

YANGON INSTITUTE OF ECONOMICS

Ph.D PROGRAMME

**AN ANALYSIS ON HUMAN RESOURCE MANAGEMENT
OF ICT INDUSTRY IN MYANMAR**

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AUGUST, 2012

**An Analysis on Human Resource Management
of ICT Industry in Myanmar**

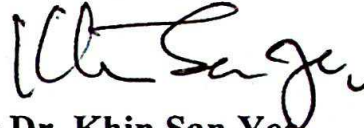
**Submitted in Partial Fulfillment of the Requirement for the Degree of
Doctor of Philosophy
of the Department of Commerce,
Yangon Institute of Economics, Myanmar**

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YANGON INSTITUTE OF ECONOMICS
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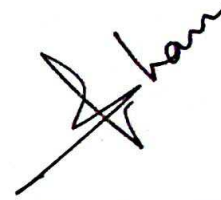
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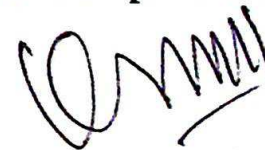
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ABSTRACT

Information and Communication Technology (ICT) sector is heavily being invested in high involvement HRM practices to retain the information technology professionals who are the human capital assets. This study identified multidimensional HRM practices and tested its influence on organizational commitment and turnover intention among ICT professionals using the sample of 300 ICT professionals from 33 ICT companies in Yangon area. Three research instruments were used to obtain data: questionnaire, interview and observation. There were five dimensions, staffing, compensation and benefits, employee participation, training and development, and performance appraisal reflecting HRM practices of privately owned ICT enterprises. Organizational commitment and turnover intention were dependent variables and HRM practices are independent variables. In addition, the study also attempts to determine the differences in the turnover intention based on age, education, gender, tenure and skill level variables. The study revealed that HRM practices are positively associated with organizational commitment and negatively associated with the employees' intent to leave the organization. The study also indicated that among the HRM practices, compensation and benefits had the most influence on organizational commitment and turnover intention. The study observed that the organizational commitment associated with turnover intention. The study explored the skill levels of ICT professionals did not relate with turnover intention. This study also examined the mediating effect of organizational commitment on HRM practices and turnover intention. Myanmar ICT industry is facing shortage of skilled and competent ICT professionals' problem. The study showed that compensation and benefits were the best practice to maximize organizational commitment and reduce turnover intention among ICT professionals, and performance appraisal practice was found as a second important predictor to retain ICT professionals. Therefore, Myanmar ICT companies needed to change their retention strategies focusing on compensation and benefits programmes, and performance appraisal system. Therefore, management might be able to increase the level of organizational commitment and to reduce the level of turnover intention by using effective HRM practices. Thus, the findings of this study for Myanmar ICT industry are: (1) HRM practices were associated with organizational commitment and turnover intention, (2) Compensation and benefits were the best effect practices on organizational commitment and turnover intention, (3) Organizational commitment was influential predictor to turnover intention among ICT professionals (4) Commitment level mediated relationship between HRM practices and turnover intention.

ACKNOWLEDGEMENTS

First and foremost I would like to express my deepest gratitude to Professor Dr. Khin San Yee Rector, Yangon Institute of Economics, for her kind permission and guidance to submit this thesis.

I would like to express my great appreciation and gratitude to Professor Daw Yee Yee Than, Head of Department of Commerce, Yangon Institute of Economics, for her continued encouragement, endless support, understanding and sacrifice.

My deep appreciation is extended to my supervisor, Professor Dr. Moe Moe Yee, Department of Commerce, Yangon Institute of Economics, for her wisdom and guidance. My sincere gratitude and appreciation to Associate Professor, Daw Nwe Nwe Lin (Department of Commerce, retired) for her guidance and assistance during my early years in the programme.

My sincere words of special appreciation gratitude is given to Professor U Kyaw Min Htun (Pro-rector, retired, Yangon Institute of Economics), Professor Dr. Lay Kyi, Head of Statistics Department, Professor Dr. Daw San Kyi (Department of Statistics, retired) and Associate Professor Daw Khin Aye Myint, Department of Statistic.

In addition, I am also very thankful to Professor U Maw Than (Rector, retired, Yangon Institute of Economics), Professor Daw Hla Myint (Head of Department of Management Studies, retired) for their valuable and expert guideline and opinions.

I express my deepest gratitude to U Thein Oo, President, Myanmar Compute Federation, for giving me most valuable references and supports. I am also thankful to Dr. Myint Myint Than, Director, Myanmar Computer Federation for supporting the valuable secondary data and helping to collect primary data. I am deeply grateful to managers and ICT professionals who are working in surveyed ICT companies for providing me the necessary data and assistance to carry out this thesis successfully.

My heart felt to my mother, and two elder sisters for their love and devotion and also to all persons who have assisted me directly or indirectly in successfully completing this thesis.

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LIST OF ABBREVIATION

ACE	Ace Data System
AMO	Ability, Motivation and Opportunity Model
ASEAN	Association of South East Asian Nations
B.C.Sc	Bachelor of Computer Science
B.C. Tech	Bachelor of Computer Technology
C.P.C	Computer Programming Course
D.A.C	Diploma in Automatic Computing Course
ELMs	External Labor Markets
HPWS	High Performance Working System
HRM	Human Resource Management
HR	Human Resource
ICT	Information and Communication Technology
I.C.S.T	Institute of Computer Science and Technology
ICT-S	ICT-Singapore
IS	Information System
IT	Information Technology
ILM	Internal Labor Markets
JITEC	Japanese Information Technology Examination Centre
JITEE	Japanese Information Technology Engineer Examination
KISDI	Korea Information Strategy Development Institute
MCC	Myanmar Computer Corporation
MCIA	Myanmar Computer Industry Association
MCF	Myanmar Computer Federation
MCPA	Myanmar Computer Professional Association
MICT	Myanmar Information and Communication Technology
MOE	Ministry of Education
MOST	Ministry of Science and Technology
MCPA	Myanmar Computer Professional Association
NCC	National Computer Center
NHRD	National Centre for Human Resource Development
OC	Organizational Commitment
OECD	Organization of Economic Co-operation and Development

ROI	Return on Investment
R & D	Research and Development
SA	South Africa
SABC	South Africa Business Communication
SHRM	Strategic Human Resource Management
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for Social Science
SWOT	Strength, Weakness, Opportunities and Threats
TI	Turnover Intention
U.C.C	Universities' Computer Centre
UNDP	United Nations Development Programme
UNAPCICT	United Nations Asian and Pacific Training Centre for Information and Communication Technology for Development

CHAPTER 1

INTRODUCTION

In the modern knowledge intensive economy, human resources are the most critical factors behind the success of corporations. Every organization depends on its people who are the components of any business and the strength for the organization.

There are four most important determinants of economic growth. They are (i) human resource and its quality (ii) natural resources (iii) capital formation and (iv) technological development. These four factors are considered as four wheels of economic growth. Human resource of a country is the most crucial factor in its economic growth. Human resource is comprised of the available labour force and the level of its education, training, skills, and its inventive and innovative abilities.

It is known that management of an organization's most valued assets is management of the people who individually and collectively contributes to the achievement of its objectives. Without effective management of these people, company growth will be restricted and its performance will suffer. A great deal of attention, therefore, must be placed on the management of them. The competence and skills needed to effectively managed people in work settings will be increasingly important to organizations in future years. Furthermore organizations need to attract the effective human resource with potentials to become valued, productive and satisfied employees.

Human resource management is defined as a system, a philosophy, policy and practices that can influence individuals who work in organizations. According to Huang (2000), HRM practice is one area that influences employees' intention to leave, levels of job satisfaction, and organizational commitment.

Management of human resources leads to successful achievement of organization goals. The most important goals of HRM are: to enable the right number of employee, the right qualified workforce, at the right time, at the right place and by the right way to use their potentials for achieving their organizational goals, concurrent strength and success.

Organizations today face an increasingly competitive and rapidly changing environment characterized by a diverse labour market, advancement in information technologies, globalization, deregulation, continuous customer demands and others. To be successful, a firm must be able to improve performance by reducing costs, creating new products and processes, enhancing quality and productivity, and increasing speed to market (Luthans and Sommers, 2005). In this regard, organizations need to focus on the capabilities of their workforces. According to Hayes (2002), effective management of a firm's human resources would be able to generate and increase knowledge, motivation, synergy, and commitment, resulting in a source of sustained competitive advantage for the firm. Commitment has a great impact on the successful performance of an organization. This is because a highly committed employee will identify with the goals and values of the organization; he/she has a stronger desire to belong to the organization and is willing to display greater organizational citizenship behaviour i.e., a willingness to go over and beyond their required job duties. And if human resources are said to be an organization's greatest assets, then committed human resources should be regarded as an organization's competitive advantage. Huselid (1995) argued that HRM practices represent one avenue that can be used by organizations in shaping their employees' attitudes and behaviours. This is because HRM practices create conditions where employees become highly involved in the organization and work hard to accomplish the organization's goals.

It is now commonly accepted that employees create an important source of competitive advantage for firms (Barney, 1991; Pfeffer 1994). As a result, it is important that a firm adopts human resource management practices that make best use of its employees. In the emerging digital economy, human resources are the critical factor behind success. In today's working environment, a company's human resources are truly the only sustainable competitive advantage. Product innovations can be duplicated, but the synergy of a company's workforce cannot be replicated. It is for this reason that not only attracting talented employees but also retaining them is imperative for success.

Therefore, scarcity in skilled personnel can pose a serious threat to knowledge intensive branches, such as information and communication technology (ICT) sector.

ICT plays a very important role in economic development of a country. ICT is also going to impact on the development of other economic sectors. For example, ICT appears to have more qualitative economic benefits like valuable networks between customers and suppliers, innovation in service delivery through the Internet, improved efficiency in manufacturing and enabling firms to reduce routine transaction costs and rationalize supply chains.

ICT sector is one of the most knowledge intensive branches of the economy. The overall importance of ICT has also greatly increased, as it is nowadays widely integrated into almost all functions of the whole economy, business and society.

ICT is an enabler which is required for the functioning of all areas of society. It, therefore, has an impact on the economy, and is in turn affected by economic rises and downturns. The ICT industry is one of the fastest growing segments of world's economy. In accordance with converging technologies and capabilities driven by ICT, and consequent changes in markets and business models, ICT technologies are continuously adopted by business and governments. The rapid and widespread use of computers and information technology has generated a need for highly trained IT workers who are proficient in various job functions. The continued development of the ICT industry (and ultimately the success of the economy as a whole) depends on the availability of sufficient numbers of qualified people with the required skills and competence. Thus, ICT industry requires efficient professionals throughout the organization to play an active role in human resource management.

In today's knowledge based organizations in ICT industry where value is locked in the heads of the work force, they are assumed as important components of the economy. The ICT industry is critical to a country's future both as a major industrial sector in its own right and as a driver of productivity and improved service quality in virtually all other industrial sectors and public services. A highly skilled ICT workforce is the key to business productivity improvement through innovative use of ICT. This in turn provides businesses with the capability to compete successfully for export opportunities. It offers a good ground for research on the HRM of this particular group.

In Myanmar, researchers have presented computer related papers such as papers concerned with computer subjects, computerization in related fields, development of computer education, etc. Universities' Computer Centre (U.C.C), the first computer centre was set up with the assistance of the government and UNDP in 1971. U.C.C aimed at first to educate computer know-how to researchers in the Universities and users in government departments and later to conduct classes for the degree of M.Sc. (Computer Science), Diploma in Automatic Computing Course (D.A.C), Computer Programming Course (C.P.C), and courses for maintaining computer facilities.

In 1986, it was upgraded to university level- the Institute of Computer Science and Technology (I.C.S.T). It conducts computer classes for the degree of Bachelor of Computer Science (B.C.Sc) and Bachelor of Computer Technology (B.C.Tech) in addition to the function done by U.C.C.

Since the establishment of U.C.C., it has been providing training in all aspects of computer operations. Computer applications began at the government departments and organizations, and interest in computer technology appeared among civil servants. But there was no specific departmental trainings related to computer. In addition to U.C.C, there have been departmental training centers set up to meet personnel requirements in computing in since 1980.

Since late 1988, in Myanmar, computers have widely been used and application areas of computer have been significantly expended in accordance with the market oriented economy. In line with the development of computer applications, private computer companies of hardware, software, training, IT service, and telecommunication have also emerged and computer professionals have high job opportunities.

Yangon university under the Ministry of Education offers Master courses on ICT and other universities and colleges are offers diploma and bachelor courses. Private computer training schools also provides ICT professional courses. Some of them offer diploma and undergraduate courses affiliated to international ICT professional training institutions.

Since 1988, the role of computer industry has developed in according to market oriented economy. There have been companies which import computers. Training schools also arise. Government as well as private sectors broadly have applied computers. Computer personals have job opportunities related to computers. Consequently, as government departments and private companies use software, software development companies also appear. After 1990, as network applications started, there were changes in software development on networking and online services.

There are institutions in Myanmar for ICT development. Myanmar Computer Science Development Council was established in 1996. Myanmar Computer Federation (MCF) was established in 1998 and Myanmar Computer Industry Association (MCIA) is subordinated to MCF. There are 301 ICT companies in MCIA. The composites are: software development 24.7 percent, training 27.46 percent, hardware sales 27.14 percent, system integration 11.59 percent and network solutions 8.55 percent.

Informal certification programmes were also initiated recently. Myanmar Computer Professional Association (MCPA) certification programme has been successfully implemented and Japanese Information Technology Examination Centre (JITEC) and Myanmar Computer Federation (MCF) entered into an agreement to implement a cross certification programme. Japanese Information Technology Engineer Examination (JITEE) has been conducted twice a year since 2002. An e-Learning centre was established in 2001 with the support of Japan. The centre is presently providing training courses for JITEE.

According to evidences mentioned above, ICT is increasingly embedded in all aspects of business and government operations in Myanmar, ICT professional skills and competencies have become core elements of many occupations.

1.1 Rationale of the Study

HRM analysis is concerned with the study of how managers manage their employees to achieve organizational goal. An organization an adopt HRM practices which include recruitment, selection, training and compensation. Analysis of HRM practices can made either as independent variables or dependent variables (Ferris, et al, 1999).

Among human resource practitioners, the term "analyzing human resource management" is used generally to signal the view that human resource management practices should enhance firm performance not least in financial terms (Schuler and Jackson, 2005). Contemporary knowledge-intensive organizations are highly dependent on their employees, who possess the organizational knowledge and generate new knowledge as well.

Information technology and telecommunications will profoundly alter social interaction, work and education over the next 20 years. ICT industry become critical agent in the production of the skills required to operate in the knowledge society. To ensure that the ICT future is adequately prepared, ICT professionals, in particular, develop the requisite knowledge and skills.

ICT professional, in turn, serves an interesting and challenging context to study the knowledge intensive occupations and working communities. The scarcity of talented professionals is one of the most critical personnel issues that ICT industry is struggling with (Kolehmainen 2004). Consequently, voluntary labour turnover constitutes one of the severest human resource risks for these organizations (Mobley, W. 1982).

ICT professional possesses scarce and organization-specific knowledge and is therefore difficult to replace. Unplanned personnel losses are especially problematic because the probability of their leaving is the highest question for the most talented and experienced employees. This is because the personnel who are most employable elsewhere- may leave the company. In addition to outflow of talent and expertise, the costs of recruitment and retraining, losses of valuable customer contacts and goodwill are the threats of high employee turnover (Ivancercich et al. 1987).

Employee turnover represents a critical problem to an organization in terms of loss of talent, additional recruitment and training costs (Priyanko G. 2007). The cost of turnover adds hundreds of thousands of dollars to a company's expenses, including hiring and training costs and productivity loss. Industry experts often quote 25 percent of the average employee salary as a conservative estimate of the turnover costs. Prior research suggests that employees' organizational commitment and intention to leave are

two important antecedents of turnover (Griffeth and Hom, 1995). Maertz and Champion (1998) argued that an effective way to decrease actual turnover rate is to identify factors that influence turnover intentions. Organizational commitment has been considered as one of the most important predictors of turnover and intention to leave. It was found that employees who were more committed to their organizations had lower intention to leave than those with lower organizational commitment (Griffeth and Hom, 1995; and Greenhaus, 1992). Wong, et al., (1995) studied a relationship between three attitudinal antecedents to turnover, organizational commitment, job satisfaction and turnover intention. The finding suggests that employees who are committed to an organization are less intended to leave their employers. Scholars have extensively studied organizational commitment because of its significant impact on employees' intention to leave which consequently lower turnover (Meyer and Allen, 1984; 1987; Meyer et al., 1993; Udo, et al., 1997; Samad, 2006).

