personality and philosophy of its leadership (Abassi et al. 2000).

#### **3.3.3 Lack of Recognition**



Lack of personal and team recognition translates to the employee as a lack of success. Regardless of the organizational level, employees want to feel good about themselves and their work, have a sense of purpose, and be recognized when they do a good job (Abassi et al. 2000).

#### **3.3.4 Lack of Competitive Compensation System**

The design of an organization's compensation system may have an impact on its ability to achieve its strategic goals in the human relation area. Employees expect tangible rewards for their good work and they like to be paid or receive financial rewards based on their worth to the organization (Abassi et al. 2000).

### **3.3.5 Toxic Workplace Environment**

Creating a positive and upbeat work environment that nurtures trust may not be an easy task. Employees want a feeling of belonging and security. Their decision to stay or leave may depend on working conditions and the work environment. Motivated employees are enthusiastic about the organization, their own personal development and long term potential (Abassi et al. 2000).

### **3.3.6 Leadership**

Leadership develops business and operational strategies to survive and position for success in today's dynamic environment. Those strategies determine vision, and must align knowledge management with business tactics to drive the value of KM throughout the enterprise Bixler (2002).

### **3.3.7 Organization**

Operational processes must be aligned with the new vision while redesigning the organization and identifying key elements of change, including roles and responsibilities. Introducing knowledge management requires organizational change, and KM inevitably acts as a catalyst to transform the organization's culture Bixler (2002).

### **3.3.8 Technology**

Technology enables and provides the entire infrastructure and tools to support KM within an enterprise. While cultural and organizational changes are vital to achieving a KM strategy, a lack of the proper tools and technology infrastructure can lead to failure Bixler (2002).



### 3.3.9 Learning

The best tools and processes alone will not achieve a KM strategy. Ultimately, people are responsible for using the tools and performing the operations. Creating organizational behavior that supports a KM strategy will continue long after the system is established Bixler (2002).

### 3.4 Operationalization

This section deals with the Operationalization of variables under major factors affecting the independent and dependent variables. The table 3.1 shows the concepts variables and scale which could be included under each component.

**Table 3-1 Concepts and Variables**

Variable	Dimension	Question	Scale
<b>Independent - Staff turnover</b>	Recruitment practices	1-4	Likert
	Managerial style	5-9	Likert
	Recognition	10-12	Likert
	Competitive compensation system	13-15	Likert
	Toxic workplace environment	16-20	Likert
<b>Dependent - Knowledge Management</b>	Leadership	21-23	Likert
	Organization	24-26	Likert
	Technology	37-30	Likert
	Learning	31-34	Likert

By using the literature and empirical evidence the Operationalization of variables under major factors, affecting the independent and dependent variables can be drawn. The table 3.2 and 3.3 explains the Operationalization which discuss the, dimensions and indicators.

**Table 3-2 Operationalization – Independent Variable**

Dimensions	Questions
Recruitment Practices	<p>In recruiting professionals, the quality of their qualifications is not emphasized.</p> <p>The recruitment process is not consistent and is ad-hoc.</p> <p>The experience of the candidate is not considered in recruiting.</p> <p>The qualification of a candidate is not always matched to the job they are recruited for.</p>
Managerial Style	<p>The Management is focused only on making a profit.</p> <p>The highest priority of the organization is cost cutting.</p> <p>I have been assigned more work than I expected to do.</p> <p>I always find that there is a mismatch between what the management expects and the work I produce.</p> <p>I think my Manager makes my work very stressful.</p>
Recognition	<p>I am uncertain about my career path and promotion in the company.</p> <p>There is no recognition for successful project completion.</p> <p>There are no specific methods to recognize achievement in my company.</p>
Competitive Compensation System	<p>I think my salary is below industry standard rates.</p> <p>My organization does not provide additional benefits like medical, traveling, etc</p> <p>There has been no change in salary or increment structure for the last few years.</p>
Toxic Work Environment	<p>My organization has a sense of community.</p> <p>The organizational culture encourages me to work.</p> <p>I have not been properly treated as per my qualifications and experience.</p> <p>My workload is too much.</p> <p>There is no proper training for latest developments in technology.</p>



**Table 3-3 Operationalization – Dependent Variable**

Dimensions	Questions
Leadership	<p>We have many leaders in our organization responsible for innovation.</p> <p>We have no resources for training and development.</p> <p>The Top Management provides a special incentive program for new product development.</p>
Organization	<p>There is a long history of innovations and new product development in our organization.</p> <p>There is a separate section for training and development.</p> <p>There is a mechanism, which allows the sharing of knowledge among employees.</p>
Technology	<p>There is a system to review existing technology every year.</p> <p>We follow updated international standards and procedures for our business process.</p> <p>There is no updated technology for business requirements.</p> <p>There is a problem of proper usage of technology by employees.</p>
Learning	<p>There is a "learning culture" among employees</p> <p>There is an incentive for employees who are follow courses related to the development of IT.</p> <p>We use many formal methods of forecasting (like trend analysis).</p> <p>Training/education programs and integration of new products and processes is ongoing.</p>

### 3.5 Hypothesis

The following hypothesis can be drawn from the conceptual framework.

***Ho: Null Hypothesis***

**There is no strong positive relationship between high Staff Turnover and weak Knowledge Management.**

***H1: Alternative Hypothesis***

**There is a strong positive relationship between high Staff Turnover and weak Knowledge Management.**

### 3.6 Data Collection Methods

Sri Lankan Software companies are selected and purposive sampling was used in this research as a sampling strategy. The names of those who responded were initially determined by the IT staff of each organization through company records based on their job responsibilities, position and involvement in the subject studied. However, those who responded were also selected on the basis of the researcher's individual judgment where permitted on the ground that they could provide the necessary information needed for the research.

The fieldwork included analysis of documentary sources in each organization. Documents were collected from the organizations' resource center, libraries of various Universities, Company reports, Company newsletter and other printed materials (e.g. newspaper cuttings, journals, textbooks, conference reports, articles) that were made available for the purpose of the research.



### 3.7 Sample Sizing

Sri Lanka Information Communication Technology Association (SLICTA) IT Work Force survey (2010) results illustrated the total number of IT work force was approximately 50,000 and of this around 22,000 work in the direct IT sector companies and 23,000 work in non-IT sector. The government and BPO IT employment contribution was 3000. In addition IT work force Categories to thirteen Job sectors such as Database Administration and Development, Digital Media and Animation, Systems and Network Administration, Project and Program Management, Technical Support, Web Development, Solutions and Technical Architect, Business Analysis and Systems Integration, Programming and Software Engineering, Testing/Quality Assurance, Management Information Systems / IT Management, Technical Writing and Sales and Marketing.

According to ICTA (2007) report definition of the three categories of organizations as direct IT company is an Organizations with the primary business objective of providing ICT products and services. Non-IT Company is a private organization outside the ICT sector. Government Agencies are is Ministries, Departments, Corporations and other major government agencies. Provincial Governmental Organizations were excluded from the sample.

The population of this research is direct IT sector company employees, which was 19000 with out calculating 3000 uncategorized employee group in Rising Demand survey (2010). According to the Statistical sample space calculation formula, with 95% confidence level and confidence interval 9, the author has decided to study a sample space of 118 from the total of IT Professionals who are working at Sri Lankan base organizations.

### 3.8 Design of Questionnaire

The most common and frequently used measures of attitudes are the questionnaires, which ask those who responded to evaluate and rate the attitude towards a particular object directly and respond favorably or unfavorably about his/her belief regarding the attitude object.

A Likert scale has been used as the main method of capturing the attitudes of those who responded in this research study. This scale consists of five boxes ranging from strongly agree to strongly disagree. Under each statement, the person responding will be given a chance to mark one of the five boxes and finally all the ratings will be summed up. This summed up rating scale provides a means of measuring the intensity of one's attitude towards a particular object. The research study involves two questionnaires in order to collect the needed data.

Both questionnaires include Likert scale of five response levels and these qualitative statements would be quantified using the scoring system given below.



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**Table 3-4 Likert Scale Measuring Indicator**

Likert Scale Measuring Indicator	Description	Score
SA	Strongly Agree	5
A	Agree	4
ND	Neither agree nor disagree	3
DA	Disagree	2
SD	Strongly Disagree	1

The scores would be reversed if a statement is negative. All the 34 items were stated in English language. The full questionnaire for the study is shown in Appendix A.



### 3.9 Chapter Summary

This chapter describes the foundational steps, which were involved to developed research methodology. The first step was to design a conceptual framework to study the problem. It was identified that the turnover was affected by five factors such as Recruitment Practices, Managerial style, Lack of recognition; Lack of competitive compensation system and Toxic workplace environment . KM was affected by four factors Leadership, Organization, Technology and Learning. Secondly operationalization section describes the relationship between variables and questions. The research was conducted through Sri Lankan software industry employees and sample size was 119. The questioners were distributed among them to finding a survey data. The data collection method that provides information on how to collect sources is explained.



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## CHAPTER 4

### DATA PRESENTATION AND ANALYSIS

#### 4.1 Introduction

This chapter is devoted to present and analyze the data gathered during the survey. The main method used in data gathering was administering a questionnaire. This chapter presents the data gathered through the structured questionnaire.

First, by the sample profile is analyzed with a view of understanding the demographic nature of those who responded. A rigorous statistical analysis is attempted next, in order to understand the characteristics of each concept and each variable. The testing of hypotheses is done through the process of investigating a statistically significant correlation between the concepts concerned.

The statistical analysis of data would follow the general objectives of data analysis; getting a feel for the data, testing the goodness of data and testing the hypotheses. Before analyzing the data, the researcher presents the relationships among the hypotheses, concepts, variables and the indicators related to the study in order to ensure better understanding of the data analysis for the reader. The following figure 4.1 summarized and graphically explained the process of data analyzing.