Since 1988, Myanmar ICT sector has developed in accordance with market oriented economy. ICT has emerged as a major driver of employment. ICT sector of Myanmar has experienced tremendous growth in recent years. Many ICT companies have emerged in Myanmar. ICT professionals have a strong tendency to leave their current employer to work for another organization. Myanmar ICT companies are facing this competitive environment and continuous shortage of competent ICT professionals. Turnover of highly skilled employees can be very expensive and disruptive for firms (Hom,1995). Losing highly skilled staff members means that companies incur substantial costs associated with recruiting and re-skilling, and hidden costs associated with difficulties completing projects and disruptions in team-based work environments (Niederman and Summer, 2003). It is not sure to achieve high level of performance and in turn, organizational goals if employees have no high level of organizational commitment.

Therefore, the continued development of the ICT industry (and ultimately the success of the economy as a whole) depends on increasing ICT professional's commitment and retaining of qualified ICT professionals with the required skills and competences. ICT industry needs to invest in high involvement HRM practices to increase commitment and to retain the ICT professionals who are the human capital assets.

In short, ICT professionals are critical component of the success of the ICT industry. As ICT professionals work in sectors across the nation, it needs to examine issues for organizational commitment and turnover intention from HRM practices.

1.2 Objectives of the Study

The objectives of this thesis are to explore the perceptions of Myanmar ICT professionals on HRM practices adopted by ICT companies and to investigate the effects of these practices on organizational commitment and turnover intention.

The study has adopted the following specific objectives:

- (1) To examine the current status of ICT industry in Myanmar and to explore the sources of potential skill for the ICT industry
- (2) To analyze the relationship between HRM practices and, organizational commitment of ICT professionals
- (3) To analyze the relationship between HRM practices and turnover intention of ICT professionals
- (4) To identify the best HRM practice regarding organizational commitment and turnover intention
- (5) To examine the effect of length of service on turnover intention of ICT professionals
- (6) To analyze the relationship between organizational commitment and turnover intention of ICT professionals
- (7) To describe the mediating effect of organizational commitment on the relationship between HRM practices and turnover intention of ICT professionals of ICT industry in Myanmar

Based on these objectives the following hypotheses were chosen to guide and motivate the study.

- (1) HRM practices are positively correlated with the organizational commitment in Myanmar ICT industry.
- (2) HRM practices of Myanmar ICT industry are negatively correlated with the turnover intention of ICT professionals.

- (3) Compensation and benefits are the best HRM practices to strengthen organizational commitment and reduce turnover intention in Myanmar ICT industry.
- (4) Organizational commitment is negatively correlated with the turnover intention amongst ICT professionals in Myanmar ICT industry.
- (5) ICT professionals with longer organizational tenure have less intention to leave the organization.
- (6) Organizational commitment will mediate the relationship between HRM practices and turnover intention.

1.3 Methodology of the Study

The primary data for this study was collected using questionnaires from 330 ICT professionals and thirty-three managers from thirty-three ICT companies to evaluate the objectives of the study.

The study employed the stratified random sampling method with five lines of business as stratum to ensure the best representation of the industry. Secondary data, other information for the study, are obtained from MCI A. Required primary data were collected from questionnaire survey as well as from interviews with relevant persons. This information was used to measure relationship between HRM practices and organizational performance. For the purpose of this study, a structured questionnaire was constructed into three sections which were used to collect primary data from managers and ICT professionals.

The questionnaire survey and interviews were administered full-time ICT professionals working in the selected ICT companies covering their profiles, their experience in work life considered influences on their professional expertise. In addition, their managers were also surveyed. Section one consisted of questions regarding the background of organization and the profile of managers. Section two consisted of eight questions regarding the personal details of ICT professionals such as age, tenure, gender, education and marital status. Section three was designed to examine ICT professionals' perceptions about HRM practices (staffing, compensation and benefits, employee

participation, training and development, and performance appraisal), and HR outcomes (organizational commitment and turnover intention)

Hundred major ICT companies in the study are divided into five strata: hardware, software, training, IT service and telecommunication. The sample of 33 ICT companies is randomly selected from each stratum using proportional allocation. The questionnaires were sent to sample companies eleven were from hardware, nine software, five IT service, five IT training and three from telecommunication companies.

The prime objective of this study is to ascertain the relationship between HRM practices and organizational performance. The independent variables used to measure these two constructs are: staffing, compensation and benefits, employee participation, training and development, and performance appraisal. As the control variables, age, education, gender, tenure and skill level were used. Organizational commitment and turnover intention are dependent variables examined in this study.

Staffing was assessed using four items. Compensation and benefits were measured using a eight-item scale. Employee participation was measured by six items and training and development were measured using six items. Five items were used to measure performance appraisal. Employee commitment or loyalty was measured using a nine-item scale and turnover intention was measured by a five-item scale.

Both of the dependent and independent variables were constructed from Likert-scale survey responses. As shown in Appendix C, it followed Gardner et al. (2000-2001), Huselid (1995) and Wright et al. (1998) and developed many items to measure each of the constructs used in the hypothesis.

For these items, subjects were asked to respond to a 6-point Likert type scale (1 for strongly disagree, 2 for moderately disagree, 3 for slightly disagree, 4 for slightly agree, 5 for moderately agree and 6 for strongly agree).

To test the hypotheses, Pearson correlation and regression methods were used. The Cronbach's coefficient was used to get the inter item consistency reliability.

1.4 Limitations of the Study

The effect of HRM practices can be studied across occupations, business units, organizational levels, industries and societies. Information technology and telecommunications will profoundly alter social interaction, work and education over the next 20 years. ICT industry becomes critical agent in the production of the skills required to operate in the knowledge society. To ensure that the ICT future is adequately prepared, ICT professionals, in particular, develop the requisite knowledge and skills. Therefore, this study focuses on ICT industry in Myanmar with special reference to Yangon area. Although ICT companies are established in Yangon, Mandalay and Pyin Oo Lwin in Myanmar, most of them exist in Yangon. In Myanmar, most issues related to ICT occur in Yangon. In this study Yangon has been selected as the area of study. Hence study covers the ICT companies in Yangon which are registered in MCIA.

There were 301 ICT companies in Yangon area registered in MCIA according to 2010 MCIA Website. Of these only 100 companies that were operating the ICT related business significantly had been chosen as population in this study.

The field work was conducted during the four months period from May to August 2010 in 33 ICT companies. Organizational performance can be measured by financial outcome, HRM outcomes, organizational outcomes, and capital market outcomes according to Dyer and Reeves (1995). In this study, HRM outcomes (organizational commitment and turnover intention) are employed to assess the performance of the ICT companies.

This study focuses on the effect of five HRM practices on organizational performance. These are staffing, compensation and benefits, employee participation, training and development, and performance appraisal. Reason for choosing these practices is because the majority of firms adopt these practices as the common HRM practices in their work.

There were two respondent groups in this study. The first group included the full-time ICT professionals and the second group consisted of key decision makers on HRM in the

case of ICT companies. ICT companies are separated into five lines of business: Hardware, software, IT service, training and telecommunication. Respondents were chosen from these lines of business to avoid the bias study ignoring the analysis by business lines.

1.5 Organization of the Study

This study comprises five chapters. Chapter 1 deals with introduction to importance of relationship of HRM practices and organizational performance, the objectives, the hypotheses of the study, the limitation of the study, the methodology and design of the study. Chapter 2 reports a review of literature on the research constructs and the relationships among them. The constructs include: five HRM practices, organizational commitment, turnover intention and some approaches to study the link between HRM and organizational performance. Chapter 3 examines the current situation of ICT industry in Myanmar. Chapter 4 presents empirical analysis using regression analysis. The profiles of the respondents, descriptive statistics and the results of hypothesis testing are presented. Chapter 5 presents the conclusion including findings, discussion, recommendations and suggestions, and discusses the implications of these results for future research.

CHAPTER 2

CONCEPTUAL FRAMEWORK OF THE STUDY

2.1 Humana Resource Management

Human resource management (HRM) is the set of practices that businesses use to ensure that they have an effective workforce in place to meet operational needs.

Human resource management is a system, a philosophy, policy and practices that can influence individuals that work in an organization. HRM activities include staffing, training and development, performance appraisal, compensation management, safety and health and industrial relations¹.

HRM is concerned with the "people" dimension in management. Since every organization is made up of people, acquiring their services, developing their skills, motivating them to high levels of performance, and ensuring that they continue to maintain their commitment to the organization are essential to achieving organizational objectives. (Stephen P. Robbins, 1999)

Collins explored HRM from the technical perspective that presumes organizations wish to plan, staff, appraise, compensates, train and develop their employees in order to ensure that the right people (skill-wise) are in the right place (job) at the right time.²

HRM practices refer to organizational activities directed at managing the pool of human resource and ensuring that the resources are employed towards the fulfillment of organizational goals³.

Gary Dessler (2003) defined that the policies and practices involved in carrying out the "people" or human resource aspects of a management position, including recruiting, screening, training, rewarding, and appraising.

¹ Wedell French, (1990), Human Resources Management, 2nd edition, Houghton Mifflin Company

² Collins C, Ericksen J, (2005), Human Resource Management Practices and Firm Performance in Small Business. Cornell University

³ Dessler, G. (2003), Human Resource Management, 9th edition, Pearson Education Inc.

Richard L. Daft (1997) defined that human resource management is activities undertaken to attract, develop, and maintain an effective workforce within an organization⁴.

Armstrong (1995) defined HRM as “a strategic and coherent approach to the management of organization’s most valued assets – the employees who individually and collectively contribute to the achievement of the objectives of the business.” Beer et al. (1984) viewed HRM as involving all management decisions that affect the relationship between the organization and employees – its human resources.

Resources have been defined as “the tangible and intangible assets a firm uses to choose and implement its strategies” (Barney, 2001). This broad definition includes human, organizational, financial and physical resources. Barney (1991) and Teece, Pisano and Shuen (1997) have outlined a framework for determining if a resource can be considered a source of sustained competitive advantage. The key elements of this framework require resources to be valuable, rare, inimitable and non-substitutable. Technology, natural resources and economies of scale can create value. These sources of value are increasingly available to almost anyone anywhere and they are easy to copy, whilst human resources which is defined as “the pool of employees under the firm’s control in a direct employment relationship”⁵ can provide the firm with a source of competitive advantage with respect to its competitors. The first of these criteria is the value added to the company’s production processes, the contribution made by each employee having its effect on the results obtained by the organization as a whole. Also, since employees are not all the same, their characteristics are in limited supply in the market. In addition, these human resources are difficult to imitate. Since it is not easy to identify the exact source of the competitive advantage and reproduce the basic conditions necessary for it to occur.

Finally, these human resources are not easily replaced though short-term substitutes may be found; it is unlikely that they will result in a sustainable competitive advantage link the one provided by human resources.

⁴ Daft, L. Richard (1997), *Management*, 5th edition, The Dryden Press.

⁵ Wright, P.M., McMahan, G.C. and McWilliams, A. (1994), ‘Human Resources and Sustained Competitive Advantage: a Resource Based Perspective’, *The International Journal of Human Resource Management*, 5, 301-326.

Barney (1991) argued that organizations may not obtain the maximum utility from their employees because the employees are not contributing to their fullest potential⁶. It was argued that organizations, through the effects of their HRM practices could maximize the knowledge, skills, and abilities of employees. The focus of the overall body of research, then, is to examine the contributions of HRM policies and practices to the performance of the organizations. The lack of consensus with respect to the constituent parts of HRM, the best practice versus the best fit approach, the different fits, coverage of different employee groups, and the need to consider how HRM practices are perceived.

(1) Lack of Consensus

There appears to be no consensus on the nature of HRM. Some studies focus on the effectiveness of the HR department (Teo, 2002); others focus on the value of human resources in terms of knowledge, skills and competencies (Hitt, Bierman, Shimizu and Kochhar, 2001), a number of studies define HRM in terms of individual practices (Batt, 2002) or systems/bundles of practices (Capelli and Neumark, 2001), others acknowledge the impact of these practices or systems on both the human capital value – in terms of knowledge, skills and abilities – and on employee behaviour directly in terms of higher motivation, increased satisfaction, less absence and increases in productivity (Wright, McMahan and McWilliams, 1994).

The majority of the studies define HRM in terms of HR practices or systems/bundles of practices. There is not one fixed list of generally applicable HR practices or systems of practices that define or construct human resource management. The top four- in order- are training and development, contingent pay and reward schemes, performance management (including appraisal) and careful recruitment and selection. These four practices can be seen to reflect the main objectives of the majority of 'strategic' HRM programmes (e.g., Batt, 2002): namely, to identify and recruit strong performers, provide them with the abilities and confidence to work effectively, monitor their

⁶ Barney, J.B. (1991), "Firm Resources and Sustained Competitive Advantage", *Journal of Management*, 17 (1), 99-120.

progress toward the required performance targets, and reward staff well for meeting or exceeding them.

(2) Best Practice vs. Best Fit

One of the key discussions within HRM is the distinction between the so-called best practice and the best-fit approaches. Some believe there are universalistic best practices in HRM (Pfeffer, 1994), others argue that there are only best-fit practices (Wood, 1999), stating that the effect of HR practices depends on the specific (internal and external) context. It seems logical to believe in a best-fit approach in contrast to a somewhat simplistic best practice approach, but the empirical evidence still supports the best practice approach (Delery and Doty, 1996). Gerhart (2004) demonstrates a critical analysis of those who claim that some form of internal fit – the alignment of practices with each other – outperforms the lack of this type of fit. Gerhart's (2004) evaluation was very convincing in showing that the system approaches that build on the notion of internal fit do not outperform the other approaches in which individual HR practices are not aligned. Boxall and Purcell (2003) argued that both streams – best practice and best-fit – might be right each in their own way. Some basic principles like employee development, employee involvement and high rewards are universally successful, but the actual design of the HR practice depends to some degree on unique organizational contexts. The internal context - for example, the nature of the production system (e.g. assembly line) - might create restrictions with respect to the successful design of some HR practices (e.g. teamwork, performance related pay), but also the external context - for example, the legislation and trade union influence - might have a direct impact on the optimal HRM design. So the whole debate about universalistic best practices versus best-fit practices actually represents two sides of the same coin and both are relevant in exploring the linkage between HRM and Performance.

(3) Different Fits

Wood (1999) made a distinction between four different 'fits': internal fit, organizational fit, strategic fit and environmental fit⁷. Although this is in line with what many other

⁷ 'Human Resource Management and Performance', *International Journal of Management Reviews*, 1(4), 367–413, available online at <http://onlinelibrary.wiley.com>.

researchers consider to be the possible range of fits in HRM research, one of the most important seems to be missing. That is, the fit between how the employee perceives HR practices and whether that perception aligns with the values and goals of the organization. That kind of fit is well known under the heading of Person-Organization fit (P-O fit), which Kristof (1996) defined as the compatibility between people and organizations that occurs when: (a) at least one entity provides what the other needs, or (b) they share similar fundamental characteristics, or (c) both. A number of authors in the field of HRM and performance emphasize the importance of including workers' perceptions. As Van den Berg and colleagues noted (1999), 'an organization may have an abundance of written policies concerning HRM, and top management may even believe it is practiced, but these policies and beliefs are meaningless until the individual perceives them as something important to her or his organizational 'well-being'. Wright and Boswell, (2002) also noted that in measuring HRM, it is vital to distinguish between policies and practices. The former is the organization's stated intentions regarding its various 'employee management activities', whereas the latter are the actual, functioning, observable activities, as experienced by employees. This is yet another plea to pay more attention to workers' perceptions and the importance of person-organization fit.

(4) Coverage of Different Employee Groups

If the conceptualization and operationalization of HR practices or systems of practices are closely studied, it is observed that there is little or no attention to the degree of coverage of HRM, differentiation between employee groups and the percentage of employees covered by the practices and the intensity of HRM, such as, daily, weekly, monthly or yearly interventions.

The early empirical studies on HRM mainly used the input of single respondents, in most cases the input from HR managers (Huselid, 1995). Gerhart et al. (2000) demonstrated the low inter-rater between employees, line managers and HR managers. This is an interesting and highly relevant notion, but at the same time difficult to solve since these empirical results demonstrate fundamental differences between employee groups within an organization. These results suggest that different employee groups

have fundamentally different priorities and needs, something that should be taken into account in future research. Snell (2007) argued that HR differentiation towards specific employee groups is necessary for overall effectiveness. The classification of employee groups within an organization depends on factors like the nature of their jobs (e.g. production, technical support, administration, and management), their professional backgrounds (e.g., level of education, degree of professionalization of the occupation) and needs and wants of individuals (e.g. degree of employment security, need for challenging tasks).

(5) Intended vs. Perceived Practices

Wright (2004) built a strong argument to make a clear distinction between intended HR practices (those designed on a strategic level), actual – or implemented – HR practices (those implemented by for example the direct supervisor), and perceived HR practices (those perceived by the employees). The majority of prior research on HRM and performance appears to focus on intended HRM practices, mainly designed at the strategic level of the organization.

2.2 Organizational Performance

There are variety of performance indicators used in empirical research, the distinction between shareholder and stakeholder approaches, and the kind of implication to understand the concept of performance.

(1) Measuring Performance

The performance outcomes of HRM can be captured in a variety of ways. Dyer and Reeves (1995) explored that performance can be measured by: (1) Financial outcomes (e.g., profits, sales, market share), (2) Organizational outcomes (e.g., output measures such as productivity, quality, efficiencies), (3) HR-related outcomes (e.g., attitudinal and behavioural impacts among employees, such as satisfaction, commitment, and intention to quit)⁸.

⁸ Dyer, L., and Reeves, T. (May31-June 4, 1995). Human Resource Strategies and Firm Performance: What Do We Know and Where Do We Need To Go? Paper presented at the 10th World Congress of the International Industrial Relations Association, Washington, DC.

Profit is the most common factor followed by various measures for sales. Actually, this is quite problematic as financial indicators are being influenced by a whole range of factors (both internal and external), which have nothing to do with employees and their related skills or human capital.

(2) Shareholder vs. stakeholder approach to performance

The use of financial indicators emphasizes a shareholders' approach to the concept of performance, emphasizing that HR practices and systems contribute a sustained competitive advantage through enhancing skills and human capital. This assumes that organizations can maintain or create sustained competitive advantage through unique/rare, scarce, inimitable, and valuable internal resources (Barney, 1991). Human resources are a powerful potential internal resource that fits this general resource based view idea (Paauwe, 1995; Wright et al. 1994). The next step in the theory is that employees or human resources are manageable and developmental. In other words, HR practices can (a) increase the value of the human capital pool through development (e.g., skills training, general training, job rotation, coaching) and (b) influence employee behaviour in the desired direction. The search for the Holy Grail in HRM is the search for those 'best practices' or 'best-fit practices' that ultimately result in sustained competitive advantage of the organization. This can only take place if employees are willing to stay within the organization. Thus, employee commitment in terms of willingness to stay with the firm and willingness to put in extra effort are very important in this context. This is probably why research in the area of HRM and performance is becoming more interested in creating high commitment work environments through HR practices or high involvement – high performance work practices. The high involvement – high performance work practices perspective can thus be seen as an extension of the resource based view. Both organisational outcomes and HR related outcomes can be considered more proximal and thus more suited towards measuring performance.

The stakeholders' approach offers a different perspective by emphasizing the objectives of other constituencies with an interest in HRM practices and subsequent performance

of an organization. Boxall and Purcell (2003) defined three important goals of HRM, among which social legitimacy aimed at bringing about employment citizenship.

The latter argues that the survival of an organization not only depends on financial competitiveness, but also on its ability to legitimize its existence towards society and relevant stakeholders of the organization (e.g., employees, customers, trade unions, local government). *Legitimacy* is an important concept for sustainability on an organizational level, but also the organization's role towards the individual employee and his or her moral values are important: the concept of *fairness*. If the relationship between the employer and the individual employee is out of balance - for example, in the case of increased performance pressures without fair pay - employees might feel they are being exploited, resulting in low commitment levels towards the organization (Paauwe, 2005).

Using a stakeholders' perspective implies that authors (Truss, 2001; Guest and Peccei, 1994) are in favour of using multiple measures of performance in order to do justice to the multiple goals of HRM and to the different parties involved, both inside and outside the firm. It is the more strategic aspect of performance (based on economic rationality), which emphasizes outcomes such as labour productivity, innovation, quality, efficiency gains and flexibility (Boselie et al., 2005) and on the other hand the more societal aspect of performance (based on relational or normative rationality) emphasizing legitimacy and fairness (Paauwe, 2004).

This study uses HRM outcomes (turnover and commitment) as dependent variable because not all surveyed organizations are public listed companies, objective financial data are sensitive and not available. Furthermore, the use of objective financial figures turned out to be not directly comparable in a study covering a wide variety of different types of organizations.

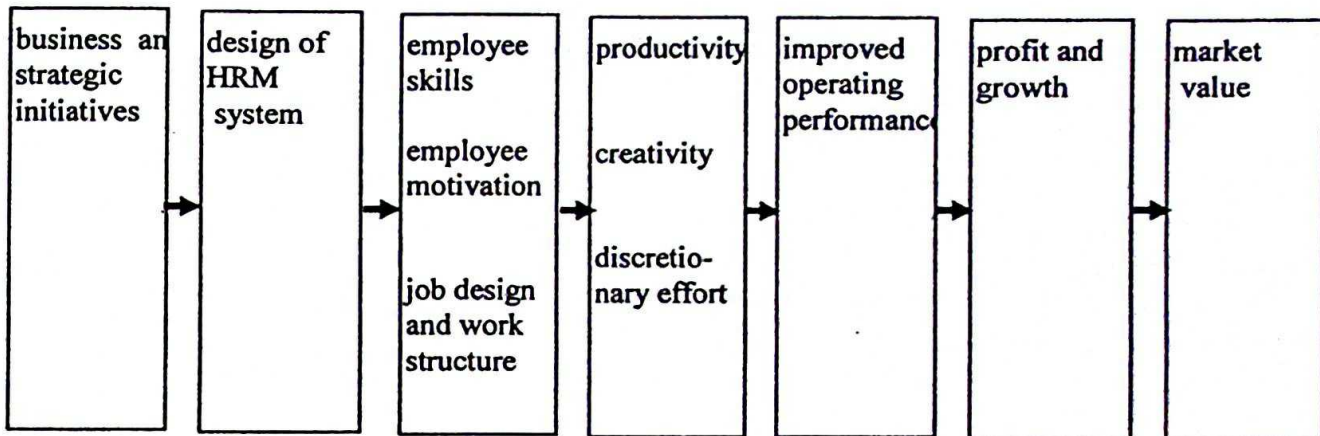
2.3 The Nature of the Relationship between HRM and Performance

The nature of the linkage, the importance of the institutional context and arising conflicting demands, and how to cope with reverse causality are important to overview of issues relating to the HRM and performance linkage.

2.3.1 The Nature of the Linkage

Wright and Gardner (2003) questioned how many boxes should be taken into account when studying the HRM - performance linkage. Becker, Huselid, Pickus and Spratt's (1997) model incorporates 7 boxes, starting with 'business and strategic initiatives' and finishing with 'market value'. In their model the design of the HRM system is derived from the overall business strategy (See Figure 2-1).

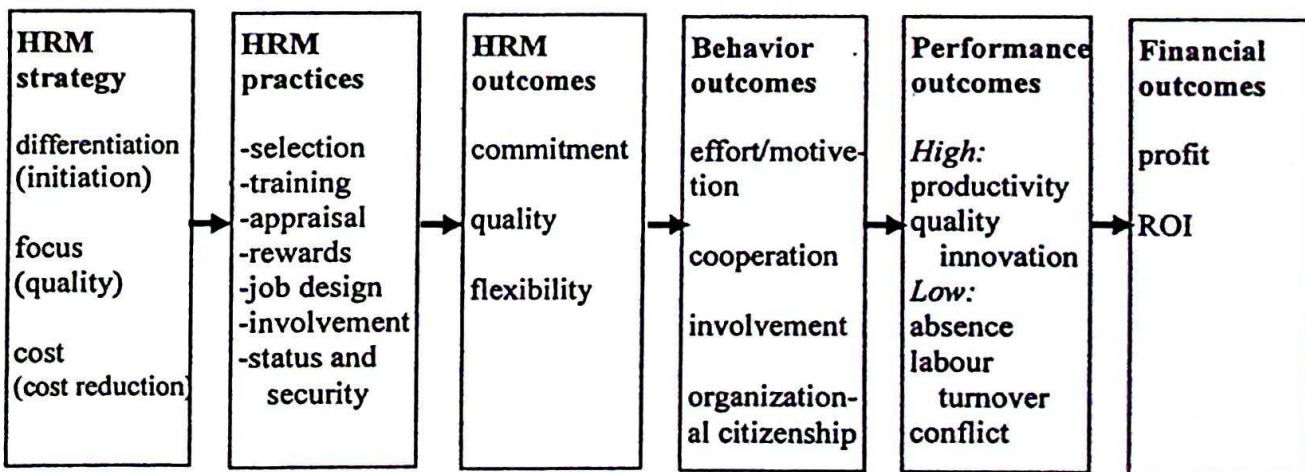
Figure 2-1 Conceptual Model of Becker, Huselid, Pickus and Spratt



Source: Becker et al. (1997), Human Resource Management: Spring 1997

Guest's (1997) model had 6 boxes, starting with a Porter-like strategy typology – distinguishing differentiation/innovation, focus/quality and cost reduction oriented HRM strategies – and ending with the financial outcomes return on investment (ROI) and profits. Again, the HR practices are derived from the overall strategy (See Figure 2-2).

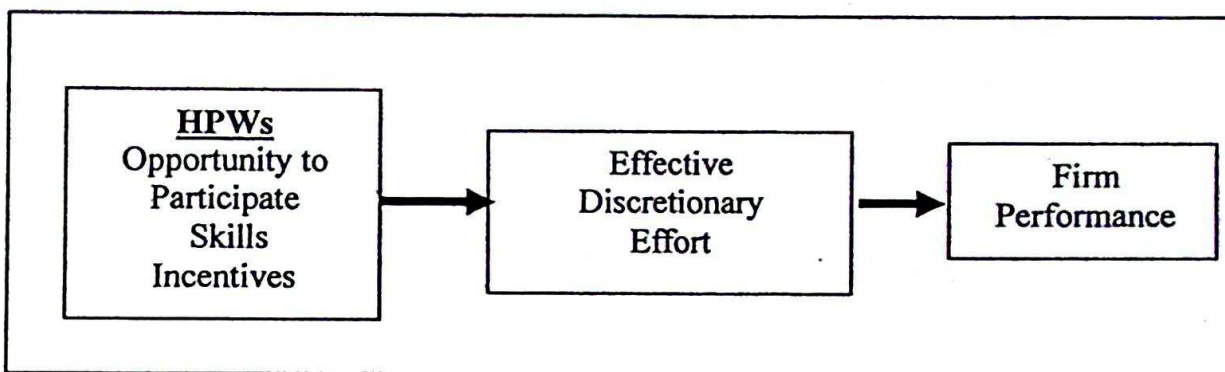
Figure 2-2 Conceptual Model of Guest



Source: Guest (1997), Model of HRM. 4th edition.

Appelbaum et al.'s (2000) AMO-model⁹ links 3 boxes. The first box covers high performance work systems and comprises: (1) ability/skills (e.g., formal and informal training, education), (2) motivation/incentives (e.g., employment security, information sharing, internal promotion opportunities, fair payment) and (3) opportunity to participate (e.g., autonomy, team membership, communication). The second box consists of effective discretionary effort and the final box reflects the plant performance (e.g., quality and throughput time, labour cost per unit of output, operating profit). Figure 2-3 depicts a visual representation of their model.

Figure 2-3 Conceptual Model of Appelbaum, Bailey, Berg and Kalleberg



Source: Appelbaum et al.'s (2000) AMO-model

To study the effects of HR interventions, either multiple individual HR practices or systems/bundles of practices, it is preferable to use outcome variables that are closely linked to these interventions, for example: attitudinal outcomes (e.g. employee satisfaction, motivation, commitment, trust), behavioral outcome (e.g. employee turnover, absence), productivity (output per unit effort), and quality of services or products. As stated before, there is little or no convincing empirical evidence that coherent and consistent systems or bundles automatically lead to higher performance (Gerhart, 2004). This theoretical claim is built on the notion of internal or horizontal 'fit'. But there is another proposition that affects the HRM - performance relationship, at least in theory: the notion of external or vertical/strategic 'fit'. The underlying idea is that matching the overall company strategy with the HR strategy or system will result in increased performance.

⁹ The AMO model (ability, motivation and opportunity) supports the theory that business success is based on the capacity of organisations:

- to recruit people with the right ability, to motivate them, to provide them with the opportunities to use their skills in well-designed jobs.

In this respect it is striking that the framework by Appelbaum et al. (2000), being the most commonly used and depicted above, does not take strategy as a starting point, whereas the other two do so.

2.3.2 Institutional Embeddedness and Conflicting Demands

Paauwe and Boselie (2005) argued that as organizations are embedded in a wider institutional context this plays a role in shaping HRM practices and policies¹⁰. Institutional mechanisms (e.g., legislation with respect to conditions of employment, collective bargaining agreements, employment security, trade union influence, employee representation) shape employment relationships and HR decision making in organizations. Paauwe (2005), for example, argued that most of Pfeffer's (1994) best practices (e.g., high wages, employment security, and employee participation) are institutionalized in a country like the Netherlands. Most of these best practices are formalized and institutionalized through collective bargaining agreements. Paauwe (2005) acknowledged institutional differences at both country level, for example the US versus the Netherlands, and at industry level, for example traditional branches of industry such as the metal industry and the construction building industry versus emerging branches of industry such as the ICT industry. Institutional mechanisms (mimetic, normative and/or coercive) affect the relationship between HRM and performance.

HRM theorization is dominated by a unitarist perspective to conflicting demands between professionals, managers, and different occupational groupings that are represented by their interest groups outside the organization (e.g., professional associations, trade unions, etc). Also the practices themselves might give rise to conflicting outcomes in terms of increased productivity, which managers will appreciate, and increased levels of stress, which workers will probably dislike. Labour intensification through increased employee participation, decentralization, and emphasis on performance management (practices that can be seen as high performance work

¹⁰ Paauwe, J. & Boselie, J.P. (2005). *HRM and Performance: What's Next?* Ithaca, NY: Cornell University, School of Industrial and Labor Relations, International Programmes. <http://digitalcommons.ilr.cornell.edu/intlvf/13>

practices) might create competitive advantage in terms of financial performance, but the individual worker might experience increased levels of stress and anxiety (Legge, 1995).

2.3.3 Reverse Causality

Paauwe and Richardson (1997) observed the risk of overlooking the possibility of reverse causality in linking HRM and performance. Organizations with high profits might reveal a higher willingness to invest in HRM (e.g., profit sharing schemes, training and development) than those that are less successful financially.

The cross-sectional nature of the majority of research on HRM and performance makes it impossible to rule out these types of reverse causality. But there are other potential forms of reverse causality (Boselie and Paauwe, 2005). High firm performance outcomes (e.g., high profits, market growth) might have a positive effect on employee satisfaction and commitment. Most people enjoy being part of 'a winning team' and high firm performance also signals organizational health and thus employment security.

Schneider, Hanges, Smith and Salvaggio (2003) found that profitability is more likely to cause job satisfaction than job satisfaction is to cause profitability.

2.4 Single HRM Practices and Organizational Performances

The implementation of effective HR practices has been shown to play an important role in building and maintaining the commitment of employees towards the organization (Allen et al., 2003). According to Huang (2000), HRM practices are one area that influences employees' intention to leave, levels of job satisfaction, and organizational commitment

HRM practices had an economically and statistically significant effect on turnover, productivity, and corporate financial performance. Huselid (1995) surveyed corporations in New Zealand and found that their HRM practices were related to employee turnover and profitability. The study adopted the five HRM practices for independent variables and two organizational performances for dependent variables.