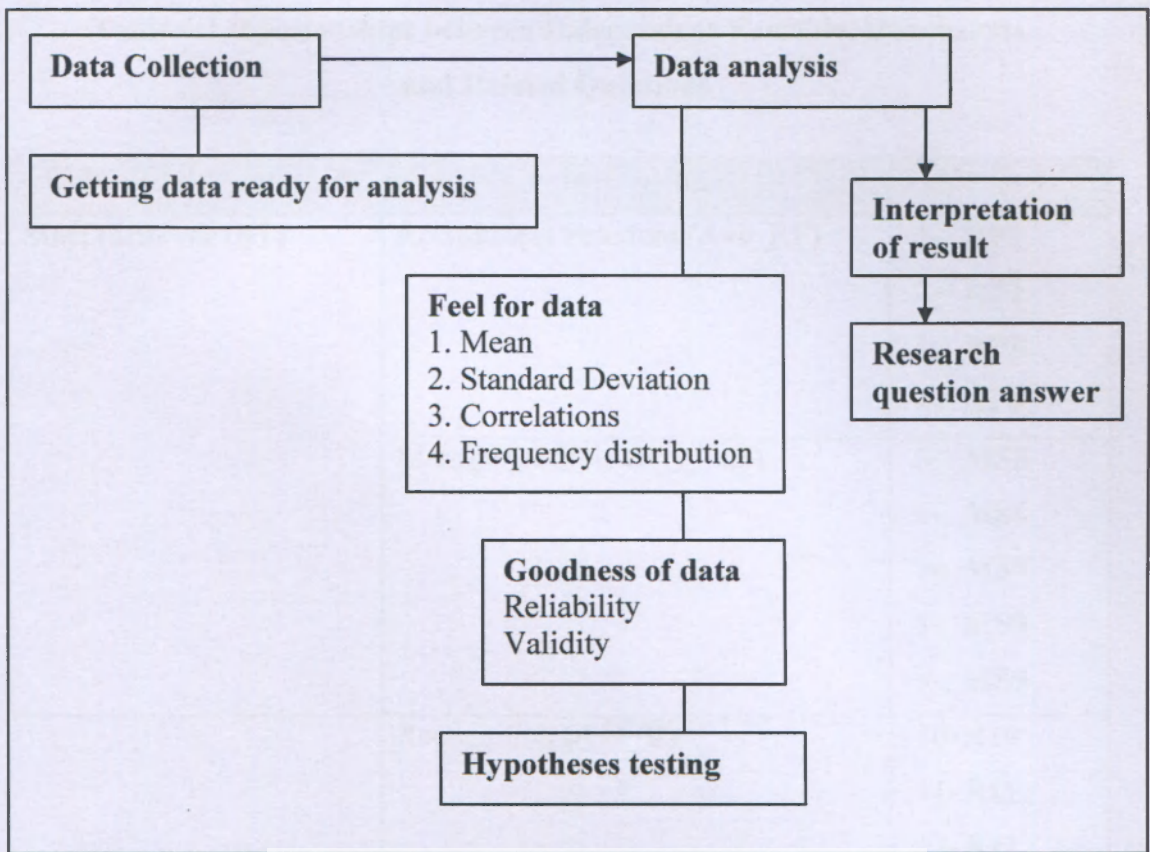


Figure 4-1: Flow Diagram of Data Analysis Process

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## 4.2 The Relationships between Hypotheses, Concepts and Variables

The research was designed to test four hypothesis mentioned below.

***H<sub>0</sub>: Null Hypothesis***

**There is a no strong positive relationship between high Staff Turnover and weak Knowledge Management.**

***H<sub>1</sub>: Alternative Hypothesis***

**There is a strong positive relationship between high Staff Turnover and weak Knowledge Management.**

Hypothesis	Concepts Involved in the Hypothesis
H <sub>0</sub>	Staff Turnover (ST) and knowledge Management (KM)

**Table 4-1 Relationships between Independent Variable, Dimensions  
and Related Questions**

<b>Independent Variable</b>	<b>Dimension</b>	<b>Questions</b>
<b>Staff turnover (ST)</b>	<b>Recruitment Practices (Ave_RP)</b>	1- RP1 2- RP2 3- RP3 4- RP4
	<b>Managerial Style (Ave_MS)</b>	5- MS5 6- MS6 7- MS7 8- MS8 9- MS9
	<b>Recognition (Ave_R)</b>	10- RI0 11- R11 12- R12
	<b>Competitive Compensation System (Ave_CCS)</b>	13- CCS13 14- CCS14 15- CCS15
	<b>Toxic Workplace Environment (Ave_TWE)</b>	16- TWE16 17- TWE17 18- TWE18 19- TWE19 20- TWE20



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**Table 4-2 Relationships between Dependent Variable, Dimensions and Related Questions**

<b>Dependent Variable</b>	<b>Dimension</b>	<b>Question</b>
<b>Knowledge Management (KM)</b>	<b>Leadership (Ave_L)</b>	21- L21
		22- L22
		23- L22
	<b>Organization (Ave_O)</b>	24- O24
		25- O25
		26- O26
	<b>Technology (Ave_T)</b>	27- (T27
		28- T28
		29- T29
		30- T30
	<b>Learning (Ave_LEA)</b>	31- LEA31
		32- LEA32
		33- LEA33
		34- LEA34



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The relationships between the above dimensions, variables and the concepts can be explained as below,

When considering the variable ST passion towards Staff Turnover, Ave\_RP, Ave\_MS, Ave\_R, Ave\_CCS and Ave\_TWE satisfies ST. Therefore, there is an OR relationship and it can be stated mathematically as follows.

$$ST = Ave\_RP + Ave\_MS + Ave\_R + Ave\_CCS + Ave\_TWE$$

Since RP1, RP2, RP3, and RP4 measure the dimension Ave\_RP the average of the scores of RP1, RP2, RP3, and RP4 were taken as the measure for Ave\_RP.

$$Ave\_RP = (RP1 + RP2 + RP3 + RP4) / 4$$

Finally obtain a single value for independent variable and dependent variable calculate average of the score of Ave\_RP, Ave\_MS, Ave\_R, Ave\_CCS and Ave\_TWE.

$$Ave\_ST = (Ave\_RP + Ave\_MS + Ave\_R + Ave\_CCS + Ave\_TWE) / 5$$

Similarly all the relationships within the conceptual model can be presented as follows.

$$Ave\_RP = (RP1 + RP2 + RP3 + RP4) / 4$$

$$Ave\_MS = (MS5, MS6, MS7, MS8, MS9) / 5$$

$$Ave\_R = (R10+ R11+ R12) / 3$$

$$Ave\_CCS = (CCS13+ CCS14+ CCS15) / 3$$

$$Ave\_TWE = (TWE16+ TWE17+ TWE18+ TWE19+ TWE20) / 5$$

$$Ave\_L = (L21, L22, L23) / 3$$

$$Ave\_O = (O24, O25, O26) / 3$$

$$Ave\_T = (T27, T28, T29, T30) / 3$$

$$Ave\_LEA = (LEA31, LEA32, LEA33, LEA34) / 3$$

$$Ave\_ST = (Ave\_RP + Ave\_MS + Ave\_R + Ave\_CCS + Ave\_TWE) / 5$$

$$Ave\_KM = (Ave\_L + Ave\_O + Ave\_T + Ave\_LEA) / 4$$

### 4.3 Feel for the Data

The feel for the data provides preliminary ideas of how good the scales are, how well the coding and the entering of data has been done, and so on. The frequency distributions for the demographic variables were first measured in order to get a feel of the sample profile. Then the descriptive statistics; mean, standard deviation, range,



and variance of the dependent and independent variables were measured with the aim of measuring the central tendency and the dispersion of the responses to variables. The normality of the dependent and independent variables were also measured.

#### 4.3.1 Survey Response

Questionnaires were distributed among randomly selected software companies in Sri Lanka. During a two and half month period a total of 530 sets of questionnaires were distributed to those who responded. However the response rate to the questionnaire was low irrespective of these measures taken to enhance the response rate such as providing self addressed envelopes and continuous telephone follow ups etc. From these sets, only 139 were returned back to the researcher, or a total response rate of 26.3%. 20 responses were rejected due to incompleteness of questionnaire. Hence, the findings and discussion will focus on the response of the 119 respondents. That was 85.6% accepted responses. Finally, the results of the theoretical model with the hypotheses were examined. The table below summarizes the survey responses.



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 Table 4-3 Survey Responses  
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Method	Questionnaires	Percentages	Received	Return Rate
	Sent	of Sent		
E-mail	130	24.5%	28	23.5%
Print Copies	150	28.3%	39	32.7%
Online Survey invitations	250	47.1%	52	43.6%
Rejected			(20)	
<b>Total</b>	<b>530</b>	<b>100%</b>	<b>119</b>	<b>100%</b>

#### 4.3.2 Testing the Goodness of Data

The inter-item consistency reliability or the Cronbach's Alpha reliability coefficient of each independent and the dependent variables was obtained to measure the goodness of data. Closer the Cronbach's Alpha to 1 is better. In general, reliabilities

less than 0.6 are considered to be poor, those in the 0.7 range, acceptable, and those over 0.8 are good. The Cronbach's Alpha received was with in 0.7 - 0.8 ranges and the internal consistency reliability of the measures used in this study can be considered to be good.

**Table 4-4 Reliability Statistics**

Dimensions	Number of Items	Cronbach's Alpha
RP1, RP2, RP3, RP4	4	0.703
MS5, MS6, MS7, MS8, MS9	5	0.750
R10, R11, R12	3	0.807
CCS13, CCS14, CCS15	3	0.770
TWE16, TWE17, TWE18, TWE19, TWE20	5	0.708
L21, L22, L23	3	0.709
O24, O25, O26	3	0.717
T27, T28, T29, T30	4	0.707
LEA31, LEA32, LEA33, LEA34	4	0.812



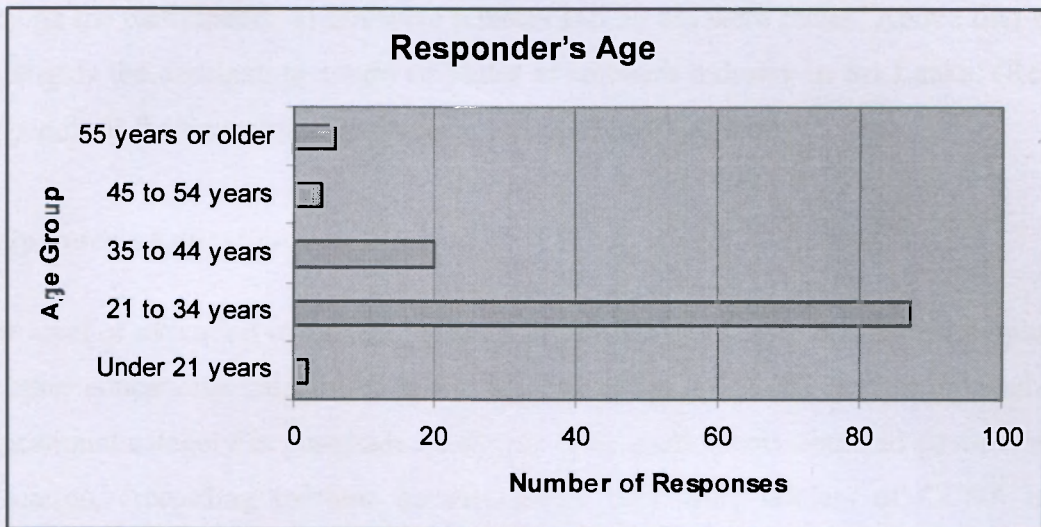
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### 4.3.3 Descriptive Analysis of Survey Response

#### Responder's Age

Among the people who participated in the survey, most participants (87) were within the age limit of 21 – 34 years. That was an average of 73.1%. Twenty participants were within the age group of 35 – 44 years and 2 responders in the age group under 21 years. Only 6 voters were in the 55 years or above age category. (Refer Appendix B for Frequency Tables generated by SPSS software)





**Figure 4-2: Responder's Age**

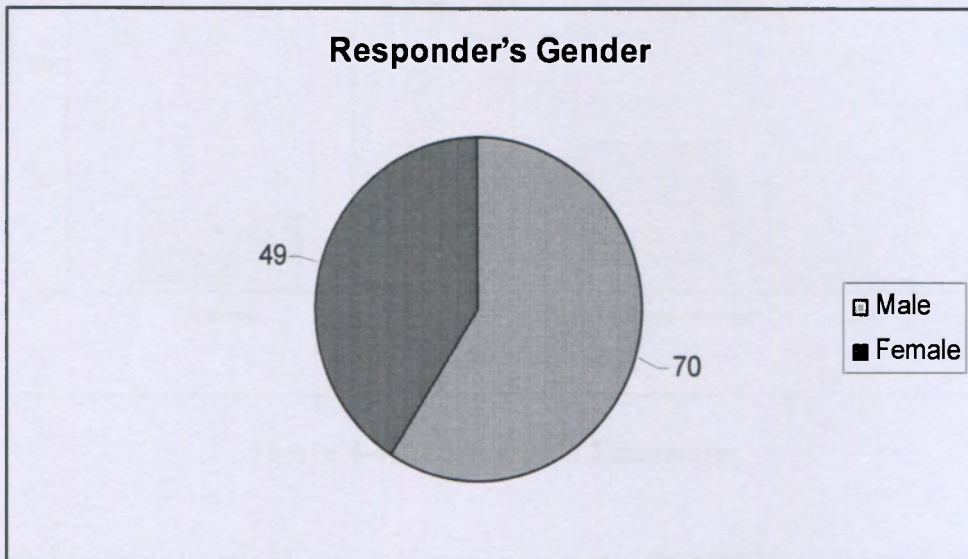
A close analysis has been made on the people engaged in the software industry and it was revealed that the age group 21 to 34 as the most number of responders. Which intern proves the positive growth towards software industry.

**Responder's Gender**



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Illustrated below is the graphical representation of the sample based on the gender.

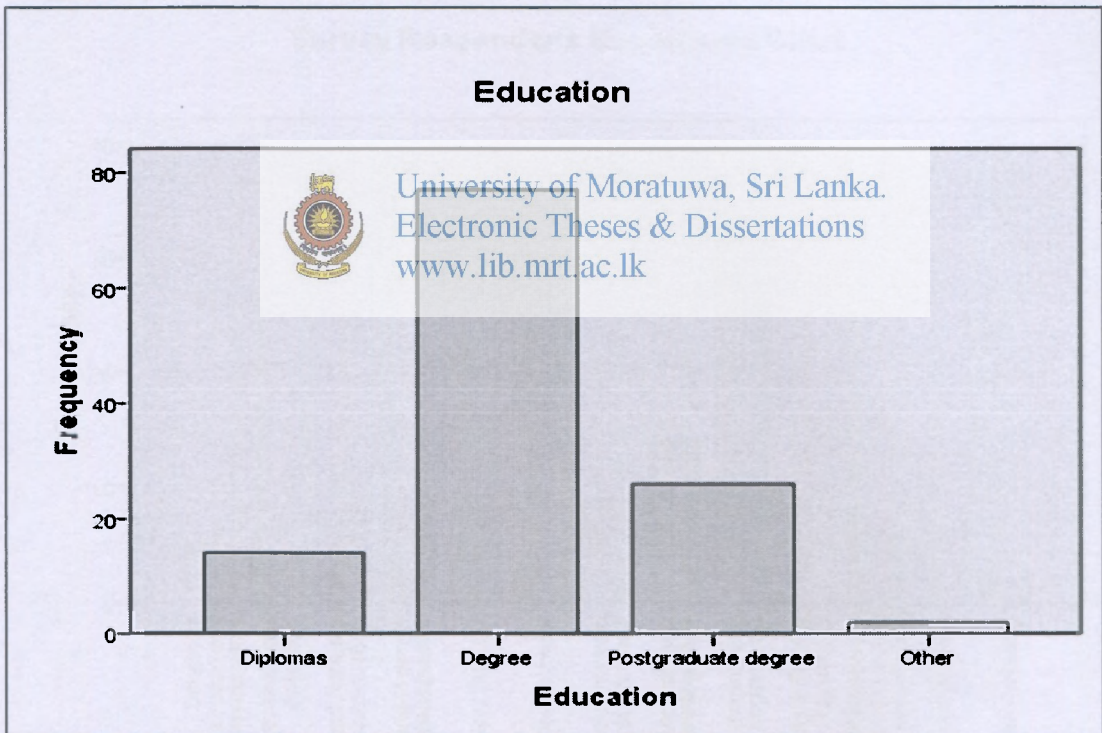


**Figure 4-3: Responder's Gender**

Among the participants, 41.2% were females and 58.8% were males. Above findings highlights the dominating nature of Males at software industry in Sri Lanka. (Refer Appendix B for Frequency Tables generated by SPSS software)

### Responder's Education

The level of education in the Sri Lankan IT work force has more bachelors compared to other educational categories. That was an average of 64.7% the second highest educational category is postgraduate degree. Two participants obtained professional education. According to their questionnaires, they were holders of CCNA and Microsoft product qualifications. Figure 4-4 illustrated the educational level of responders (Refer Appendix B for Frequency Tables generated by SPSS software)



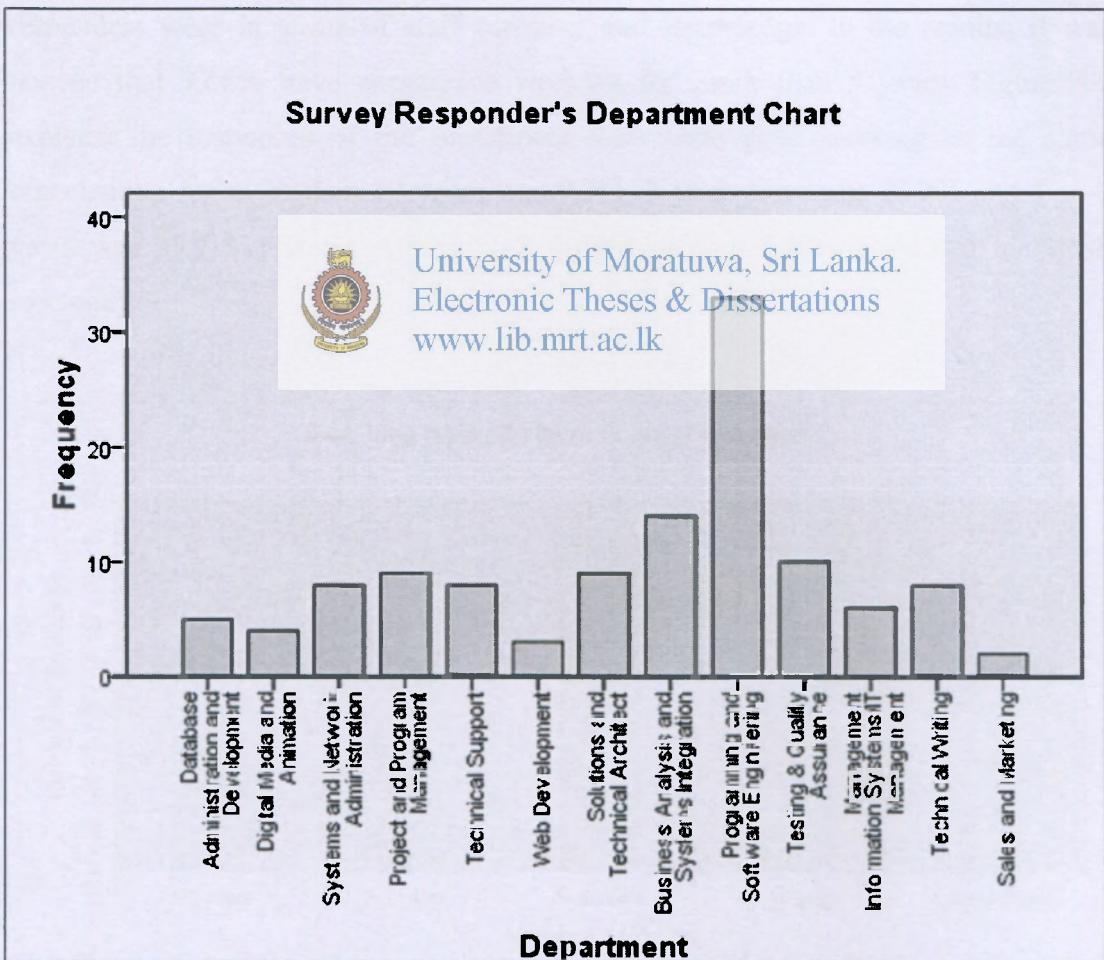
**Figure 4-4: Responder's Education**

A similar analysis on the factor of education indicated that the most responders had a higher level of education. Moreover, that indications the growth of IT industry has a link with the awareness of responders.



## Responder's Work Department

The figure 4.5 below shows a frequency breakdown of the respondent's line of department. The most number of participants who participated in our survey, 33 (27.7%) involve in Programming and Software Development. Further 11.8% (14 participants out of 119) were involved in software Quality Assurance. Eight persons were in the IT support and 14 people were involved in Business Analysis and Systems Integrations. Only nine people were attached to the Project and the Program Management field. (Refer Appendix B for Frequency Tables generated by SPSS software)



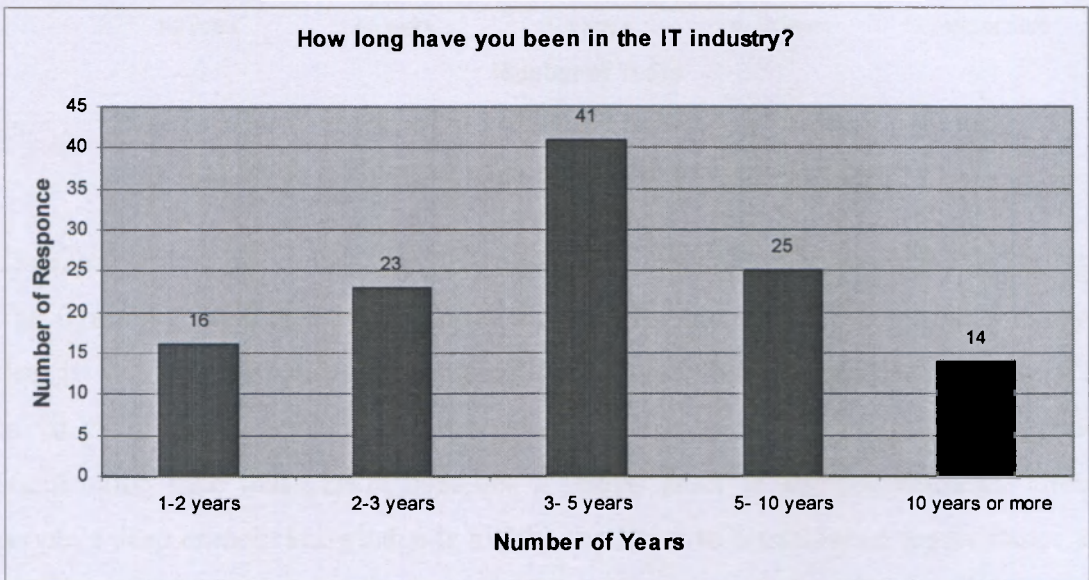
**Figure 4-5: Responder's Department**

The thirteen job categories have observed and the highest percentage was from the category of programming and software development (27.7%). At the same time other job categories are equally important to an organization delivering the various functions, the governing bodies should pay attention to minimize the loss of said staff and to retain those using different methods such as offering benefits.