2.4.1 HRM Practices

Like many other managerial topics, there is a lack in research pertaining to turnover and HRM in developing countries despite calls to expand the international HR perspective (Baruch and Budhwar 2006). This lack of knowledge limits contexts relating to HRM theory (Wright, Scott, Snell and Dyer, 2005). Consequently, HR practitioners face, in developing countries, an absence of focused strategies for combating high turnover rates and improving organizational performance (Khijji and Wang 2006). The importance of managing human resources, the essence of the organization, has been growing over the past years in academia and in practice because the HRM practices help employees to form their attitudes and behaviors (Meyer and Smith, 2000). Earlier, one of the studies found that perceptions of human resource practices are more important than the actual practices in developing employee commitment (Kiniki, Carson, Bohlander, 1992).

Management scholars and practitioners have exerted continuous efforts in learning more about human resource practices and how these practices enhance employees' performance and achieve organizational goals (Ahmad and Schroeder, 2003; Boselie et al. 2001; Guest, 1997; Huselid, 1995). The influence of human resource practices on performance at organizational level, individual level, or group level is an important issue in the area of human resource management and organizational psychology. In this regard, positive perceptions of human resource practices cause employees to believe in social exchange relationship between employees and the organization (Wayne et al. 1997; Lee and Bruvold, 2003). Generally, employees who are satisfied with the organization are willing to contribute to the organization (Eisenberger et al. 2002).

Human resource practices have received increased attention for its impact on organizational performance. The majority of the research in this area has focused on the degree to which these human resource practices can enhance individual and organizational performance. Little work has explored the psychological processes by which such practices influence employee attitudes and behaviors (Zhang and Agarwal, 2009). Thus, there is lack of knowledge of how these human resource practices affect individual employees' perceptions, their attitudes, and their behaviors; and what employees actually think and how they react to the practices (Deery, 2002; Harley, 2002;

Grant and Shields, 2002). Furthermore, little explanation has been given in relation to how these human resource practices influence individual turnover decision (Allen et al. 2003). The plethora of literature of human resource practices have been reported exclusively undertaken in the context of western countries including few other developed nations (Nasurdin, Hemdi, and Guat, 2008; Su and Yeganeh, 2008).

There is a lack of information regarding dynamic nature of human resources in the context of developing countries. Moreover, it is difficult to generalize the human resources practices of the western context, and adopt the western concept of human resources practices to the developing countries. Therefore, more research is needed in the developing context to understand the dynamic nature of human resources and the influence of various human resources practices on the employees of developing countries. According to Budhwar and Debrah (2004), there is a greater need to know how employees in various parts of the world perceive human resource practices in different context.

Thus, the current study is also expected to fill the gap in our knowledge on human resource practices in the context of Myanmar. For the present study, the following human resource practices are considered as the influencing dimensions of HRM practices on turnover intention and organizational commitment in the case of ICT industry in Myanmar.

(a) Staffing

Staffing includes human resources planning and forecasting, recruiting, and selecting employees. Human resources planning and forecasting is the process that a firm uses to ensure that it has the right amount and the right kind of people to deliver a particular level of output or services in the future. Recruiting is the process used to form a pool of job candidates for a particular job. Selection is the process of making a “hire” or “no hire” decision regarding each job applicant for a job¹¹.

Empirical studies such as those conducted by Shaw et al. (1998) indicated that involuntary turnover is affected by staffing practices (recruitment and selection process)

¹¹ Czaplewski, et al. (2001), Financial, Promotion and Non-financial rewards,

and employee monitoring (performance appraisal)¹². Similarly, Schmidt and Hunter (1983) argued that the attention organizations pay their employee selection affects the quality of those recruited. This is reflected in the staffing process – the selection ratio (that is how selective the organization can be) and the validity of the selection process. Using valid selection procedures is likely to result in to better-informed recruitment and selection decisions leading to lower involuntary turnover. Huselid (1995) showed that selective staffing practices are related to total turnover¹³. In the case of monitoring employee performance, the use of performance appraisal is a way organizations keep track of the contributions of each employee (Murphy and Cleveland, 1991). This enables the organization to terminate an employee when his/her contribution is less than desirable. In sum, organizations with effective performance appraisal systems are likely to be able to track down and terminate poor performers. Thus, effective processes of employee selection coupled with performance-based pay system are likely to enable managers to reduce turnover.

(b) Compensation and Benefits

Employee compensation includes all forms of pay and rewards received by employees for the performance of their jobs (Snell and Bohlander G, 2007, p.378). Direct compensation encompasses employee wages and salaries, incentive-payments, bonuses, and commissions. Indirect compensation comprises the many benefits supplied by employers and non financial compensation includes fringe benefits like free insurance, subsidized lunch, etc. intrinsic rewarding jobs, a nice work environment, and flexible work hours to accommodate personal needs.

“Employee benefits constitute an indirect form of compensation intended to improve the quality of the work lives and the personal lives of employees”.¹⁴

There is an association between compensation and commitment. Compensation affects employees’ attitudes, behaviors on the job. Compensation decisions help the success of

¹² An organization-level Analysis of Voluntary and Involuntary Turnover’. *Academy of Management Journal*, 41, 511-525.

¹³ Huselid, A. Mark (1995). The Impact of HRM Practices on Turnover, Productivity and Corporate Financial Performance, *Academy of Management Journal*, 38.

¹⁴ Snell, S.A and Bohlander, G. (2007), Expanding Human Resources Management Horizons, *International Human. Resources Management*, 15 (2), 600-639.

these activities when employees are satisfied with the amount of pay, benefits, and raises they receive. Because it has a favorable influence on job satisfaction and organizational commitment, and because it reduces employees' thoughts of leaving for another job, pay satisfaction is important. By enhancing compensation conditions and practices, commitment will likely improve. With improved commitment, retention will increase, turnover will decrease and employee morale will get stronger.

The challenge for HR managers in many organizations is to change executives' tendency to view compensation as an expense, and, instead, to regard it as an important human resource investment. An investment in people requires specific measures and focused processes to align people with business strategy. Successful organizations will recognize, distinguish and compensate true performance, and celebrate both individual and group accomplishments.

Certainly, accurate comparisons obtained by market compensation surveys are critical to ensure that wages are aligned with industry standards. In addition, some research has shown that companies paying above the industry standard can expect better financial outcomes (WW Human Capital Index). Such a strategy can add to an organization's reputation as an employer of choice. Based on expectancy theory¹⁵ (Vroom 1964), it can be expected that, if the company provides rewards desired by the employee in question, this employee is more likely to perform in a way that will bring him/her the reward. Being perceived as a leader in employee relations and rewards is critical in attracting, motivating and retaining employees.

Just as important, however, is a company's need to communicate its total reward package to its employees. It must emphasize not only the salary, bonuses, equity and benefits, but also other highly valued aspects of the employment deal. Some examples are flexible work arrangements and a culture that encourages teamwork.

¹⁵ Victor H. Vroom (1964) defines motivation as a process governing choices among alternative forms of voluntary activities, a process controlled by the individual. The individual makes choices based on estimates of how well the expected results of a given behavior are going to match up with or eventually lead to the desired results. Motivation is a product of the individual's expectancy that a certain effort will lead to the intended performance, the instrumentality of this performance to achieving a certain result, and the desirability of this result for the individual, known as *valence*.

Non-monetary benefits also have a role in compensation satisfaction. Intrinsic rewards have become essential differentiators in motivating people, especially as financial incentives become more homogeneous. Supporting life work balance initiatives, flexible work arrangements and employee involvement in job design are examples of intrinsic rewards. These will be critical rewards that people want from their work.

Compensation remains a critical issue for organization because of the financial investment in paying people. Likewise, fostering organizational commitment in employees is crucial to attracting, motivating and retaining the human capital necessary for corporate success. Although an association exists between compensation satisfaction and commitment, it is one of the drivers of commitment. Nevertheless, without a comprehensive and responsive compensation strategy, companies will fail to maximize the potential of their employees.

In studies related to compensation, Park, Ofori-Dankwa and Bishop, (1994) and Trevor, Barry, and Boudreau (1997) found that salary growth had a pronounced effect on turnover and commitment. Particularly, salary growth effects on turnover were greatest for high performers, that is, high salary growth significantly reduced turnover for high performing employee.

Beilock and Capelle (1990) found that, the higher monetary compensation, the lower turnover. The monetary incentives such as higher pay and better fringe benefits could positively influence the employee's decision to stay on the current job, because they could increase job satisfaction.

Abassi and Hollman (2000) in their study have identified lack of recognition and lack of competitive compensations systems are some reasons for employee turnover in the organization. Frye (2004) examined the relationship between equity based compensation and firm performance and found positive relationship between the two. He argued that for human capital intensive firms compensation plays a crucial role in 'attracting and retaining highly skilled employees'.

Retention based on the principle of "compensation-based commitment" (Meyer and Allen, 2003) is of course sensitive to changes in compensation within the company.

Employers that base their retention on compensation-based commitment will always be vulnerable to the possibility that their competitors will be able to offer better wages and thus lure away their employees¹⁶. Smith (2001) argued that money gets employees in the door, but it does not keep them there. Money can be classified as a “satisfier,” and it is a necessary but insufficient factor in employee retention, while Harris and Brannick (1999) agreed that money is not the primary motivator for employees. In fact, many companies have done a very good job of retaining their employees without any pay-based retention incentives (Pfeffer and Vega, 1999). Successful retention under such circumstances seems to depend on a wide number of factors. Clearly, the existence of other HRM practices is also key to retention, and there is a great deal of interdependence between compensation and other practices.

(c) Employee Participation

Employee participation involves subordinates making decision. It is an HRM practice that increases employee involvement in organization decisions, such as delegation or joint decision-making among supervisors and employees (Conley, 1991), can result in a large number of benefits, including —increased product or service quality, greater innovation, stronger employee motivation, and lower cost but higher speed production, and lower employee absenteeism and turnover (Vandenberg, Richardson, and Eastman, 1999).

Several studies have identified employee involvement in decision making as an important high performance HRM practice (Arthur, 1994; MacDuffie, 1995; Pfeffer, 1995). It enhances employee commitment to the organization.

Participation tends to improve motivation because employee feels more accepted and involved in the situation. Their self-esteem, job satisfaction, and cooperation with the management will also improve. The result is often reduced conflict and stress, more commitment to goals, and better acceptance of a change. Employee may also reduce turnover and absences when they begin to feel that they are allowed to participate in decision making for company issues.

¹⁶ Meyer and Allen, 2003. *Commitment in the Workplace-Theory, Research & Application*. Sage Publications, London

(d) Training and Development

Training and development refers to the imparting of specific skill, abilities and knowledge to an employee. A formal definition of training and development is any attempt to improve current or future employee performance by increasing an employee's ability to perform through learning, usually by changing the employee's attitude or increasing his or her skills and knowledge. It is the heart of continuous effort designed to improve organizational performance. The need for training and development is determined by the employee's performance deficiency. Methods of training are on-the-job training and job rotation, apprenticeship training, classroom training and virtual training.

Training and development has been recognized as one of the important components of human resource practices in the field of human resource management. Training and development is a human resource practice that can provide competitive advantage to organizations, if properly organized and implemented (Schuler and MacMillan, 1984). This component has been included in the high performance HRM practices of the organizations (Huselid, 1995; MacDuffie, 1995). Generally, it is believed that organizations with better training and development programmes may experience lower employee turnover. Employee training is an indication of management commitment to building a life-long relationship with the employees, thus increases retention and reduces turnover decision (Samuel and Chipunza, 2009). In fact, training is one of the important ways to assist individual employee to gain new knowledge and skills required to maintain the standard performance in the competitive changing environment. As a matter of fact, success depends on to what extent the employees receive training for their professional development. Invariably, organization may adopt various human resource practices to enhance employees' skills, but certainly training is unique to improve the quality of current employees which may produce high commitment and lower intention to quit the organization. In reality, training and development increases and enriches one's capability, and it guides and supports employees to achieve long-term career development and competency at work (Pare and Trembley, 2007; Liu, 2004).

Training and development can serve as additional levers for enhancing engagement and commitment. Through training, it helps new and current employees acquire the knowledge and skills they need to perform their jobs. And employees who enhance their skills through training are more likely to engage fully in their work, because they derive satisfaction from mastering new tasks. Training also enhances employees' value to company as well as their own employability in the job market. In addition, most companies offer higher wages for skilled workers, to compensate them for their greater value and to discourage turnover.

New Zealand Labour Department reports a fact that old workers are more reliable and dedicated than younger workers if they are equipped with newer skills. Old workers learn differently but retain new skills better. Regarding reducing the staff turnover rate, companies need provide more part-time positions and flexible working schedules (Clarke and Herrmann, 2007).

High involvement practice emphasizes employee training and development at all levels. Based on that idea, combining with the empirical surveys, some studies found that increasing investment on training can affect the staff attitudes. Staff attitudes towards the organization are positively related to organization performance (Clarke and Herrmann, 2007). Russell, Terborg and Powers (1985) examined the relationship between training, organizational support, and performance of organizations in a sample of sixty-two retail stores. Their study utilized both archival data information obtained from a company developed attitude survey. The findings provided evidence that both training and organizational support was positively and significantly related to store performance.

Employee development can be expected to be an important determinant of company performance. A variety of HRM practices are related to the development of the human resources of the firm. First, company investments in both technical and non-technical training are likely to have a positive impact on the extent to which the firm actually succeeds in developing the skills/knowledge of its employees. Training was suggested to be a high performance HRM practice in research by, among others, Delaney and Huselid (1995). Generally, a positive relationship has been established between

employee training and organizational performance (Huselid, 1995; Koch and McGrath, 1996).

Training, like other HRM practices, can be utilized to elicit desired responses which may include improved organizational commitment (Bartlett, 2001). A number of studies demonstrate that training provision leads to improvements in organizational commitment (Bartlett, 2001; Ahmad and Bakar, 2003; Al Emadi and Marquardt, 2007).

However, the impact of training on organizational commitment has not been so widely researched. A limited number of studies have been conducted in America (Bartlett, 2001), Malaysia (Ahmad and Bakar, 2003) and the Middle-East (Al-Emadi and Marquardt, 2007). These studies all find a strong positive relationship between training perceptions and affective organizational commitment and a weaker relationship with continuance commitment. Bartlett's (2001) study in the US health care context, finds a strong relationship between four training variables and affective commitment. However, his research suggests a limited impact of them on continuance commitment. Ahmad and Bakars (2003)'s study, conducted in Malaysia, found a significant relationship between five training variables and affective commitment. For continuance commitment their research only demonstrated a significant correlation with two, the training environment and perceived training benefits. Al-Emadi and Marquardt (2007) examined the perceptions of senior staff in the Qatari petrochemical industry on the perceived benefits of training participation and its impact on organizational commitment. They found a positive relationship between perceived training benefits and both affective and continuance commitment.

(e) Performance Appraisal

Performance appraisal is the process of evaluating how well employees perform their jobs when compared to a set of standards, and then communicating that information to an employee how he or she is performing the job and establishing a plan of improvement.

Bavon (1995) defined performance measurement as the collection of information about effectiveness and productivity of individuals, groups and larger organizational units. Performance measurement is related to the key areas of the organization, such as

expansion, innovation and productivity, which is critical to the development of prosperity of an organization (Carneiro, 2001).

One of the most common uses of performance appraisal is for making administrative decisions relating to promotions, firings, layoffs, and merit pay increases. Performance appraisal information can also provide needed input for determining both individual and organizational training and development needs. Another important use of performance appraisals is to encourage performance improvement. In this regard, performance appraisals are used as a means of communicating to employees how they are doing and suggesting needed changes in behavior, attitude, skills, or knowledge. Finally, two other important uses of information generated through performance appraisals are (1) input to the validation of selection procedures and (2) input to human resource planning.

With performance standards to compare what an employee is supposed to be doing with what the person actually has done, a supervisor can determine the employee's performance level. The performance appraisal process should then tie to the job description and performance standards. Developing clear, realistic performance standards can also reduce communication problems in performance appraisal feedback among managers, supervisors, and employees.

Dyer, L. and Reeves, T. (1995) found that ineffective performance appraisal and planning systems contributed to employees' perceptions of unfairness and they were more likely to consider leaving the organization¹⁷.

2.4.2 Organizational Performances

This thesis studied organizational commitment and turnover intention of organizational performance.

(a) Organizational Commitment

Organizational commitment is the degree to which employees believe in and accept organizational goals and desire to remain with the organization¹⁸. It is also the relative strength of an employee's attachment or involvement with the organization where he or

¹⁷ Dyer, L. and Reeves, T. (1995). Human resource strategies and firm performance: What do we know and where do we need to go? *International Journal of Human Resource Management*, 6, 656-670.