**Responder’s Present Company work experience & Total number of work experience**

The figures 4-6 and 4.7 show the number of years of experience the respondents had, working in the software industry and work experience in the current organization. The researcher asked this question because he recognized how experienced the responders were in terms of staff turnover and knowledge. In the results, it was noticed that 32.8% have experience working for more than 5 years. Figure 4.7 explains the responses of the participant who have been working in the same organization for more than 10 years was 9.2%, 3 to 5 years was 25.2% and 1 to 2 years was 27.7 %.( Refer Appendix 2 for Frequency Tables generated by SPSS software)

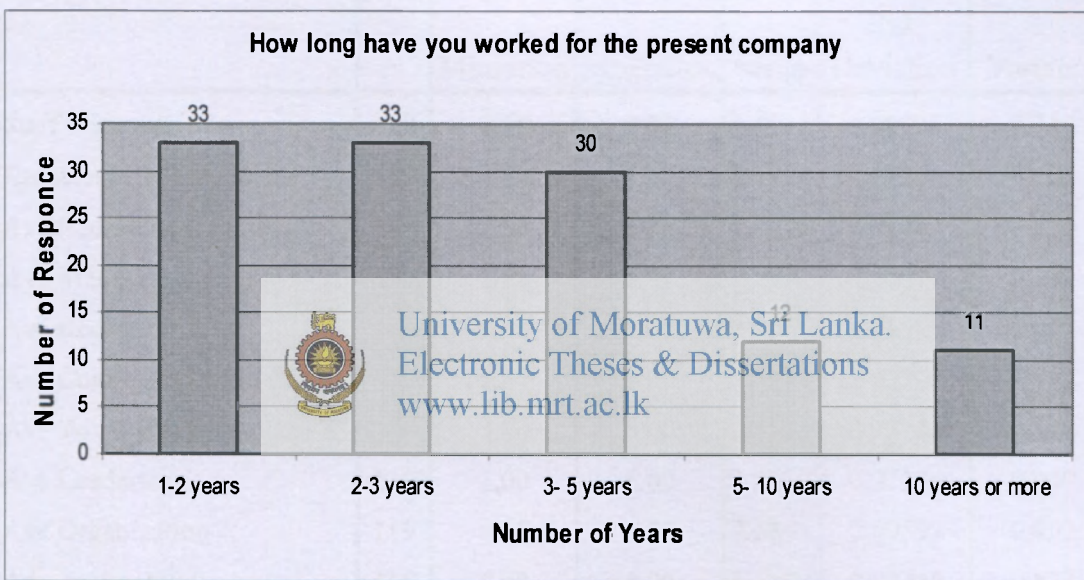
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**Figure 4-6: Number of work experience in the IT Industry**



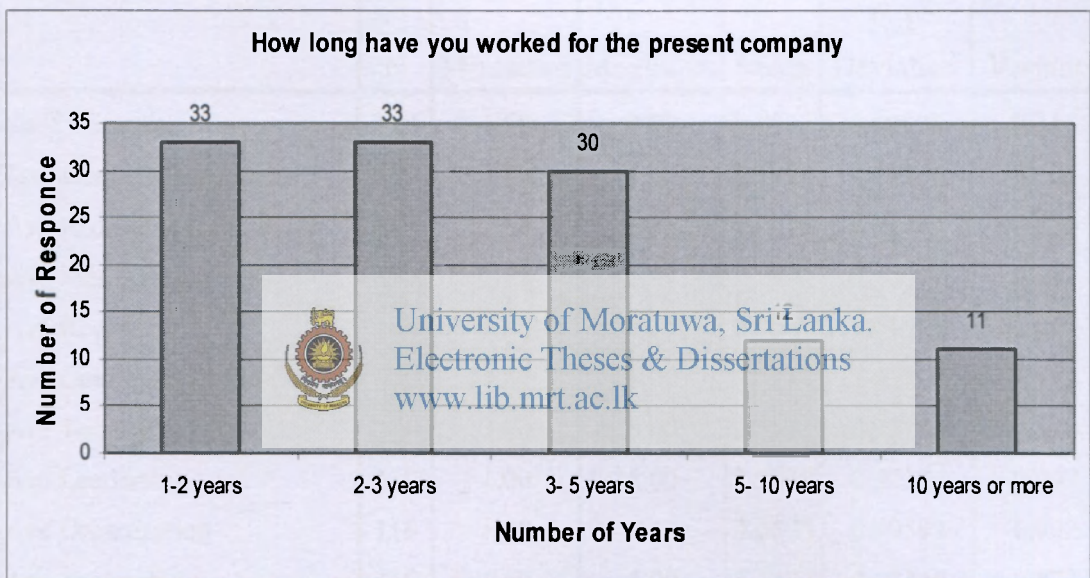
Due to the growth of the industry and personal satisfaction people are moving in the IT sector. Hence these become common problem in a modern world. Figure 4.6 shows that the responders were been in the IT industry. 41 responders were in the IT industry between 3 to 5 years. 14 responders are working for IT industry since more than 10 years. The key problem is, if responders are moving from IT industry to another industry, which creates a negative impact to IT business. There will be a set of an issue that occurs to change people’s minds. Therefore, The Management should pay more attention to sort these problems and for the maximize growth of the IT industry.



**Figure 4-7: Number of years in the present company**

The rapid growth of product knowledge plays a major role in Sri Lankan IT industry. The figure 4.7 illustrates 11 responses working for the same organization for more than 10 years. 12 responders are sharing their cooperation to organization between 5 to 10 years. If the person is doing a same job over a long period in the same organization then that person becomes a prized asset to the organization. Those people’s deep domain knowledge is highly important to organization performance as well as sustainability of organization. The management should pay attention to minimize the lost of domain knowledge creators.

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#### 4.3.4 Descriptive Statistics for the Variables and Dimension

The descriptive statistics were calculated using SPSS software in order to get a feel for the data under each variable as well as the broad concepts. The following table shows the results obtained for each variable. Calculate the final results using SPSS researcher used a simple average of each dimension as well as simple average for each variable.

**Table 4-5 Descriptive Statistics**

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Staff Turnover	119	1.68	4.82	3.1257	0.58578	0.343
Knowledge Management	119	2.50	4.67	3.3925	0.45214	0.204
Ave Recruitment Practices	119	1.00	4.75	2.9013	0.91087	0.830
Ave Management Style	119	1.00	4.80	3.0941	0.80077	0.641
Ave Recognition	119	1.00	5.00	2.9608	1.03896	1.079
Ave Com Compensation Sys	119	1.00	5.00	2.9832	1.05396	1.111
Ave Toxic Work Env	119	1.80	5.00	3.6891	0.72144	0.520
Ave Leadership	119	1.00	5.00	3.3389	0.97326	0.947
Ave Organization	119	1.00	5.00	3.6891	0.99597	0.992
Ave Technology	119	1.00	5.00	3.1197	0.93420	0.873
Ave Learning	119	1.00	5.00	3.4223	0.86281	0.744
Valid N (listwise)	119					

Comparing the two concepts of the study the two concepts Staff Turnover (ST) and the Knowledge Management (KM) have the mean values above table 4-5. It implies that the responses for independent variable are closer to the middle end (Neither agree nor disagree). However the mean value responses for the dependent variable dimensions of Organization (Ave\_Organization) and the independent variable Toxic Workplace Environment (Ave\_Toxic\_Work\_Env) place around 3.7. It implies that the responses for two dimensions are closer to the top end (Agree).

The standard deviation is the most common measure of statistical dispersion, measuring how widely values spread in a data set. If many data points are close to the mean, then the standard deviation is small and if many data points are far from the mean, then the standard deviation is large. If all the data values are equal, then the standard deviation is zero. The results obtained shows that the standard deviations are quite small and therefore the responses for ST and KM lie closer to the mean. Furthermore comparing each dimensions subject to main variables, the researcher identified Recognition (Ave\_Recognition) and Competitive Compensation System (Ave\_Com\_Compensation\_Sys) have quite larger standard deviations compared to the other dimensions.

#### **4.3.5 Descriptive Statistics Analysis of the Responses for Indicators**

In this section, the researcher attempts to provide a brief analysis of the responses given for each indicator of the research study by the sample respondents. As the descriptive statistics provided by SPSS software suggested that most of the items of the questionnaire have got high scores and most of the scores lie on agree or strongly agree categories. However there were several indicators where they got mixed responses and the researcher intends to analyze them further to obtain a better knowledge.

The Summary of the responses of indicators showing considerably mixed responses is summarized in the following table 4.6. (Refer Annexure B for Frequency Tables generated by SPSS software)



**Table 4-6 Indicators Obtained Mixed Responses**

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Recruitment_Practices_1	119	1	5	2.92	1.312
Recruitment_Practices_2	119	1	5	3.17	1.304
Recruitment_Practices_3	119	1	5	2.48	1.241
Recruitment_Practices_4	119	1	5	3.04	1.145
Management_Style_5	119	1	5	3.49	1.241
Management_Style_6	119	1	5	3.32	1.268
Management_Style_7	119	1	5	3.15	1.086
Management_Style_8	119	1	5	2.76	1.039
Management_Style_9	119	1	5	2.75	1.002
Recognition_10	119	1	5	3.04	1.258
Recognition_11	119	1	5	2.73	1.233
Recognition_12	119	1	5	3.11	1.177
Competitive_Compensation_System_13	119	1	5	3.40	1.264
Competitive_Compensation_System_14	119	1	5	2.72	1.352
Competitive_Compensation_System_15	119	1	5	2.82	1.198
Toxic_Work_Environment_16	119	1	5	4.01	0.987
Toxic_Work_Environment_17	119	1	5	4.00	0.966
Toxic_Work_Environment_18	119	1	5	3.51	1.156
Toxic_Work_Environment_19	118	1	5	3.29	0.997
Toxic_Work_Environment_20	119	1	5	3.66	1.166
Leadership_21	119	1	5	3.17	1.167
Leadership_22	119	1	5	3.42	1.285
Leadership_23	119	1	5	3.43	1.218
Organization_24	119	1	5	3.57	1.154
Organization_25	119	1	5	3.71	1.392
Organization_26	119	1	5	3.79	1.178
Technology_27	119	1	5	3.19	1.329
Technology_28	119	1	5	3.24	1.319
Technology_29	119	1	5	3.00	1.214
Technology_30	119	1	5	3.05	1.254
Learning_31	119	1	5	3.88	1.001
Learning_32	119	1	5	3.18	1.242
Learning_33	119	1	5	3.22	1.075
Learning_34	119	1	5	3.40	0.977
Valid N (listwise)	119				

The table above shows the statistics of the number of responders, mean and standard deviation of agreement in each statement. Roughly 74% (Agree and Strongly Agree) of the responders concern their organizations have a sense of community. The mean value was 4.01 and standard deviation as 0.987 and the author sets point 4 as agreed level. This clearly depicts that the Sri Lankan software organizations have a sense of community. As a result of sense of community in organization it can help refocus people on shared values, and create an environment of support in which employees are fully engaged.

Another interesting figure was mean value 4.00 and standard deviation 0.966 and the question behind those answers was, whether the organization culture encouraged me to work, approximately 82% responders between agree and strongly agree scale, therefore the author tries to find out if there is a good support and encouragement from the top management as well as other organization colleges. According to Likert scale author set the point 4 as agreed level. In addition, responders agreed with their organizations culture encourage staff to work.



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The third highest mean value is 3.88 and related standard deviation 1.001, therefore author tries to figure out the organization “learning culture” among the employees. The author sets a mean value to agree level. A finding of this question shows that it is important to establish the perceptions of staff toward the dimension of culture in enhancing organizational learning readiness. In addition, Managers of software industry should find the results of this study useful in designing work shifts intended to promote organizational learning practices. Also 65 responders of the survey agree and 29 strongly agree that there is a learning culture among employees and as a result employees are access information, form communities of practice, and use performance support to learn and improve their performance in the workplace. This is a sign of a good learning culture as well as improvement in the organization Knowledge Management level.



#### 4.3.6 Testing Normality

Normality tests are used to determine whether a variable is normally distributed, or not. If the residuals are not normally distributed, then the variables may have the wrong functional form, or important variables may be missing, etc. Correcting one or more of these systematic errors may produce residuals that are normally distributed. Therefore, the normality of all the variables (dependent and independent) in the study was tested using SPSS software.

Various methods can be used in order to test the normality of dependent and independent variables. The histograms may provide a simple visual indication of the distribution of the responses for each variable. If the variable is normally distributed the histogram takes a bell shape. However when the sample size is small it is quite difficult to identify the shape of the histogram.

The normal Q-Q plot provides a better visual indication about the normal distribution of the responses. A Q-Q plot ("Q" stands for quantile) is a graphical method for diagnosing differences between the probability distribution of a statistical population from which a random sample has been taken and a comparison distribution. If the distribution of the sample points is deviating from the straight line, the normality of the sample would be rejected.

Also the descriptive generated by SPSS related to normality test also provide an indication of normality. Out of them, the Skewness, Kurtosis and the standard errors of Skewness and Kurtosis can be used for this purpose.

Kurtosis is a measure of the extent to which observations cluster around a central point. For a normal distribution, the value of the kurtosis statistic is zero. Positive kurtosis indicates that the observation cluster more and have longer tails than those in the normal distribution and negative kurtosis indicates the observation cluster less and have shorter tails. Standard Error of Kurtosis is the ratio of kurtosis to its

standard error and can be used as a measure of normality. If the ratio is less than -2 or greater than +2 the normality is rejected.

In contrast, Skewness is a measure of the asymmetry of a distribution. The normal distribution is symmetric and has a Skewness value of zero. A distribution with a significant positive Skewness has a long right tail and a distribution with a significant negative Skewness has a long left tail. As a rough guide, Skewness value more than twice of its standard error is taken to indicate a departure from symmetry. Standard Error of the Skewness is the ratio of Skewness to its standard error and can be used to test normality. Normality is rejected if the figure is less than -2 or greater than +2.

### Testing Normality of Staff Turnover

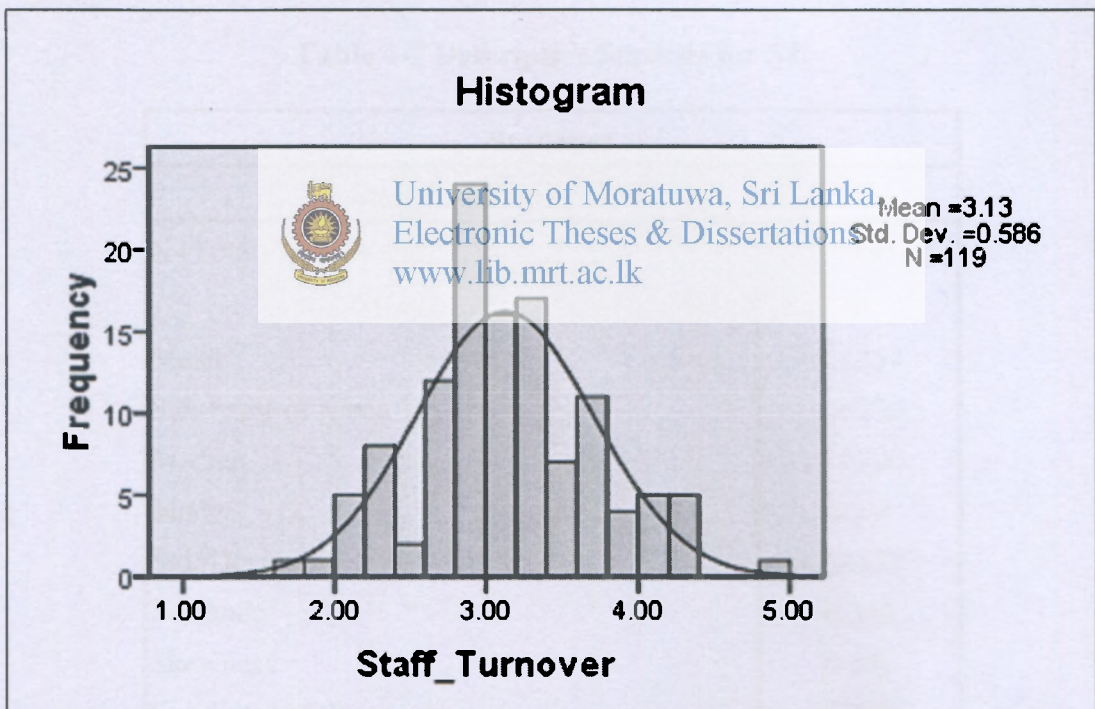


Figure 4-8: Histogram for Staff Turnover (ST)



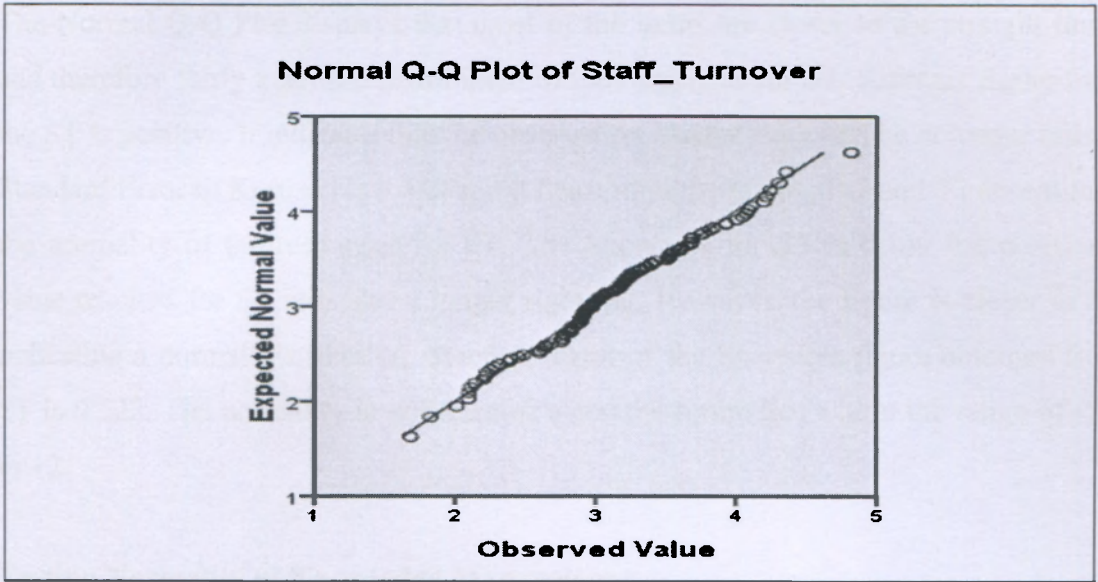


Figure 4-9: Normal Q-Q Plot for Staff Turnover (ST)

Table 4-7 Descriptive Statistic for ST

Statistics	
N (Total)	119
Valid	119
Missing	0
Mean	3.1257
Std. Error of Mean	.05370
Median	3.0700
Mode	3.69
Std. Deviation	.58578
Variance	0.343
Skewness	0.149
Std. Error of Skewness	0.222
Kurtosis	0.091
Std. Error of Kurtosis	0.440
Range	3.14
Minimum	1.68
Maximum	4.82
Sum	371.96

The Normal Q-Q Plot displays that most of the items are closer to the straight line and therefore fairly a normal distribution of the responses for ST. Kurtosis figure for the ST is positive. It indicates that the observation cluster more and have longer tails. Standard Error of Kurtosis is 0.440 and it lies within the range of -2 and +2 accepting the normality of the responses for ST. The Skewness for ST is 0.149 the positive value resulted for ST indicates a longer right tail. However, the figure is closer to 0 indicating a normal distribution. Standard Error of the Skewness figure obtained for ST is 0.222. The normality is not rejected since the figure lies within the range of -2 to +2.

### Testing Normality of Knowledge Management

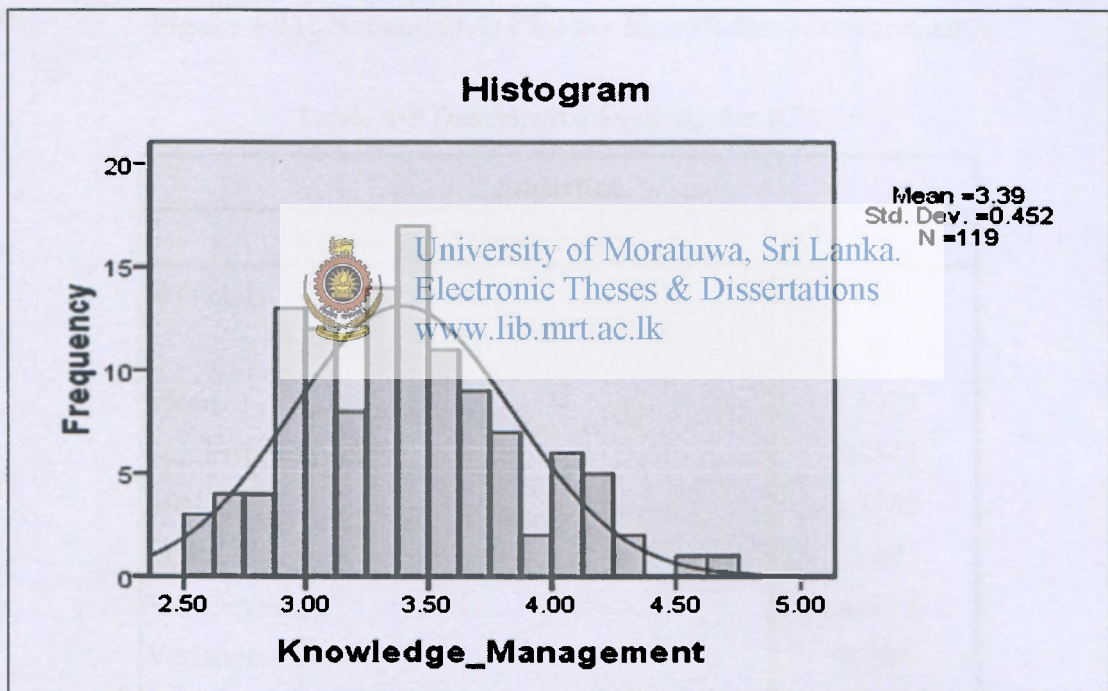
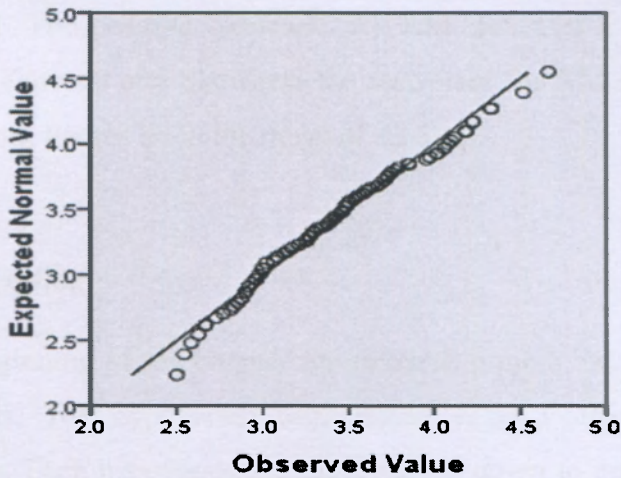