¹⁸ Changing Nature of Human Resource Management , 2009, p. 91, chapter 3

she is employed. Organizational commitment is important because committed employees are less likely to leave for another job and are more likely to perform at higher levels.

Multiple definitions of organizational commitment are found in the literature. Bateman and Strasser stated that organizational commitment has been operationally defined as “multidimensional in nature, involving an employee’s loyalty to the organization, willingness to exert effort on behalf of the organization, degree of goal and value congruency with the organization, and desire to maintain membership”.

Mowday, Steers, and Porter (1979) identified commitment-related attitudes and commitment-related behaviors. Porter et al. (1974) Schultz discussed three major components of organizational commitment as being “a strong belief in and acceptance of the organization’s goals, a willingness to exert considerable effort on behalf of the organization, and a definite desire to maintain organizational membership”. Sheldon (1971) defined commitments as being a positive evaluation of the organization and the organizations goals. Employees who are committed to an organization tend to strongly believe and accept the organization’s goals and values exert considerable effort on behalf of the organization and maintain membership in the organization. Mowday et al. (1982)

UK literature refers to 'high commitment work practices' as that bundle of innovative practices which stimulate high organizational performance. Wood and Albanese (1995) made an assumption that commitment can be managed and that specific HR practices can be employed to this.

Meyer and Allen (1997) proposed a three component model of organizational commitment – affective, continuance, and normative commitment¹⁹. This model has been subjected to the greatest empirical scrutiny and has arguably received the greatest support. (Meyer and Allen, 1997; Meyer, Stanley, Herscovitz and Topolnytsky, 2002).

Affective commitment describes an alignment that employees feel between their organization and their personal value systems and desires. Porter et al (1974) further

¹⁹ Myer J and Allen N, A (1997), Three Component Conceptualization of Organizational Commitment .

characterized affective commitment by three factors (1) “belief in and acceptance of the organization’s goals and values, (2) a willingness to focus effort on helping the organization achieve its goal’s, and (3) a desire to maintain organizational membership”. Meyer and Allen (1997) continued to say that employees retain membership out of choice and this is their commitment to the organization.

The continuance commitment refers to a state whereby employees are bound to their organization to the extent they “have to be” due to the benefits associated with staying versus the personal costs associated with leaving. It is the willingness to remain in an organization because of the investment that the employee has with “nontransferable” investments. Nontransferable investments include things such as retirement, relationships with other employees, or things that are special to the organization. Continuance commitment also includes factors such as years of employment or benefits that the employee may receive that are unique to the organization. Meyer and Allen (1997) further explained that employees who share continuance commitment with their employer often make it very difficult for an employee to leave the organization.

Finally, the normative commitment refers to commitment based on a moral belief or obligation that “it is the right and moral thing” to remain with the organization. It is the commitment that a person believes that they have to the organization or their feeling of obligation to their workplace (Bolon, 1993). In 1982, Weiner discusses normative commitment as being a “generalized value of loyalty and duty”.

Meyer and Allen (1997) defined a committed employee as being one “stays with an organization, attends work regularly, puts in a full day and more, protects corporate assets, and believes in the organizational goals”. This employee positively contributes to the organization because of its commitment to the organization.

HRM practices and policies have been suggested as influencing factors to increase organizational commitment among employees (Ogilvie, 1986; Meyer and Smith, 2000; Arthur, 1994). Based on social exchange theory, Ogilvie (1986) proposed that employee’s perceptions of HRM practices reflect a sense of reciprocity and the level of organization’s commitment to the employees when an employee feels that the organization cares about their welfare and recognizes their contributions. Consequently, it leads to the belief that the organization will provide a variety of symbolic and tangible

rewards in exchange of their efforts and commitment. Hence HRM practices are proposed as a practical approach to develop employee commitment and found significant positive relationship between HRM practices and organizational commitment.

Bartlett (2001) explored effects of training on organizational commitment and found that perceived access to training produced the highest correlations with organizational commitment. The results showed that employees perceived the availability of training as support from their employer, which made them more committed to their organization.

Arthur (1994) reported that organizations with “commitment” human resource systems, emphasizing the development of employee commitment, had higher productivity measured with lower scrap rates and lower employee turnover than firms with “control” systems, emphasizing efficiency and the reduction of costs, when he collected data from 30 steel mills.

Chang (2005) argued that employee organizational commitment was increased because the commitment HRM practices send messages to employees about the organization’s commitment to them, which in turn makes the employees more committed to their organizations.

(b) Turnover Intention

“Turnover intention” is defined as an employee's intention to voluntarily change jobs or companies. Turnover intention is one's propensity to leave (Lyons, 1971).

The turnover intention is the psychology or thought process before generating the turnover behavior. Identification of factors that influence turnover intentions needs to be considered to be effective in reducing actual turnover (Tett and Meyer, 1993; Samad 2006). Knowing why workers are unhappy can help the organization focus their efforts on fixing the root of the problem.

Employee turnover is often separated into categories of voluntary turnover, which is considered controllable, and involuntary (e.g. due to retirement or death), which is considered uncontrollable. Voluntary turnover and involuntary turnover of employees seemed to be influenced by different sets of factors. According to Shaw, Delery, Jenkins

and Gupta (1998), voluntary turnover of employees is affected by factors such as dissatisfaction with current job and availability of alternative jobs, while involuntary turnover is influenced by staffing practices such as recruitment and selection processes and employee monitoring. It is important to assess and understand avoidable turnover, because voluntary turnover is a key unwanted consequence, and cost of change. An employee working within a high turnover culture is likely to believe that turnover is appropriate and perhaps even expected. The main reasons for voluntary turnover are organizational factors (salary, promotion, work challenge, the relationship with the director, better work opportunity, and so on) or individual factors

Turnover intent is the cognitive process of thinking, planning, and desiring to leave a job (Mobley, Griffeth, Hand, and Meglino, 1979). It is easier to measure turnover intent than voluntary turnover because administrative records may be unavailable, incomplete, or inaccurate (Mitchell, et al., 2000). Additionally, it was not possible to match anonymous employee survey results with administrative records. Furthermore, it is generally agreed in the turnover literature that turnover intent is the final cognitive step in the decision making process of voluntary turnover, and turnover intent has consistently been linked to voluntary turnover (Cotton and Tuttle, 1986; Hom and Griffeth, 1995; Jurik and Winn, 1987; Steel and Ovalle, 1984). In their analysis of occupational turnover, Dalessio, Silverman, and Schuck (1986) stated: more attention should be given to the direct and indirect influences of variables on intention to quit as opposed to the actual act of turnover. From the employer's standpoint, intention to quit may be amore important variable then the actual act of turnover. If the precursors to intention to quit are better understood, the employer could possibly institute changes to affect this intention. However, once an employee has quit, there is little the employer can do except assume the expense of hiring and training another employee²⁰.

Recently, Watson Wyatt Worldwide conducted a worldwide investigation, finding that 58 percent of employees abdicate due to a dissatisfying salary; 48 percent of employees abdicate due to dissatisfaction with the management system and lack of the opportunities for promotion; 44 percent of the employees abdicate for lack of enough

²⁰ Eric G. Lambert, (2006) A Test Of A Model of Turnover Intent Among Correctional Staff.

skill training; 37 percent of employees abdicate for welfare; 24 percent of employees abdicate due to the working environment; and 23 percent of employees abdicate for conflict with directors or colleagues. Therefore, in order to keep employees with talent, it is necessary to offer all-around rewards. Besides giving raises in salary, rewards should also include non-financial rewards such as a positive organizational culture, training and development, and opportunities for promotion (Lin, 2006).

In an empirical study, Woods and Macaulay (1989) investigated employees working at six chain hotels and six restaurants where the turnover factor is recognized. Their study indicated there are two kinds of external factors and internal factors. The external factors are the rate of unemployment and new opportunities; the internal factors are salary, welfare, supervision quality and working conditions, quality of colleagues, overall work satisfaction, and so on. David (1989) asserted that four main factors influenced employee turnover: the selection process had problems, the employment programme was not properly structured, employees were dissatisfied with the opportunities available or salary, and the management method also had problems. Gaertner (1999) posited that both work satisfaction and organizational commitment influenced employees' decisions to abdicate or not.

Employee turnover represents a critical problem to an organization in terms of loss of talent, additional recruitment and training costs (Loi, et al., 2006). The cost of turnover adds hundreds of thousands of dollars to a company's expenses, including hiring and training costs and productivity loss. Turnover often means that employees are unhappy with the work or compensation, but it can also indicate unsafe or unhealthy conditions, or that too few employees give satisfactory performance (due to unrealistic expectations or poor candidate screening). The lack of career opportunities and challenges, dissatisfaction with the job-scope or conflict with the management has been cited as predictors of high turnover. Aside from the fore-mentioned career opportunities, salary, corporate culture, management's recognition, and a comfortable workplace seem to impact employees' decision to stay with their employer.

Maertz and Champion (1998) argued that an effective way to decrease actual turnover rate is to identify factors that influence turnover intentions. Organizational commitment has been considered as one of the most important predictors of turnover and intention to

leave. It was found that employees who were more committed to their organizations had lower intention to leave than those with lower organizational commitment (Griffeth and Hom, 1995; Igharia and Greenhaus, 1992).

According to prior work, intention is more likely to lead to actual turnover. Even though turnover intention and actual turnover were measured separately, but turnover intention has generally been recognized as the final cognitive step in the decision making process of voluntary turnover and most importantly is that cognitive variable has an immediate causal effect on actual turnover (Mobley, Horner, and Hollingsworth, 1978). Past studies have indicated that turnover intentions are the strongest predictors of turnover (Tett and Meyer, 1993). The intention to leave occurs immediately before one actually either leaves the current position or stays (Mobley, 1977).

Even Lambert (2001) stated that turnover intent is the best predictor of voluntary turnover. Based upon his preceding literature and non-criminal justice turnover literature, he proposed a model of correctional staff voluntary turnover. In his study, he argued that turnover intent immediately preceded the actual event of voluntary turnover. Therefore turnover intention is a good predictor of actual turnover.

This study focuses on turnover intention instead of the actual turnover. Turnover intention is defined as the cognitive process of thinking, planning, and desiring to leave a job (Mobley, Griffeth, Hand, and Meglino, 1979). Previous researchers have confirmed that turnover intention is an appropriate dependent variable because it is linked with actual turnover (Shore and Martin, 1989). Bluedorn (1982), and Price and Mueller (1981) even recommended the use of turnover intention over actual turnover because actual turnover is more difficult to predict than intentions as there are many external factors that affect turnover behavior. As noted by Mitchell, MacKenzie, Styve, and Gover (2000), it is easier to measure turnover intention than voluntary turnover because administrative records may be unavailable, incomplete, or inaccurate.

The theory on turnover shows that turnover intention is the best predictor of whether an employee will leave the organization (Hom and Griffeth, 1991; Griffeth, Hom and Gaertner, 2000). This paper is based at the individual level and on data from workers still employed in their workplaces, and thus, the construct turnover intention is preferred instead of the construct turnover. Turnover intentions can be defined as the probability

that the employee might quit within an organization due to several reasons. There are many reasons why employees may leave a firm. However, this study tested on the variables such HRM practices and organizational performance.

Huselid (1995) found that HR practices such as employee recruitment and selection procedures, compensation and performance management systems, employee involvement, and employee training have a significant impact on employee turnover²¹.

Extensive empirical research has been carried out on the linking of HR practices and employee turnover, especially at the organizational level (Shaw et al., 1998; Delery et al., 2000). Boselie et al. (2005) were able to identify 27 empirical articles on HR and turnover in the time period 1994-2003. It may be assumed that when many studies at organizational level are arguing that this relationship is significant, this may also account at the individual level. However, little explanation for *how* HR practices influence *individual* turnover intentions has been offered (Guest and Conway 1999; Allen et al., 2003). Among different studies which investigated this individual relationship had different outcomes, Huselid (1995) found that skills (ability bundle) had a significant negative effect on employee turnover but motivation did not have a significant effect on employee turnover. However Eddleston (2008) and Saks (2006) did found a significant negative effect of salary, on turnover intention. Furthermore low job autonomy and supervisor support have also a significant negative effect on turnover intention (De Lange, De Witte and Notelaers, 2008).

2.5 Mediating Effect of Organizational Commitment on the Relationship between HRM Practices and Turnover Intention

To test the mediating effect of organizational commitment, a summated scale of HRM practices was used. All HRM practices were combined into one single variable, HRM. The general test for mediation is to examine the relation between the predictor and the criterion variables, the relation between the predictor and the mediator variables, and the relation between the mediator and the criterion variables. All of these correlations should be significant. The relation between predictor and criterion should be reduced after controlling the relation between the mediator and criterion variables (Baron and

²¹ Huselid, M.A, (1995). The Impact of Human Resource Management Practices on Turnover, Productivity and Corporate Financial Performance.

Kenny, 1996). The mediating effect of organizational commitment on relationship between HRM practice and turnover intention used to examine with four stages as suggested by Baron and Kenny (1986)²². Samson Sam Gnanakkan (2010) reported that there was mediating effect of organizational commitment on HRM practices and turnover intention relationship among ICT professionals in India.

2.6 Control Variables

Five control variables are identified to minimize interference from employees' demographic variables. A review of the organizational performance concerned with turnover suggests five important variables to control in the analysis. They are age, gender, education, job tenure and skill levels because they may affect the level of organizational commitment and turnover intention. Thus, it was assumed that all companies in the sample experienced an equally dynamic business environment characterized by a similar amount of unpredictability in technology, customer desires, competition, and government policies.

Iverson and Deery (1997) and Ghiselli et al. (2001) reported that age had a negative impact on turnover intentions. This means that younger hotel workers were more likely to express intentions to leave their organizations compared to their older counterparts. Reviews of the turnover literature across occupations indicate that both age and tenure are associated with voluntary job leaving (MOR Barak Et Al., 2001). Those who are younger and those who have been in the job for a shorter period of time is more likely to leave the job than older or longer term employees (Cotton and Tuttle, 1986; Mobley et al., 1979).

Gender has been shown to influence turnover intentions and actual turnover (Royalty, 1998). Royalty (1998) postulated that women are less likely to change jobs. Royalty (1998) suggested that women generally have higher levels of job satisfaction, which in turn, reduces job or organizational-change inclinations. Yin and Yang (2002)

²² Baron, R.M., and Kenny, D.A. (1986). The Moderator-mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.

postulated that for older cohorts, job quitting behavior is more pronounced for men, while leaving a job for another reason is more common for women. However, in other studies, female employees have been reported to be more likely to leave their jobs than male employees (Cotton and Tuttle, 1986; Iverson, 1999), while other studies postulated that no significant differences existed between males and females (Griffeth et al., 2000).

Organizational tenure refers to the length of time an employee has been with the organization (Kim, 1999). Past literatures have in fact consistently supported a negative relationship between tenure and turnover intentions (Tepeci and Barlett, 2002). According to Porter and Steers (1973), tenure–turnover relationship can be explained in terms of employee’s personal investment. The longer the tenure, the greater the personal investment, thus lowering the likelihood of voluntary turnover.

On the effects of educational qualification, Igharia and Greenhaus (1992) found that in retail sector, employees with a higher level of education are more likely to express higher turnover intentions than employees with a lower level of education. Similarly, within the nursing occupation, Yin and Yang (2002) reported that highly educated nurses are more prone to exhibit turnover intentions. Yin and Yang (2002) postulated that highly educated nurses may have more work opportunities than those with lower level of education. On the other hand, Khatri et al.’s (2001) study on food and beverage service employees in the hotel industry only found a weak positive relationship between education and turnover intentions. Other studies, for example, Lambert et al. (2001) found that education has only an indirect effect on turnover intentions.

Respondent ICT professionals are divided into three groups to indicate their skill levels (job title); developer, senior software engineer and project manager. First group consisted of developers with ‘below two years’ organizational tenure. Second group included senior software engineers with ‘three to five years’ organizational tenure. Third group consisted of project managers with ‘six years and above’ organizational tenure.

2.7 HRM and ICT Industry

Managing people in knowledge-based industry is critical, as human resource is the soul of the organization. Since there is a high demand for the knowledge workers, often talented professionals enjoy high bargaining power due to the knowledge and skills in hand. The attitude is different for those who are taking up responsibilities at a lesser age and experience. These factors have resulted in the clear shift to individualized career management from organization career commitment. Managing talent pool of people is essential for the growth of knowledge-based sectors like IT.