Figure 4-10: Histogram for Knowledge Management



**Normal Q-Q Plot of Knowledge\_Management**



**Figure 4-11: Normal Q-Q Plot for Knowledge Management**

**Table 4-8 Descriptive Statistic for KM**

Statistics	
Knowledge Management	
N (Total)	19
Missing	0
Mean	3.3925
Std. Error of Mean	.04145
Median	3.3750
Mode	3.00
Std. Deviation	.45214
Variance	0.204
Skewness	0.426
Std. Error of Skewness	0.222
Kurtosis	-0.175
Std. Error of Kurtosis	0.440
Range	2.17
Minimum	2.50
Maximum	4.67
Sum	403.71

According to the Histogram, Normal Q-Q Plot a fairly normal distribution is visible. The negative kurtosis indicates observation cluster less and shorter tails of the distribution of KM. The positive Skewness for KM indicates a longer right tail. Standard Error for Kurtosis and Skewness the responses for KM indicate a normal distribution since both figures lie in the range of +2 to -2.

#### 4.4 Hypothesis Testing

As stated at the beginning of the chapter the research project has been designed to test one hypothesis. The hypotheses were tested using Pearson correlation as statistical technique. Each hypothesis has been broken down to null hypothesis and alternative hypothesis as follow in order to test those using different statistical techniques.

##### 4.4.1 Measuring Correlations between the Concepts



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Table 4-9 Correlations of ST and KM

		Knowledge Management	Staff Turnover
Knowledge Management	Pearson Correlation	1	0.233*
	Sig. (2-tailed)		0.011
	N	119	119
Staff Turnover	Pearson Correlation	0.233*	1
	Sig. (2-tailed)	0.011	
	N	119	119

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

(Source: SPSS Analysis for Research Data)



#### 4.4.2 Testing Hypothesis using Pearson correlation

***Ho: Null Hypothesis***

**There is a no strong positive relationship between high Staff Turnover and weak Knowledge Management.**

***H1: Alternative Hypothesis***

**There is a strong positive relationship between high Staff Turnover and weak Knowledge Management.**

As displayed in table 4.9, since the significance is less than 0.05, which is 0.011, the author can reject the Null Hypothesis of H1. Therefore, the outcome is that there is a strong positive relationship between high staff turnover and weak knowledge management.

According to table 4.9 the Pearson correlation is 0.233, which explains a positive correlation between Staff Turnover and Knowledge Management. H1 accepted strong positive relationship between high staff turnover and weak knowledge management. The Pearson correlation does not have strong positive relationship, which was below 0.5.

Therefore, the Alternative hypothesis (H1) is rejected.

#### 4.5 Chapter Summary

This chapter is devoted to conduct the quantitative analysis of the data collected through the research study. Sample profile was analyzed with a view of understand the demographic nature of the respondents. A statistical analysis was attempted, in order to understand the characteristics of each concept and variables. The hypotheses designed at chapter 3 were tested using the SPSS software tools like Person correlation.

## CHAPTER 5

### DISCUSSION, CONCLUSION AND IMPLICATION

This Chapter discusses the conclusion arising from the research conducted by the author and is intended to provide an overview of the study and highlight the findings as well as managerial implication of the research and suggestions for future research in the context of limitations encountered in conducting the research activities and theoretical framework building.

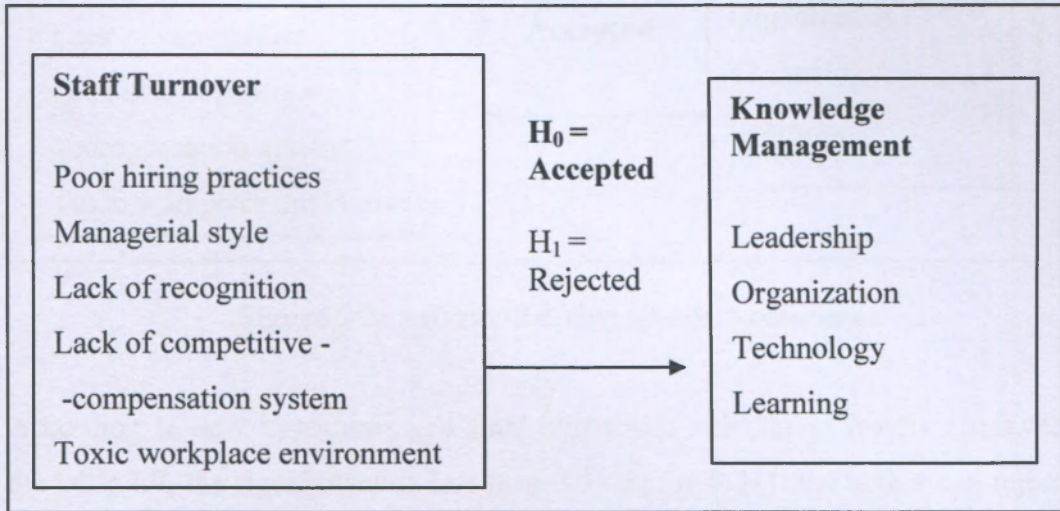
#### 5.1 Discussion and Conclusion

This study has focused on finding out the impact of Staff Turnover on Knowledge Management at Sri Lankan software companies. It involved a study of randomly selected software related companies and their employees were categorized in 13 job roles. In the study, a survey questionnaire was used for data collection and findings were based on the 119 responses received from this randomly selected direct IT industry companies. The research findings indicate that, there is a significant relationship between ST and KM. This impact of staff turnover on knowledge management has major effect on business productivity and technology development and ultimately achieving success in market place. Hence, this study offers an expanded view of this effect providing relevant and interesting insights to the understanding of the impact of Staff Turnover on Knowledge Management. These findings are expanded in the following sections.



## 5.2 Discussion on Hypothesis

It is useful to discuss the hypotheses developed in this research by referring to the following diagram.



**Figure 5-1: Null Hypothesis Acceptance**

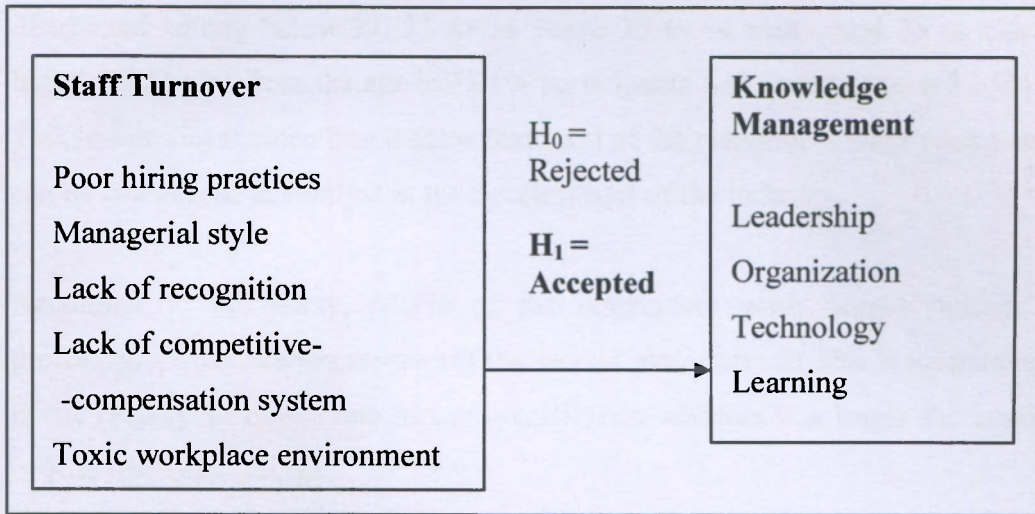
The results provide support for the relationships specified in the model. According to the findings of the research, the alternative hypothesis (H<sub>1</sub>) is rejected. Hence, it was identified that there is a no strong positive relationship between high Staff Turnover and weak Knowledge Management. However, the author likes to re write his hypothesis argument as follows.

**H<sub>0</sub>: Null Hypothesis**

**There is no positive relationship between high Staff Turnover and weak Knowledge Management.**

**H<sub>1</sub>: Alternative Hypothesis**

**There is a positive relationship between high Staff Turnover and weak Knowledge Management.**



**Figure 5-2: Alternative Hypothesis Acceptance**

According to new hypothesis and final hypothesis calculation results displayed on the table 4.9, the significance is less than 0.05 that is 0.011; the author can reject the null hypothesis. Therefore, the outcome is that there is a positive relationship between high Staff Turnover and weak Knowledge Management. According to table 4.9 the Pearson correlation is 0.233, which explains a positive correlation between Staff Turnover and Knowledge Management. H<sub>1</sub> accepted positive relationship between high Staff Turnover and weak Knowledge Management. The Pearson correlation does have positive relationship which was below 0.5.

Since the null hypothesis (H<sub>0</sub>) had been rejected, the author concluded the discussion on hypothesis as there is a positive relationship between high Staff Turnover and weak Knowledge Management.

### 5.3 Further Discussion

A notable finding emanating from this study was the impact of Staff Turnover on Knowledge Management to Sri Lankan software companies. It has been found that nearly 41.2% were females and 58.8 % were males. Who responded their views of the organization KM, as well as how they think about impact of ST. Their ages were



distributed among below 21, 21 to 34 years, 35 to 44 years, and 55 or older. The highlighted point from the age is 73.1% participants were age between 21- 34 years. This is significant since it will show that most of the responders were young and they can be considered as catalyst in the development of the industry.