The role of the ICT sector for the national economies is constantly increasing. It is also likely, that this sector is becoming a major employer in the society as a whole. Thus, perhaps most importantly need to select HRM practices that are used in managing the growing population of information professionals.

Information and Communication Technology (ICT) sector is heavily investing in high involvement HR practices to retain and motivate the information technology professionals who are the human capital assets. The continued development of the ICT industry (and ultimately the success of the economy as a whole) depends on the availability of sufficient numbers of qualified people with the required skills and competences.

A major challenge for the ICT industry (i.e., to keep pace with today's rapid changes and sustain competitive advantage) is the development of both quantity and quality of ICT professionals. IT personnel have a strong tendency to leave their current employer to work for another organization. Turnover of highly skilled employees can be very expensive and disruptive for firms (Reich held, 1996). Losing highly skilled staff members means that companies incur substantial costs associated with recruiting and re-skilling, and hidden costs associated with difficulties completing projects and disruptions in team-based work environments (Niederman and Summer, 2003).

Viljanen and Lahteenmaki (2002) argued that the ICT professionals are expected to upgrade themselves continuously to prevent obsolescence, which may occur under circumstances where high expectations for organizational productivity exist. There is

some expectation this workforce will continuously learn and acquire knowledge in the particular fields and apply what they have learned to perform their jobs more innovatively and effectively (Martisons and Cheung 2001). Nevertheless, these professionals need to be continuously equipped with new knowledge related to the changing technology in order to fulfill organizational demand. To support these challenges organizations may need to focus on the role of HRM practices more intensively to develop and nurture competencies and learning capabilities of ICT professionals (Cappelli 2001).

Dechawatanapaisal found that intervention intended to enable learning work behavior of ICT professionals highlights initially three configurations of HRM practices. These enablers are related to staffing, training and development as well as performance appraisal and pay. Of particular interest is the value of pay for performance system and recognition, yet recognition, which is relatively inexpensive to achieve and easy to implement can powerfully drive people's morale and support their learning activities. Another crucial enabler suggested by this study is training and development. Individuals view training and development opportunity as a fundamental mechanism to broaden their existing skills and knowledge to be able to absorb and apply the new learning in the future. The third observed enabler was staffing. This feature of HRM practices involves job design, developing a multi skilled workforce and comprehensive staffing process to help organizations prepare the right human resources whose competencies and attitudes will be needed to fulfill the organizational requirements to support business objectives.

The information technology landscape changes rapidly, and it is difficult for IT professionals to remain current in the constantly changing field of information technology. Firms are continually looking for new ways to attract and retain the top talent available in the field, while IT professionals often find that the best way to maintain their skill set at the forefront of the field is to change companies every year or two. It is possible for an IT professional to be actively engaged in training on a regular basis and still find their skill set outdated because the state of information technology has advanced more rapidly than their progress in training.

The IT professional's perceived needs for technology skills are often in conflict with the organization's needs. For example, an IT professional may perceive the need for training in database applications, while the organization perceives needs in distributed systems management. The conflict between the two often results in turnover – the IT professional will seek employment with an organization that is a fit with his/ her own perceived needs for training.

The problem is complex: firms are reluctant to provide for too much training for their IT talent for fear that, once trained in new technology and skills, the newly-updated IT workers are then lost to competitors who are willing to pay a higher price for their skills. It is difficult for a firm to offer competitive salaries to their own IT talent because of the morale problem it causes among professionals in other areas who cannot realize the salary growth of their co-workers in IT. The IT professionals can hardly be blamed for accepting large salary increases to leave their current positions at firms that cannot match offers with the competition. The result is a vicious cycle of turnover-training-updating- turnover.

Recruitment has become a major function from an important sub-system in HR, particularly in the IT industry. HR managers play a vital role in creating assets for the organization in the form of quality manpower. Another challenge for HR managers is to put systems in place to make the people a perfect fit for the job. Skill redundancy is fast in the software industry. To overcome this problem, organizations give utmost priority to training and skill enhancement programmes on a continuous basis. Many IT companies are providing technical training to the employees on various platforms every quarter. Most find this regular training quite useful, apart from the feeling of security it provides.

The ICT sector and the information profession have several features that suggest a tailored HRM for information professionals. Information professionals are rapidly increasing not only in numbers, but also in respect in modern companies, which places new demands on compensation and career development policies. Companies are still facing a clearly exceptional labour market situation where there is continuous shortage of competent information professionals.

The attractive labour market and biased compensation structure risks the commitment of professionals and leading to high turnover rates. As a result of this, not only company attractiveness and working climate need to be developed but also exceptional recruitment methods need to be introduced.

Due to the pace of technical advancement, the developmental needs of IPs are of a scale of their own. With the aging workforce this challenges the HRD and career planning of the company. Because of scarce human resources, hard workload and developmental need, work exhaustion prevails, which in turn calls for application of new and flexible working practices. Information professionals usually are a unique and separate subgroup within the company and therefore their own organizational culture can have a deep impact on the success of human resource management.

Mavusomad (2010) looked for drivers of the ICT workers' decisions to terminate their employment with their employers in South Africa. He found that external labour markets (ELMs) and internal labour markets (ILM) turnover factor across information and communication technology sectors.

ILM factors were less complicated than ELMs, with general dissatisfaction with internal company policies about pay, promotions and the scopes of their jobs causing them to terminate their jobs. Compensation was the most influential factor, with professionals always looking for more money and promotions. If there was perceived lack of commitment by the employee from the organization, they were highly likely to leave.

Some ICT professionals chose to leave their permanent jobs to work on short-to medium term projects which were flexible. The voluntary turnover of the ICT professionals was mainly caused by organizational rewards, affirmative action, and a host of other workplace factors. The short-term nature of the technicians' jobs also instilled a lack of commitment to the employer. If the professionals perceived that employers' commitment to the employees was not strong, that they did not want to invest in them through training and development, the ICT workers' loyalty waned, and consequently, they felt fewer obligations to their employers.

It showed that training and development themselves were major factors in turnover. Some of them overlooked for promotions and training, and they did not trust employers' intentions about their career progress anymore. They therefore chose to look for employment alternatives elsewhere.

Organizational rewards were exceptionally important to ICT employees. Any deficiency, perceived or actual, of the expected compensation made them contemplate leaving their employers. The opportunity to participate in a pension plan was a valued reward among senior technicians and IT managers in South Africa.

For instance, within the SABC, the standard benefits for all technicians included pensions, medical aid, housing allowances, educational benefits, and paid travel when on job assignments. Benefits increase with seniority to include company cell phones and car allowances. However, almost all the junior technicians don't get these benefits. According to personnel communication 2008, they are looking for other jobs in IT management position because they don't get these benefits.

Although some companies would provide petrol cards to their fieldwork technicians who own cars, professionals who had intentions to leave or who had left their employers because they wanted more benefits. The South African telecom companies offered a unique and innovative rewards system to their ICT managers.

Vodacom SA, a huge wireless company in South Africa, had created a stock ownership programme whose goal was to provide a certain percentage of employee ownership. The company offered discounted stock options and allowed employees to buy shares after three-year tenure with the company. The ICT regulators in private companies who did not receive this benefit intended to leave their employers.

In most ICT companies in South Africa, the company's contribution to benefits, such as retirement annuities, car, and housing allowances, medical aid and employee stock ownership plans, were based on seniority; junior technicians did not qualify for some of them. Thus, they became impatient and hostile if the employers took too long to qualify ICT professionals for some of these benefits. In the end, benefits provided affected the technicians' behavior toward the employing organization.

Promotion has different meanings to different ICT professionals in South Africa. There might exist various unfulfilled and unaccompanied desires that might lead to decisions to leave if these were not satisfied. It became apparent in this study that many professionals were frustrated by a lack of planned career advancement, especially if technicians put in a lot of effort to excel in a job. If such efforts were not appreciated, the technicians often decided to leave and added to the labour market job turnover. At the middle management level, ICT professionals were ambitious to attain higher levels of IT management and to have positions that offered more responsibilities as well as some adventure and chance for exploration. Professionals at this level looked for jobs inside and outside their organizations. If the company took a long time to be promoted, professionals left for organizations that recognized their ambitions; it was important that employers became aware of employee's promotional ambitions and decide how they could meet them if they wanted to retain them. The internal factor of promotion satisfied a significant need for enhancing self-esteem and was a valuable incentive and brake on labour market job turnover. If organizations failed to realize and acknowledge efforts that technicians made to develop themselves, employers were likely to lose such employees.

South Africa ICT technicians appeared to be anxious about promotions if the following two factors occurred: uncertainty and duration. Uncertainty about promotion was significant because if employees did not have information about when they would move up, they were likely to look elsewhere for other senior positions. Duration refers to the time it took before one could get promoted. If employers took a long time before one could get promoted, then it could result in dissatisfaction and lead to intentions to leave.

Money was by far the most important internal labour market job turnover factor with regards to organizational rewards systems, Technicians felt that the employers expanded their job responsibilities without matching the new performance with a raised income. There was a general feeling among junior technicians that the supervisors passed their job responsibilities to younger professionals without any salary increment.

There was consensus that the job responsibilities did not match the compensation these professionals earn. Researcher found that money would be one of the most significant drivers of turnover for South African ICT professionals.

2.8 Approaches in Studying HRM Practices

Generally there are three ways to examine the effectiveness of HRM practices on firm performance: universalistic, contingency or configurational approach (Delery and Doty, 1996).²³

2.8.1 Universalistic Perspective

Universalistic perspective is the simplest form of theoretical model in the HRM literature. Universalistic perspective seeks for “best practices”. Researches in the universalistic perspective are micro analytical in nature and posit that some HRM practices are always better than others are and that all organizations should adopt these practices.

Huselid (1995)’s work reflected the “universalistic” approach to HRM. This perspective assumes that there are certain “best” HRM practices that contribute to increased financial performance regardless of the strategic goals of organizations. Further, a universalistic approach to HRM research assumes that HRM practices contribute to worker motivation (and thereby increased productivity) as well as increased efficiency (Ichniowski, Kochan, Levine, Olson and Strauss, 1996). While other authors concurred with these assumptions (Osterman, 1994; Pfeffer, 1994), different studies have utilized various assortments of these HRM practices, and there has been little work that provides a definitive description as to which HRM practices should be included in a “best practice” system. Arthur (1994) found that HR practices that focused on enhancing employee commitment (e.g., decentralized decision making, comprehensive training, salaried compensation, employee participation) were related to higher performance. In a similar study, Huselid (1995) found that investments in HR activities such as incentive

²³ Delery, J.E. and Doty, H.D. (1996) 'Modes of Theorizing in Strategic Human Resource Management: Tests of Universalistic, Contingency, and Configurational Performance Predictions'. *Academy of Management Journal*. 39(4): 802-35.

compensation, selective staffing techniques, and employee participation, developed employee skills and motivation and resulted in reduced turnover, increased productivity, and increased firm performance (Youndt et al., 1996) founded on these empirical studies, the universalistic perspective proposes that some HR practices are always better than others and that all organizations should adopt this *best practice* approach to SHRM (Brockbank, 1999; Fitz-enz, 1997; Geringer et al., 2002; Hitt et al., 1994; Huselid, 1995; Pfeffer, 1994a, 1994b, 1995; Pfeffer and Veiga, 1999; Terpstra, 1994; Truss, 2001).

2.8.2 Contingency Perspective

Contingency theorists posit that an organization needs to adapt specific HRM practices for different firm strategies. A number of researchers, however, have argued that contingency perspective is the more appropriate approach to HRM (Butler, Ferris and Napier, 1991; Dyer, 1985; Jackson and Schuler, 1995; Lengnick-Hall and Lengnick-Hall, 1988; Schuler, 1989; Schuler and Jackson, 1987). The contingency theorists argue that, in order to be effective, an organization's HRM practices must be consistent with other aspects of the organization.

There are many forms of contingency theory. In a general sense, contingency theories are a class of behavioral theory that contends that there is no one best way of organizing/ leading and that an organizational/ leadership style that is effective in some situations may not be successful in others (Fiedler, 1964). In other words: The optimal organization/ leadership style is contingent upon various internal and external constraints.

Four important ideas of contingency theory are:

1. There is no universal or one best way to manage
2. The design of an organization and its subsystems must 'fit' with the environment
3. Effective organizations not only have a proper 'fit' with the environment but also between its subsystems
4. The needs of an organization are better satisfied when it is properly designed and the management style is appropriate both to the tasks undertaken and the nature of the work group.

The contingency approach differs from the universalistic perspective in that these studies have attempted to link variations of HRM practices to specific organizational strategies (Hoque, 2000; Khatri, 2000; Youndt, Snell, Dean and Lepak, 1996). Schuler (Schuler and Jackson, 1987; Schuler, 1989) argued that HRM practices which are not synergistic and consistent with organizational strategy and, which conflict with other HRM practices are confounding in effect and create ambiguity which can inhibit both individual and organizational performance.

2.8.3 Configurational Perspective

Configuration approach examines the structural relationship among HRM practices and its conjunctive effect upon firm performance. Configuration theorists assert that a firm's HRM practices should be internally aligned or bundled to create better organizational results (MacDuffie, 1995; Ferris et al., 1999; Youndt et al., 1996). A closely related body of work calls for a configurational approach to HRM, and argues that it is the pattern of HRM practices that contribute to the attainment of organizational goals (Wright and McMahan, 1992). According to the configurational perspective, in order to be effective, an organization must develop its HRM system that achieves both horizontal and vertical fit. Horizontal fit refers to the internal consistency of the organization's HRM practices, and vertical fit refers to the congruence of the HRM system with other organizational characteristics, such as firm's strategy (Delery and Doty, 1996).

Literature on HR practices is configured on the basis of two main approaches: resource-based and control-based approach (Bamberger and Mesoulan 2000). The resource-based view is geared toward the internal development of employee competencies as opposed to the market-based acquisition of such competencies (Wernerfelt, 1984). *Market-based* HR system emphasizes staffing and deployment of skills for immediate contribution. It relies heavily on external labour market for securing the right people to do the jobs (Koch and McGrath 1996). Organizations are willing to pay market wage to attract the needed human capital with necessary skills and are less likely to invest heavily in training and development. These skills are easily acquired in the market.

The internal development HR system (make) is characterized by extensive training, promotion from within, developmental performance appraisal, skill-based pay and job security.

The control-based approach focuses on monitoring employee behaviors, employee's compliance with process-based standards (Snell, 1992). It further divides into two alternatives process-oriented control or outcome-oriented control. Outcome-oriented control is characterized by extensive long-term rewards, employee participation and involvement. In contrast, process-oriented control is characterized as fixed and explicit job design, formalization evaluation through carefully prescribed job requirement and efficiency based reward (Dyer and Reeves, 1995).

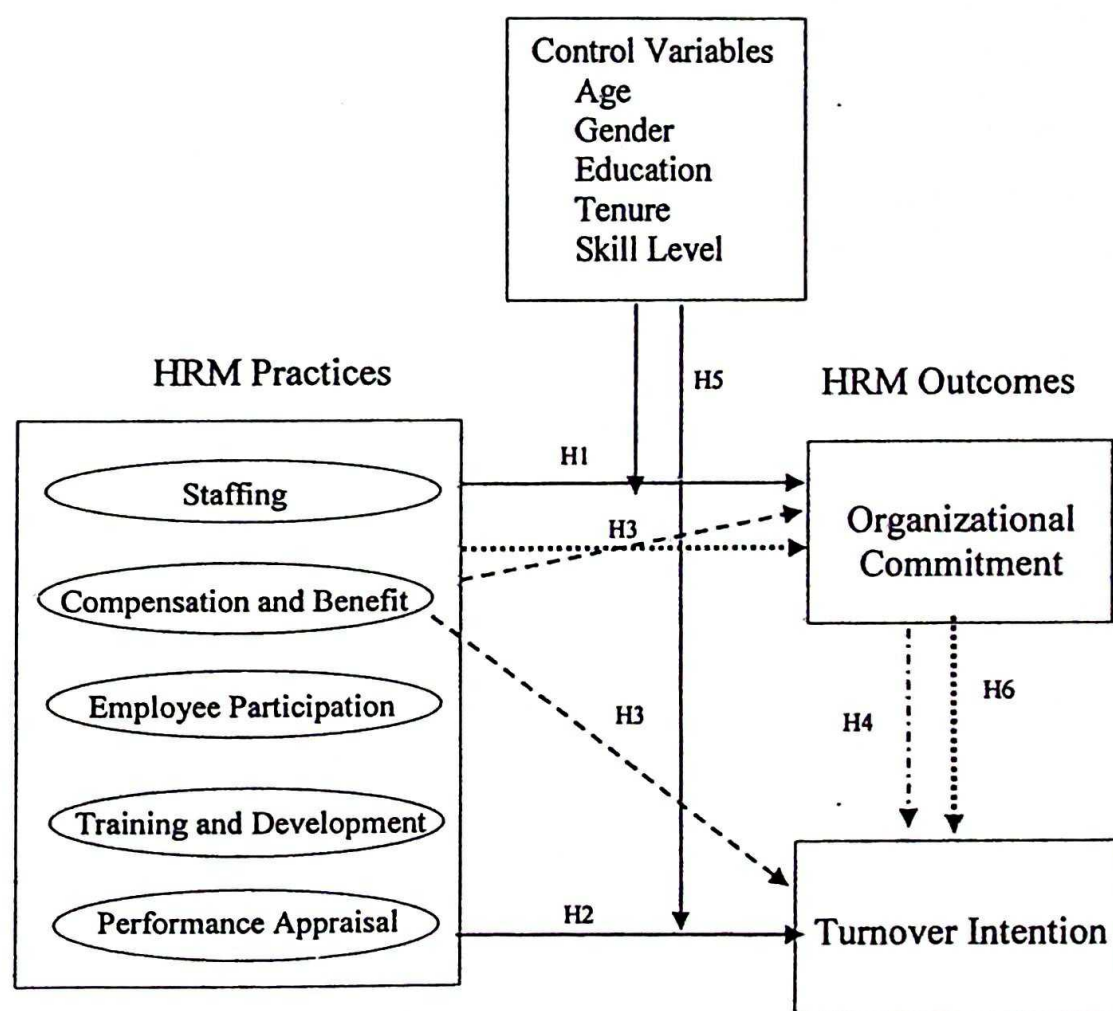
Although the HRM sub discipline is oriented to concrete social phenomena and derives its knowledge from different disciplines, like sociology, psychology, and economics, it is not without theory as Wright and McMahan (1992) has shown. These theories focus on different relationships. For example, the so-called '*Resource-based Theory of the Firm*' focuses on the relationship between input of personnel and output as organizational performances (productivity, profit, market share etc.). The basic idea is that the firm can acquire a competitive advantage by an effective and efficient use of the organization's resources. According this theory the organization's resources should be valuable, rare, inimitable and non-substitutable. It is up to the company to decide which resources will contribute to the best performance. It assumes a weighing of one resource against the other. Capital, also scarce, is less substitutable than labour, particularly when the required qualifications of personnel are high. That applies more to the companies with a high level of technology than other companies.

A revised version of this theory, in line with the Harvard approach, is the so-called '*Human Resource Based Theory of the Firm*' supported by Paauwe (1994) and Wright et al. (1994). In this theory it is stated that people, human capital, par excellence fit the assumptions of value, rareness, inimitability, and non-substitution. This study applied Universalistic perspective and resource based approach from Configurational Perspective.

2.9 Conceptual Framework for Analysis

The goal of this study is to contribute to the knowledge of how HRM practices relate to organizational commitment and turnover intention, and to explore which practice is the best out of studied HRM practices. The study also aims to compare the influence of bundle of HRM practices and individual HRM practices on organizational commitment and turnover intention. From the literature study, the relation between HRM practices and turnover intention is mediated through organizational commitment. It can be visualized in the following model:

Figure 2.4 Conceptual Framework of the Study



First hypothesis concerns with analyzing the relationship between HRM practices and organizational commitment. Second hypothesis relates to analyzing the relationship between HRM practices and turnover intention. Third hypothesis deals with analyzing the best HRM practice to strengthen organizational commitment and reduce turnover

intention. Fourth hypothesis concerns with analyzing the influence of organizational commitment on turnover intention. Fifth hypothesis deals with analyzing the effect of organizational tenure on turnover intention. Sixth hypothesis deals with analyzing the mediating effect of organizational commitment on the relationship between HRM practices and turnover intention.

2.10 Summary

From the literature discussed in this chapter it can be concluded that HRM practices play an important role to increase organizational commitment and to reduce turnover intention. HRM practices are hypothesized to be related to organizational commitment and turnover intention. Organizational tenure effects the turnover intention. Organizational commitment can be predicted in turnover intention. Organizational commitment is seen as mediating variable on relation between HRM practices and turnover intention. How all these items are measured will be discussed in chapter four.

CHAPTER 3

CURRENT STATUS OF ICT INDUSTRY IN MYANMAR

This chapter consists of the general description of ICT development in Myanmar and it is presented in five sections. The first section presents the vision and objectives of Myanmar ICT industry. The second section is about the SWOT analysis of ICT industry in Myanmar. The third section deals with understanding of current situation of ICT market in Myanmar. The fourth section presents the ICT legal framework for the ICT. The final section reports the description of HRM practices of ICT industry.

3.1 Vision and Objectives of Myanmar ICT Industry

In today's modern life, technology is often believed to be pervasive in the society. ICT is a major driver of implementing political, economic and social objectives, principally through its capacity to enhance efficiency and innovation. Nowadays, understanding and using information and communications technology to make a much better competitiveness is imposed by international markets.

Since Myanmar is still a developing country, the businesses must keep updated with changes and progresses that are occurring. Outsourcing initiatives will increase the efficiency and effectiveness of the business activities with ICT performance. Information technology is rapidly being infused into the financial, retail, manufacturing, service, entertainment, transportation, and other industries; and numerous IT workers are going to work for companies in those sectors. Currently the ICT industry is one of the dynamic industries in Myanmar.

By 2010, Myanmar identified the followings for ICT Industry to implement for the ICT development.

- (1) Develop ICT Industry to become one of main economic sectors.
- (2) Develop human resources so that sufficient ICT professionals are available for both ICT industry and ICT application
- (3) Development of software industry and penetrating into the international market should be a high priority task.

- (4) Promoting and facilitating the liberalization in investment, production and distribution of ICT products and services.
- (5) Creating an environment in which software developers can share idea and experiences.

ICT skills are important for individuals, firms and countries alike. For individuals, ICT skills can be a major determinant for compensation, employability, and personal development. For firms, the adoption of ICT allows increases in productivity, competitiveness, and adaptability. For countries, ICT is a major determinant of economic growth. Developing ICT human resources is a key to Myanmar's future growth.

The vision for Myanmar ICT industry is to establish a solid ICT industrial base in line with increasing competitiveness of the ICT industry. To realize the vision, the following objectives are proposed.

- (1) To increase contribution to GDP from ICT industry
- (2) To expand job opportunities through ICT industry development
- (3) To provide benefits of using ICT in other industry sectors
- (4) To become competitive as a software provider in the ASEAN region.

3.2 SWOT Analysis on ICT Industry

Table 3-1 shows SWOT analysis of Myanmar's ICT industry derived from investigation on the current status.

While it is understood that the potential of the ICT industry growth in Myanmar is very high, it is necessary to investigate further strength, weakness, opportunity, threat of the industry so as to derive the most suitable action plans to be implemented in the next five years.

Table 3-1 SWOT Analysis of Myanmar's ICT Industry

Strengths	Weaknesses
<ul style="list-style-type: none"> • Manpower with respect to labour cost • Government initiative for the construction of ICT • Enactment of the Myanmar Special Economic Zone Law 	<ul style="list-style-type: none"> • Low level technology • Lack of capital • No sophisticated ICT firms and standardization body • Poor ICT infrastructure • Extremely low penetration rate of fixed/mobile/internet subscribers
Opportunities	Threats
<ul style="list-style-type: none"> • Globalization of the ICT Industry: growth of outsourcing market • Gradually increasing domestic demand from the public and private sector • Regional Cooperation: ASEAN, India, China etc. • Rapid growth of mobile industry 	<ul style="list-style-type: none"> • Competition from the outside world • Fluctuation of the world's ICT market • Unprotected H/W retail price level caused by severe domestic competition • Closed H/W import procedure • High corporate tax

Source: Myanmar ICT Master Plan 2011-2015

The following factors are identified as the strengths of Myanmar's ICT HRD;

- (1) Colleges and universities as well as many private computer training centers that supply ICT workers at an increasing pace
- (2) National leader's keen interests in the development of ICT
- (3) An acute public awareness of the importance of ICT

As of 2004, there were 24 computer colleges and 2 universities of computer studies in Myanmar. The establishment of computer colleges has led to substantial increases in computer graduates. There were about 39,500 computer graduates produced between by public universities¹ from 2000-2001 to 2005-2006. In 2007, all computer colleges were upgraded to university level, so there were 26 universities of computer studies in Myanmar.

Besides graduates from computer universities, the Ministry of Education (MOE) and National Centre for Human Resource Development (NHRD) department have their own programmes for fostering high skilled ICT graduates. The MOE contributed Bachelors

¹ Kyaw Min Han, ICT Sector Development in Myanmar (2009), P18

of computer science programme at Dagon University and Yadanapon University, and post-graduate diplomas of computer science and masters of computer science programme at Yangon University. The NHRD department has implemented various graduates, diploma, and certificate programmes related to ICT and the number of its graduates have been steadily increasing.

The private sector plays an important role in ICT HRD of Myanmar. Currently there are around 90 computer training centres, including 70 in Yangon. Major computer training centres includes MCC, ACE Data System, and the KMD Computer Centre among others. In these institutions, about 50,000 students are annually trained in a basic computer skills course.

National Computer Center (NCC) alone accounts for annual supply of 500-600 International Diplomas in Computer Studies, 400 International Advanced Diplomas, and 120 Bachelors in Computer and Information.

According to the survey conducted by Korea Information Strategy Development Institute (KISDI) and E-National Taskforce of Myanmar, 62 percent of citizens in Yangon see the ICT industry as a promising field. This acute public awareness of the importance of ICT is identified as a major strength of ICT HRD in Myanmar along with its national leader's keen interests in ICT HRD.

The following factors are identified as the weaknesses of Myanmar's ICT HRD;

- (1) A weak ICT industrial base
- (2) Low ICT infrastructure
- (3) Severe mismatches between demand and supply of ICT workers
- (4) Few qualified ICT professionals who can work in the international market

The ICT industrial base is very weak in Myanmar. Consequently, the employment share of ICT occupations is expected to be very low. According to the survey conducted by KISDI and E-National Taskforce of Myanmar, computer programmers account for the lion's share among ICT occupations. Computer support specialists, computer operators, and computer software engineers subsequently take large shares in order.

There exists a shortage of ICT workers in Myanmar. The overall shortage rate for ICT workers stands at 17.7 percent. The most needed occupations include computer programmers, computer and information system managers, and computer software engineers.

Table 3-2 Composition of Current Employment and a Shortage of ICT Occupations

Types of Computer Personnel	No. of workers percent	No. of current shortage of workers percent
Computer programmers	17.2	15.9
Computer support specialists	13.5	6.4
Computer operators	11.1	9.8
Computer software engineers	10.1	16.9
Computer hardware engineers	8.0	3.9
Computer repairers	7.6	7.1
Computer and information systems managers	7.6	2.9
Network or computer systems administrators	6.6	3.0
Data entry and information processing workers	4.3	6.8
Systems analysts	3.8	5.8
Desktop publishers	3.6	3.9
Web master	2.7	2.0
Database administrators	1.9	6.3
Computer scientists	1.0	1.7
Computer-control programmers and operators	1.0	7.6
Total	100.0	100.0

Source: MCF Survey (2005)

The main reason for the shortage of ICT workers is the mismatch between ICT supply and demand, not lack of supply. Firms' inability to pay high salaries is the second-most important cause of the shortage. This severe mismatch between demand and supply of ICT workers is identified as another weakness of Myanmar's ICT HRD.

The mismatch is the consequence of lack of the qualitative improvement of ICT education. Due to this lack of quality, few qualified ICT professionals who can work in the international market are fostered.

Table 3-3 Main Reason of the Shortage of ICT Workers

Reasons	Percent
Little supply	19
Mismatch	41
Brain drain	17
Firm's inability to pay high wages	23

Source: MCF Survey (2005)

Myanmar's weak ICT infrastructure is another factor for weakness of ICT HRD. Myanmar's ICT infrastructure is very weak even compared to the average of low income countries. As of 2003, teledensity, the mobile phone penetration rate, and the internet penetration rate stood at 0.8, 0.12, and 0.05 respectively, which are substantially lower than those of lower-income countries' average, 4.59, 1.75, and 1.33.

The following factors are examined as the opportunities for Myanmar's ICT HRD;

- (1) A relative wage of the ICT sector is high compared to other industrial sectors, which attracts top talents to the ICT sector
- (2) The low wage level of ICT professional compared to that of other countries
- (3) Increasing tendency of ICT outsourcing
- (4) Rapidly growing software and ICT service sectors

ICT occupations pay higher wage than other occupations in Myanmar. ICT studies are popular among students, and it is relatively easy to attract domestic top talents to the ICT area. A high-salary group includes occupations such as computer and information systems managers, computer software engineers, web masters, system analysts, and network administrators.

Table 3-4 Monthly Wages of Computer Programmer

Country	US \$
US	3,111
Singapore	1,783
Korea	1,387
India	146
Myanmar	51

Note: Myanmar's data are from survey conducted in 2005.

In terms of labour cost, Myanmar has advantage in the software sector. As Table 3-4 shows, monthly wage of computer programmers in Myanmar is 1/3 of that of India.

With proper ICT HRD, Myanmar can be one of ICT services and software outsourcing centers in the region.

The following factors are examined as the threats for Myanmar's ICT HRD;

- (1) The brain drain to Singapore, Thailand, Japan, and Australia, etc.
- (2) Other Asian countries exert full efforts to prevent ICT HRD brain drain which leads to the shortage of ICT workers. The brain drain, however, also may have positive effects. First of all, it can increase incentives for natives to seek higher skills and may increase domestic economic return to skills.

A major threat to Myanmar's ICT HRD is the fact that other Asian countries exert full efforts to improve ICT HRD. To compete internationally, the quality of ICT is important. Myanmar needs to benchmark other country's best policy practices in ICT HRD to have ICT workers with high quality.

3.3 ICT Market

The size of current ICT market in Myanmar is not significant in terms of its contribution to the GDP of the country, but this also implies that there are many opportunities for the market to grow. Even though its size is small, there are many private companies that are putting extensive efforts to expand business in hardware sales and software development sector. The current ICT industry can thus be seen to be at the stage of introduction and growth in the industry life cycle.

ICT industry in Myanmar can be categorized as hardware, software, information services, and telecommunication industry. Firstly, hardware industry in Myanmar is mainly based on trading and assembling and not much of manufacturing. It is estimated that there are about 900,000 PCs installed and about 10,000 PCs are distributed to public per month.² Secondly, for software industry, it is mainly composed of software development for local industry. There are a few software companies accepting outsourcing projects and jointly developing software products with foreign partners. MICT Park and Yatanarpon city are well-known ICT industry zones with good environment for software companies and they are good providers of decent quality software products. Thirdly, the telecommunication market has shown extremely high

² Zaw Min Oo, Presentation on "ICT Industry Status", Nov 2010

growth rate in terms of market penetration in the past 2-3 years.³ The mobile market has been growing at an annual rate in excess of 25 percent over the last three years, although this mobile subscriber growth started from a very low base. It is reported that there are 450,000 mobile subscribers early in 2010, which only constitutes a penetration of 0.9 percent. For fixed market, the penetration rate based on household is only 8 percent and for internet, the penetration rate based on population is only 0.07 percent. These estimates are for 2009 and 2010 respectively. Considering this very low rate of penetration, Myanmar has a high potential for telecommunication industry growth. Fourthly, information services industry which comprises content services including music, game, video, adult content is growing fast with a great potential of growth in line with the rapid growth of mobile industry.

3.3.1 Obstacles and Demand in the ICT Sector

ICT experts (from MICA members) survey was conducted by MCIA in 2010. The respondents were mainly from MCIA members. Questionnaire survey had been conducted with 161 respondents. Main focus was to discover what obstacles are there to be overcome for the promotion of the ICT industry. Findings in 2010 were compared with those findings of 2005. Comparison between the survey results is shown as follows.

a. Obstacles and Demand for Policy in the ICT Sector

In order to derive policy directions for Myanmar's ICT industry development, it is necessary to identify the obstacles that are delaying the industry development and demand for ICT policies.