According to the study, 64.7% of the responders were degree holders while professional qualification represents the second place with 21.8%. It means that most of the employees hold some sort of qualification and this will imply the importance of KM with the findings.

Further study revealed that 27.7 % of the responders were involved in programming and software development. In the results, it was noticed that 32.8% have work experience for more than 5 years. Whereas, the responders who have been working in the same organization for more than 10 years were 9.2%, 3 to 5 years were 25.2% and 1 to 2 years were 27.7 %. These were very intriguing and reflex the nature of the industry itself. Because 90% of the people who do not have experience in the same company for over 10 years



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#### **5.4 Theoretical Implications and Further Research**

The findings emanating from this study have a number of implications for both theory and practice. KM can be broadened and deepened if it can use the full range of capacity of human resources. It means by bringing a lesser number of ST it is always helpful for the organization to be productive in nature. In this research it has been attempted to link KM with ST. Hence further research also can be done in other sectors in services etc.

According to the research findings there is a relationship between ST and KM. but for the future research researcher can incorporate more variables since this research concentrate on variables which are Leadership, Organization, Technology and Learning in Knowledge Management and Recruitment Practices, Managerial style,

Lack of recognition, Lack of competitive compensation system and Toxic workplace environment in Staff turnover. Future work may improve the size of sample and population to go for a generalized solution for IT industry.

## 5.5 Managerial Implications

This research study addressed the impact of turnover on Knowledge Management behavior on IT professionals in software development companies. The entire research is based on the IT industry, the problem domain in more common to any industry in the world. Hence, these literatures can contribute to any industry in a more generalized view.

There is an immense competition in the software sector because of the growing nature of the industry. The IT workforce in Sri Lanka grew by nearly 10,000 over the two years from 2004 and nearly 14,500 IT workers are required in the next two years (2007 - 2008). There is a demand for 7,672 IT workers in 2007 as stated by Sri Lanka Information Communication Technology Association.



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The hypothesis of positive relationship between high ST and weak KM has been proved to show that management can reduce staff turnover for effective knowledge management. This will highlight the factors that reduction of staff turn over can be triggered by using effective KM. Furthermore the relationship between KM and ST can be tested in other industries as well. Managers can incorporate this in their training and development manuals in order to reduce higher staff turnover. Even in recruitment it can be incorporated.



## 5.6 Limitations

The following are the limitations of this research. This research only focuses on the software sector in Sri Lanka. Because of this, possibility of drawing generalization from the findings of the present study is limited. However, this can be further expanded into fields such as Banking and Leasing etc.

This research only focused on few variables in Staff Turnover such as poor hiring practices, managerial style, lack of recognition, and lack of competitive compensation system, toxic workplace environment and Knowledge Management measure on leadership, organization, technology, and learning for the future researchers can expand by incorporating more variables.

There was no pilot project follow-up, to measure accuracy of the estimates and the get an idea of the questions of the estimation method. However, the author follows the research on a single stage research method and concludes the research based on the questionnaire responses.



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During the research, author had to face the difficulty to find out proper documentations of a listing of companies by sector and size of the organizations and eventually made sample selection to be difficult. Therefore, a random sampling method was used to select the survey and the sample population which was direct IT companies in Sri Lanka.

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**Appendix A: Survey Questionnaire**  
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# Questionnaire

## Impact of Staff Turnover on Knowledge Management in Sri Lankan Software Companies

Dear Participant,

I'm a postgraduate student following MBA – IT program at the University of Moratuwa, Sri Lanka. As part of my study program, I am conducting a research on the topic “Impact of Staff Turnover on Knowledge Management in Sri Lankan Software Companies”

I am using the following questionnaire to collect data necessary for the research and the questionnaire contains 40 short questions that can be quickly answered.

I wish to thank you in advance for answering this questionnaire and spending your valuable time. Your contribution is highly appreciated.



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## Instructions

Please rate each of the items in the questionnaire relative to your organization. The rating scale is from

Strongly agree - (5)

Agree - (4)

Neither agree nor disagree - (3)

Disagree - (2)

Strongly disagree - (1)

## Part A - Staff Turnover

No	Item	<i>Please mark X below</i>				
		1	2	3	4	5
<b>Recruitment Practices</b>						
1.	In recruiting professionals, the quality of their qualifications is not emphasized.					
2.	The recruitment process is not consistent and is ad-hoc.					
3.	The experience of the candidate is not considered in recruiting.					
4.	The qualification of a candidate is not always matched to the job they are recruited for.					
<b>Management Style</b>		<i>Please mark X below</i>				
5.	The Management is focused only on making a profit.					
6.	The highest priority of the organization is cost cutting.					
7.	I have been assigned more work than I expected to do.					
8.	I always find that there is a mismatch between what the management expects and the work I produce.					
9.	I think my manager makes my work very stressful.					
<b>Recognition</b>		<i>Please mark X below</i>				
10.	I am uncertain about my career path and promotion in the company.					


11.	There is no recognition for successful project completion.					
12.	There are no specific methods to recognize achievement in my company.					
<b>Competitive Compensation System</b>		<i>Please mark X below</i>				
13.	I think my salary is below industry standard rates.					
14.	My organization does not provide additional benefits like medical, traveling, etc					
15.	There has been no change in salary or increment structure for the last few years.					
<b>Toxic Work Environment</b>		<i>Please mark X below</i>				
16.	My organization has a sense of community.					
17.	The organizational culture encourages me to work.					
18.	I have not been properly treated as per my qualifications and experience.					
19.	My workload is too much.					
20.	There is no proper training for latest developments in technology.					

### Part B -Knowledge Management

No	Item	1	2	3	4	5
<b>Leadership</b>		<i>Please mark X below</i>				
21.	We have many leaders in our organization responsible for innovation.					
22.	We have no resources for training and development.					
23.	The top management provides a special incentive program for new product development.					
<b>Organization</b>		<i>Please mark X below</i>				



24.	There is a long history of innovations and new product development in our organization.						
25.	There is a separate section for training and development.						
26.	There is a mechanism, which allows the sharing of knowledge among employees.						
<b>Technology</b>		<i>Please mark X below</i>					
27.	There is a system to review existing technology every year.						
28.	We follow updated international standards and procedures for our business process.						
29.	There is no updated technology for business requirements.						
30.	There is a problem of proper usage of technology by employees.						
<b>Learning</b>		<i>Please mark X below</i>					
31.	There is a “learning culture” among employees.						
32.	There is an incentive for employees who are follow courses related to the development of IT.						
33.	We use many formal methods of forecasting (like trend analysis).						
34.	Training /education programs and integration of new products and processes is ongoing.						


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**Part C**

The following questions are for analytic purposes only. They will not be used to try to identify any individual. However, if you feel uncomfortable about answering any of them, do not do so. Whether or not you leave any questions blank, please return your questionnaire.

35.	How long have you worked for the present Company?	<i>Please mark X below</i>
	a) 1-2 years	
	b) 2-3 years	
	c) 3- 5 years	

	d) 5- 10 years	
	e) 10 years or more	
36.	How long have you been in the IT industry?	<i>Please mark X below</i>
	a) 1-2 years	
	b) 2-3 years	
	c) 3-5 years	
	d) 5-10 years	
	e) 10 years or more	
37.	What is your age?	<i>Please mark X below</i>
	a) Under 21 years	
	b) 21 to 34 years	
	c) 35 to 44 years	
	d) 45 to 54 years	
	e) 55 years or older	
38.	Your gender:	<i>Please mark X below</i>
	a) Male	
	b) Female	
39.	What is your education?	<i>Please mark X below</i>
	a) GCE A/L	
	b) Diplomas	
	c) Degree	
	d) Postgraduate degree	
	e) Other (please specify)	
40.	Which department are you in?	<i>Please mark X below</i>
	a) Database Administration and Development	
	b) Digital Media and Animation	
	c) Systems and Network Administration	
	d) Project and Program Management	
	e) Technical Support	
	f) Web Development	
	g) Solutions and Technical Architect	
	h) Business Analysis and Systems Integration	
	i) Programming and Software Engineering	
	j) Testing & Quality Assurance	
	k) Management Information Systems / IT Management	
	l) Technical Writing	
	m) Sales and Marketing	
	n) Other (please specify)	



## Descriptive Analysis of Survey Response

Age Group	Male	Female	Total
18-25 years			
26-35 years			
36-45 years			
46-55 years			
56-65 years			
66-75 years			
76-85 years			
86-95 years			
96-105 years			

Gender	Male	Female	Total
Male			
Female			

Appendix



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Descriptive Analysis of Survey Response

Level of Education	Male	Female	Total
Primary			
Secondary			
Higher Secondary			
University			
Postgraduate			

## Descriptive Analysis of Survey Response

<b>Age</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 21 years	2	1.7	1.7	1.7
	21 to 34 years	87	73.1	73.1	74.8
	35 to 44 years	20	16.8	16.8	91.6
	45 to 54 years	4	3.4	3.4	95.0
	55 years or older	6	5.0	5.0	100.0
	Total	119	100.0	100.0	

<b>Gender</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	70	58.8	58.8	58.8
	Female	49	41.2	41.2	100.0
	Total	119	100.0	100.0	



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<b>Education</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diplomas	14	11.8	11.8	11.8
	Degree	77	64.7	64.7	76.5
	Postgraduate degree	26	21.8	21.8	98.3
	Other	2	1.7	1.7	100.0
	Total	119	100.0	100.0	



<b>The_Present_Company</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1-2 years	33	27.7	27.7	27.7
2-3 years	33	27.7	27.7	55.5
3- 5 years	30	25.2	25.2	80.7
5- 10 years	12	10.1	10.1	90.8
10 years or more	11	9.2	9.2	100.0
Total	119	100.0	100.0	

<b>The_IT_Industry</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1-2 years	16	13.4	13.4	13.4
2-3 years	23	19.3	19.3	32.8
3- 5 years	41	34.5	34.5	67.2
5- 10 years	25	21.0	21.0	88.2
10 years or more	14	11.8	11.8	100.0
Total	119	100.0	100.0	

Department				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Database Administration and Development	5	4.2	4.2	4.2
Digital Media and Animation	4	3.4	3.4	7.6
Systems and Network Administration	8	6.7	6.7	14.3
Project and Program Management	9	7.6	7.6	21.8
Technical Support	8	6.7	6.7	28.6
Web Development	3	2.5	2.5	31.1
Solutions and Technical Architect	9	7.6	7.6	38.7
Business Analysis and Systems Integration	14	11.8	11.8	50.4
Programming and Software Engineering	33	27.7	27.7	78.2
Testing & Quality Assurance	10	8.4	8.4	86.6
Management Information Systems/IT Management	6	5.0	5.0	91.6
Technical Writing	8	6.7	6.7	98.3
Sales and Marketing	2	1.7	1.7	100.0
Total	119	100.0	100.0	



## Appendix C: Frequency Tables

### Appendix C.1: Frequency Table 1

Category	Frequency	Percentage
Male	120	60%
Female	80	40%
<b>Total</b>	<b>200</b>	<b>100%</b>

### Appendix C.2: Frequency Table 2

Category	Frequency	Percentage
Group A	150	75%
Group B	50	25%
<b>Total</b>	<b>200</b>	<b>100%</b>

### Appendix C.3: Frequency Table 3

Category	Frequency	Percentage
Category X	100	50%
Category Y	100	50%
<b>Total</b>	<b>200</b>	<b>100%</b>



**Appendix C: Frequency Tables**  
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## Analysis of the Responses for Each indicator - Frequency Tables

<b>Recruitment_Practices_1</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	22	18.5	18.5	18.5
	Disagree	27	22.7	22.7	41.2
	Neither agree nor disagree	23	19.3	19.3	60.5
	Agree	33	27.7	27.7	88.2
	Strongly agree	14	11.8	11.8	100.0
	Total	119	100.0	100.0	

<b>Recruitment_Practices_2</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	16	13.4	13.4	13.4
	Disagree	27	22.7	22.7	36.1
	Neither agree nor disagree	14	11.8	11.8	47.9
	Agree	45	37.8	37.8	85.7
	Strongly agree	17	14.3	14.3	100.0
	Total	119	100.0	100.0	

<b>Recruitment_Practices_3</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	29	24.4	24.4	24.4
	Disagree	46	38.7	38.7	63.0
	Neither agree nor disagree	7	5.9	5.9	68.9
	Agree	32	26.9	26.9	95.8
	Strongly agree	5	4.2	4.2	100.0
	Total	119	100.0	100.0	



<b>Recruitment_Practices_4</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	7.6	7.6	7.6
	Disagree	38	31.9	31.9	39.5
	Neither agree nor disagree	21	17.6	17.6	57.1
	Agree	41	34.5	34.5	91.6
	Strongly agree	10	8.4	8.4	100.0
	Total	119	100.0	100.0	

<b>Management_Style_5</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	7.6	7.6	7.6
	Disagree	20	16.8	16.8	24.4
	Neither agree nor disagree	23	19.3	19.3	43.7
	Agree	38	31.9	31.9	75.6
	Strongly agree	29	24.4	24.4	100.0
	Total	119	100.0	100.0	

<b>Management_Style_6</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	7.6	7.6	7.6
	Disagree	31	26.1	26.1	33.6
	Neither agree nor disagree	16	13.4	13.4	47.1
	Agree	39	32.8	32.8	79.8
	Strongly agree	24	20.2	20.2	100.0
	Total	119	100.0	100.0	

<b>Management_Style_7</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	2.5	2.5	2.5
	Disagree	41	34.5	34.5	37.0
	Neither agree nor disagree	22	18.5	18.5	55.5
	Agree	41	34.5	34.5	89.9
	Strongly agree	12	10.1	10.1	100.0
	Total	119	100.0	100.0	

<b>Management_Style_8</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	12	10.1	10.1	10.1
	Disagree	39	32.8	32.8	42.9
	Neither agree nor disagree	39	32.8	32.8	75.6
	Agree	23	19.3	19.3	95.0
	Strongly agree	6	5.0	5.0	100.0
	Total	119	100.0	100.0	

<b>Management_Style_9</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	5.9	5.9	5.9
	Disagree	54	45.4	45.4	51.3
	Neither agree nor disagree	23	19.3	19.3	70.6
	Agree	32	26.9	26.9	97.5
	Strongly agree	3	2.5	2.5	100.0
	Total	119	100.0	100.0	



Recognition_10				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	13	10.9	10.9	10.9
Disagree	32	26.9	26.9	37.8
Neither agree nor disagree	31	26.1	26.1	63.9
Agree	23	19.3	19.3	83.2
Strongly agree	20	16.8	16.8	100.0
Total	119	100.0	100.0	

Recognition_11				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	19	16.0	16.0	16.0
Disagree	42	35.3	35.3	51.3
Neither agree nor disagree	21	17.6	17.6	68.9
Agree	26	21.8	21.8	90.8
Strongly agree	11	9.2	9.2	100.0
Total	119	100.0	100.0	

Recognition_12				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	12	10.1	10.1	10.1
Disagree	24	20.2	20.2	30.3
Neither agree nor disagree	38	31.9	31.9	62.2
Agree	29	24.4	24.4	86.6
Strongly agree	16	13.4	13.4	100.0
Total	119	100.0	100.0	

<b>Competitive_Compensation_System_13</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	5.9	5.9	5.9
	Disagree	30	25.2	25.2	31.1
	Neither agree nor disagree	19	16.0	16.0	47.1
	Agree	34	28.6	28.6	75.6
	Strongly agree	29	24.4	24.4	100.0
	Total	119	100.0	100.0	

<b>Competitive_Compensation_System_14</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	21	17.6	17.6	17.6
	Disagree	49	41.2	41.2	58.8
	Neither agree nor disagree	8	6.7	6.7	65.5
	Agree	24	20.2	20.2	85.7
	Strongly agree	17	14.3	14.3	100.0
	Total	119	100.0	100.0	

<b>Competitive_Compensation_System_15</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	15	12.6	12.6	12.6
	Disagree	42	35.3	35.3	47.9
	Neither agree nor disagree	21	17.6	17.6	65.5
	Agree	31	26.1	26.1	91.6
	Strongly agree	10	8.4	8.4	100.0
	Total	119	100.0	100.0	



<b>Toxic_Work_Environment_16</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	.8	.8	.8
	Disagree	11	9.2	9.2	10.1
	Neither agree nor disagree	18	15.1	15.1	25.2
	Agree	45	37.8	37.8	63.0
	Strongly agree	44	37.0	37.0	100.0
	Total	119	100.0	100.0	

<b>Toxic_Work_Environment_17</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	1.7	1.7	1.7
	Disagree	12	10.1	10.1	11.8
	Neither agree nor disagree	7	5.9	5.9	17.6
	Agree	61	51.3	51.3	68.9
	Strongly agree	37	31.1	31.1	100.0
	Total	119	100.0	100.0	

<b>Toxic_Work_Environment_18</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	5.0	5.0	5.0
	Disagree	23	19.3	19.3	24.4
	Neither agree nor disagree	17	14.3	14.3	38.7
	Agree	50	42.0	42.0	80.7
	Strongly agree	23	19.3	19.3	100.0
	Total	119	100.0	100.0	

<b>Toxic_Work_Environment_19</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	4	3.4	3.4	3.4
Disagree	22	18.5	18.5	21.8
Neither agree nor disagree	41	34.5	34.5	56.3
Agree	40	33.6	33.6	89.9
Strongly agree	12	10.1	10.1	100.0
Total	119	100.0	100.0	

<b>Toxic_Work_Environment_20</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	6	5.0	5.0	5.0
Disagree	17	14.3	14.3	19.3
Neither agree nor disagree	20	16.8	16.8	36.1
Agree	44	37.0	37.0	73.1
Strongly agree	32	26.9	26.9	100.0
Total	119	100.0	100.0	

<b>Leadership_21</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	8	6.7	6.7	6.7
Disagree	34	28.6	28.6	35.3
Neither agree nor disagree	21	17.6	17.6	52.9
Agree	42	35.3	35.3	88.2
Strongly agree	14	11.8	11.8	100.0
Total	119	100.0	100.0	



<b>Leadership_22</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	12	10.1	10.1	10.1
	Disagree	21	17.6	17.6	27.7
	Neither agree nor disagree	17	14.3	14.3	42.0
	Agree	43	36.1	36.1	78.2
	Strongly agree	26	21.8	21.8	100.0
	Total	119	100.0	100.0	

<b>Leadership_23</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	7.6	7.6	7.6
	Disagree	21	17.6	17.6	25.2
	Neither agree nor disagree	24	20.2	20.2	45.4
	Agree	40	33.6	33.6	79.0
	Strongly agree	25	21.0	21.0	100.0
	Total	119	100.0	100.0	

<b>Organization_24</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	2.5	2.5	2.5
	Disagree	27	22.7	22.7	25.2
	Neither agree nor disagree	16	13.4	13.4	38.7
	Agree	45	37.8	37.8	76.5
	Strongly agree	28	23.5	23.5	100.0
	Total	119	100.0	100.0	

<b>Organization_25</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	14	11.8	11.8	11.8
	Disagree	15	12.6	12.6	24.4
	Neither agree nor disagree	8	6.7	6.7	31.1
	Agree	37	31.1	31.1	62.2
	Strongly agree	45	37.8	37.8	100.0
	Total	119	100.0	100.0	

<b>Organization_26</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	4.2	4.2	4.2
	Disagree	18	15.1	15.1	19.3
	Neither agree nor disagree	13	10.9	10.9	30.3
	Agree	44	37.0	37.0	67.2
	Strongly agree	39	32.8	32.8	100.0
	Total	119	100.0	100.0	

<b>Technology_27</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	16	13.4	13.4	13.4
	Disagree	27	22.7	22.7	36.1
	Neither agree nor disagree	14	11.8	11.8	47.9
	Agree	42	35.3	35.3	83.2
	Strongly agree	20	16.8	16.8	100.0
	Total	119	100.0	100.0	



<b>Technology_28</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	20	16.8	16.8	16.8
	Disagree	15	12.6	12.6	29.4
	Neither agree nor disagree	18	15.1	15.1	44.5
	Agree	49	41.2	41.2	85.7
	Strongly agree	17	14.3	14.3	100.0
	Total	119	100.0	100.0	

<b>Technology_29</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	9.2	9.2	9.2
	Disagree	39	32.8	32.8	42.0
	Neither agree nor disagree	23	19.3	19.3	61.3
	Agree	31	26.1	26.1	87.4
	Strongly agree	15	12.6	12.6	100.0
	Total	119	100.0	100.0	

<b>Technology_30</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	16	13.4	13.4	13.4
	Disagree	29	24.4	24.4	37.8
	Neither agree nor disagree	20	16.8	16.8	54.6
	Agree	41	34.5	34.5	89.1
	Strongly agree	13	10.9	10.9	100.0
	Total	119	100.0	100.0	

Learning_31					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	5.0	5.0	5.0
	Disagree	6	5.0	5.0	10.1
	Neither agree nor disagree	13	10.9	10.9	21.0
	Agree	65	54.6	54.6	75.6
	Strongly agree	29	24.4	24.4	100.0
	Total	119	100.0	100.0	

Learning_32					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	9.2	9.2	9.2
	Disagree	30	25.2	25.2	34.5
	Neither agree nor disagree	23	19.3	19.3	53.8
	Agree	36	30.3	30.3	84.0
	Strongly agree	19	16.0	16.0	100.0
	Total	119	100.0	100.0	

Learning_33					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	5.0	5.0	5.0
	Disagree	25	21.0	21.0	26.1
	Neither agree nor disagree	40	33.6	33.6	59.7
	Agree	33	27.7	27.7	87.4
	Strongly agree	15	12.6	12.6	100.0
	Total	119	100.0	100.0	



Learning_34					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	1.7	1.7	1.7
	Disagree	22	18.5	18.5	20.2
	Neither agree nor disagree	35	29.4	29.4	49.6
	Agree	46	38.7	38.7	88.2
	Strongly agree	14	11.8	11.8	100.0
	Total	119	100.0	100.0	



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