The major obstacles identified are lack of facilities, R&D investment and difficulties in acquiring trade license. Comparing with 2005 survey results, acquisition of trade license is still a difficult issue for doing business in Myanmar. However a necessary and welcome change could be seen one outstanding change that the substantial increase in the demand for R&D investment. This shows that the development of Myanmar ICT industry has been raised to the next level since 2005 and that investment in R&D and facilities are in urgent need to leap to the advanced level.

³ Peter Evans, "Myanmar Telecoms, Mobile and Internet", A Buddecomm Report (2010)

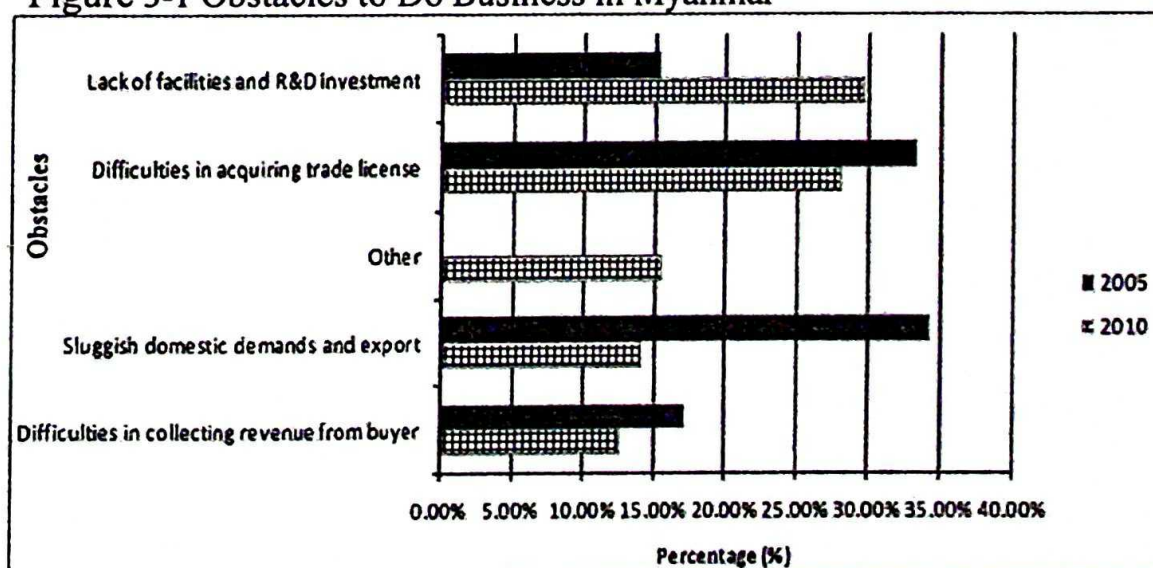
In addition to the obstacles listed in Table 3-5, there were other issues raised by the respondents. One of the major problems raised by the respondents was poor general infrastructure including the telecommunication and electricity, which are the foundation of ICT industry development. Furthermore, there are urgent needs to resolve cyber security issues to prevent network attacks that have been causing serious problems to the whole country. Again, being short of skilled labour in the industry is another significant obstacle as experienced developers tend to move to overseas market due to lower income level in Myanmar, leading to unstable supply of ICT workers in the industry. Some respondents indicated the need for copyright law, as illegal software distribution is becoming a issue for software developing companies in expanding their business; expensive telecom equipments; unstable economic policy; volatile foreign exchange rate fluctuation; cheaper price of China border products.

Table 3-5 Obstacle to Do Business in Myanmar

Obstacles	No. of Responses	
	2005	2010
Lack of facilities and R&D investment	24	47
Difficulties in acquiring trade license	51	45
Others	-	24
Sluggish domestic demands and export	54	21
Difficulties in collecting revenues from buyer	27	20
No specified	15	14
Total	161	161

Source: MCF Survey (2005)

Figure 3-1 Obstacles to Do Business in Myanmar



Source: Table 3-5

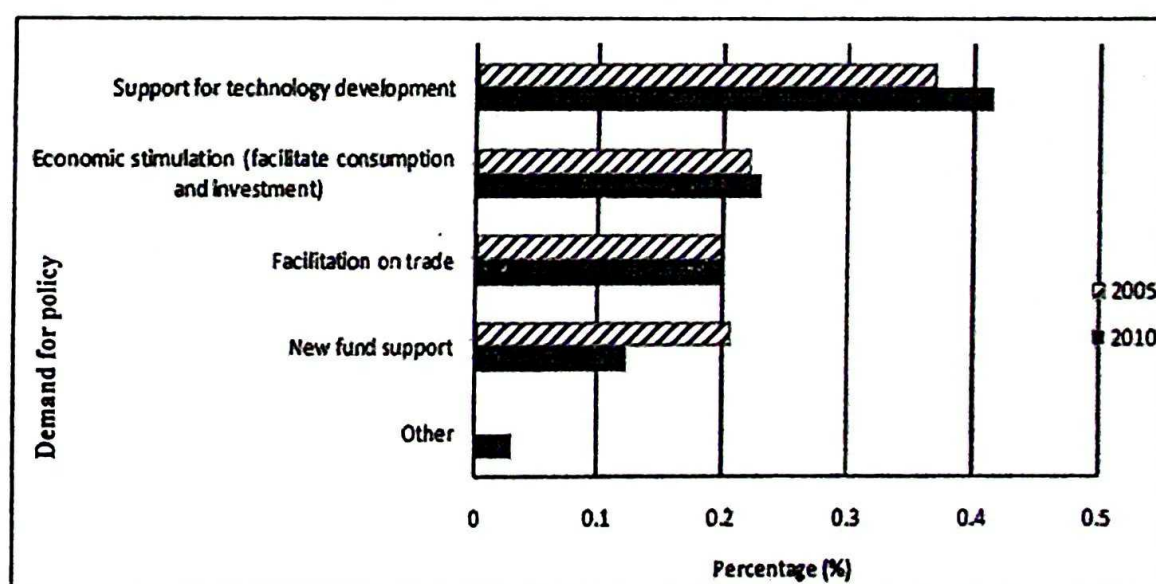
In addition to the obstacles, survey results of demand for specific ICT policy in Myanmar revealed that support for technology development policy took the first place with more than 40 percent of responses. The most urgent policy demand in order remains similar to the 2005 survey results, which shows policies on support for technology development are still a very big concern in the industry.

Table 3-6 Demand for Specific ICT Policy in Myanmar

Demand	No. of Responses	
	2005	2010
Support for technology developed	56	66
Economic stimulation (facilitate consumption and investment)	35	38
Facilitation on trade	32	32
New fund support	33	20
Other	-	5
No specified	15	
Total	161	161

Source: MCF Survey

Figure 3-2 Demand for Specific ICT Policy in Myanmar



Source: Table 3-6

b. Use of Software

Basing on the ICT expert survey and the 2005 master plan, it is forecasted that Myanmar has strength in the software sector and that there are possibilities for further growth of the ICT industry by concentrating on the software industry. Table 3-7 shows

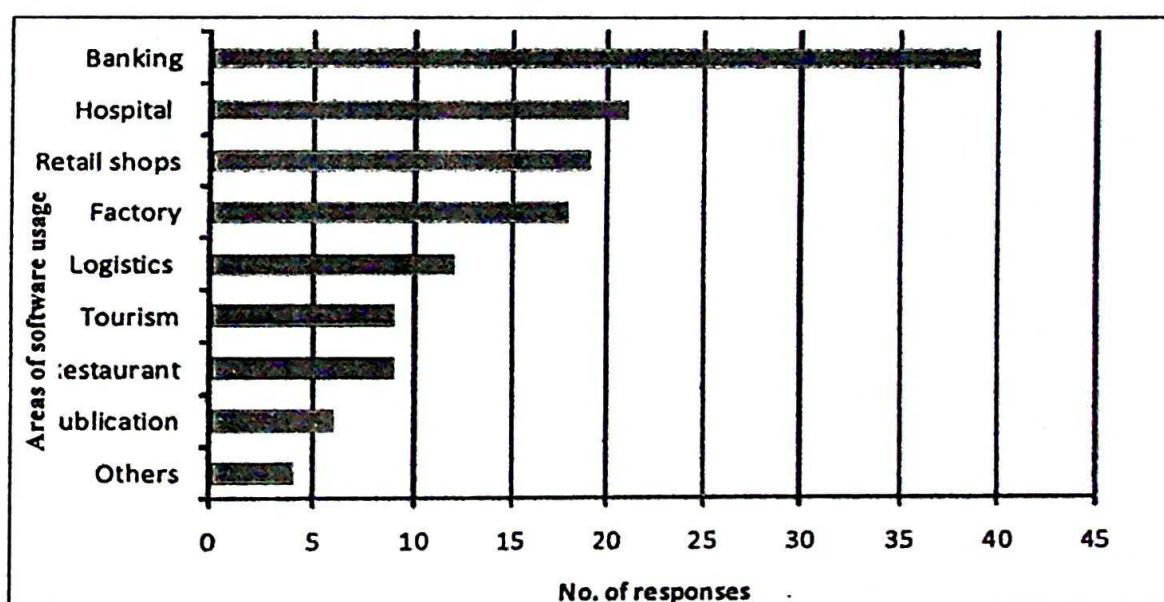
that the banking industry has the highest use of software followed by hospitals, retail shops and factories.

Table 3-7 Area of Software Usage in Myanmar

Area of Software Usage	No. of Responses
Banking	38
Hospital	22
Retail shops	18
Factory	16
Logistics	12
Tourism	8
Restaurant	8
Publication	6
Others	4

Source: MCF Survey

Figure 3-3 Areas of Software Usage in Myanmar



Source: Table 3-7

c. Obstacles and Need for Policy in Software Sector

For a better and closer look at the software market, obstacles for doing business and the most urgent needs for policy in software sector development are examined.

As shown in Table 3-8, the main obstacles for doing business in software industry are lack of software developers and lack of experience in technology development. In

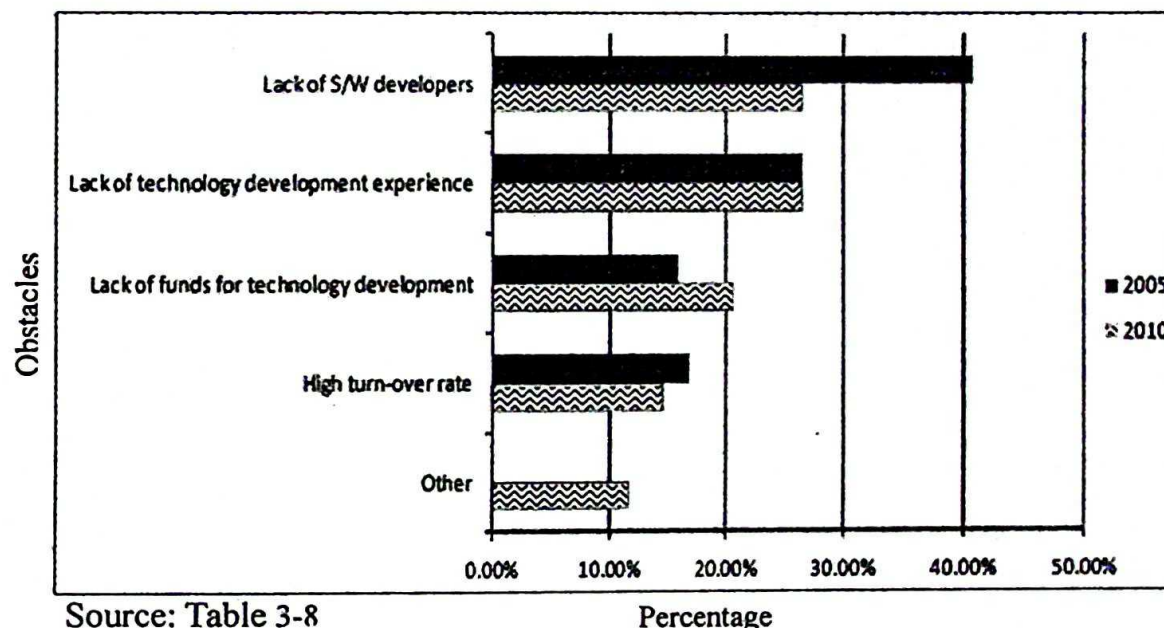
contract, comparison of the two years 2005 and 2010 reveals that there has been no significant change between the two years.

Table 3-8 Obstacles to Do Business in Software Sector

Obstacles	No. of Responses	
	2005	2010
Lack of software developers	66	46
Lack of technology development experience	44	46
Lack of funds for technology development	24	32
High turn-over rate	27	21
Others	-	16
Total	161	161

Source: MCF Survey

Figure 3-4 Obstacles to do Business in Software Sector



Source: Table 3-8

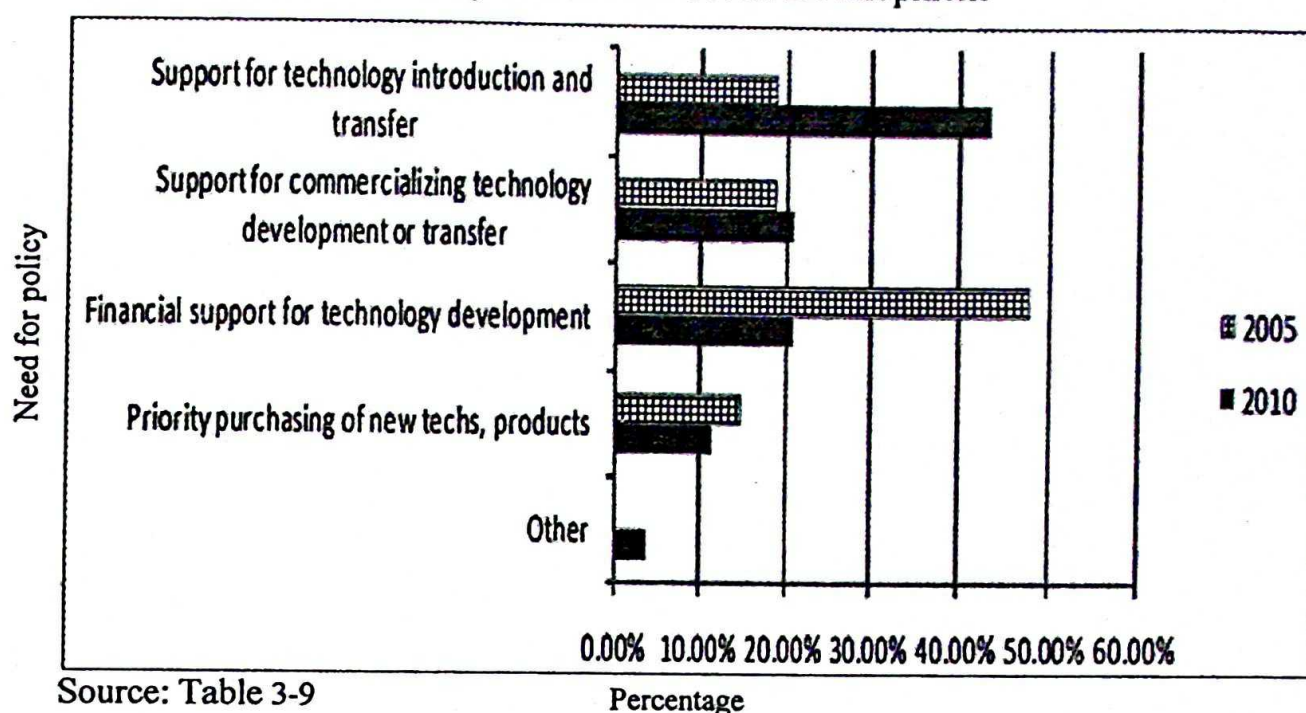
Percentage

Table 3-9 Need for Policy in Software Sector Development

Need for Policy in Software Sector Development	No. of Responses	
	2005	2010
Support for technology introduction and transfer	30	67
Support for commercializing technology developed or transferred	30	33
Financial support for technology development	77	33
Priority on purchasing of new technology products	24	10
Others	-	4
No specified	-	14
Total	161	161

Source: MCF Survey

Figure 3-5 Need for Policy in Software Sector Development



Source: Table 3-9

Percentage

Table 3-9 reveals that in 2005, the most urgent need for policy guidance was for financial support for technology development. On the other hand, 2010 showed a different need for support of technology introduction and transfer.

d. Policy for Promoting Software Industry

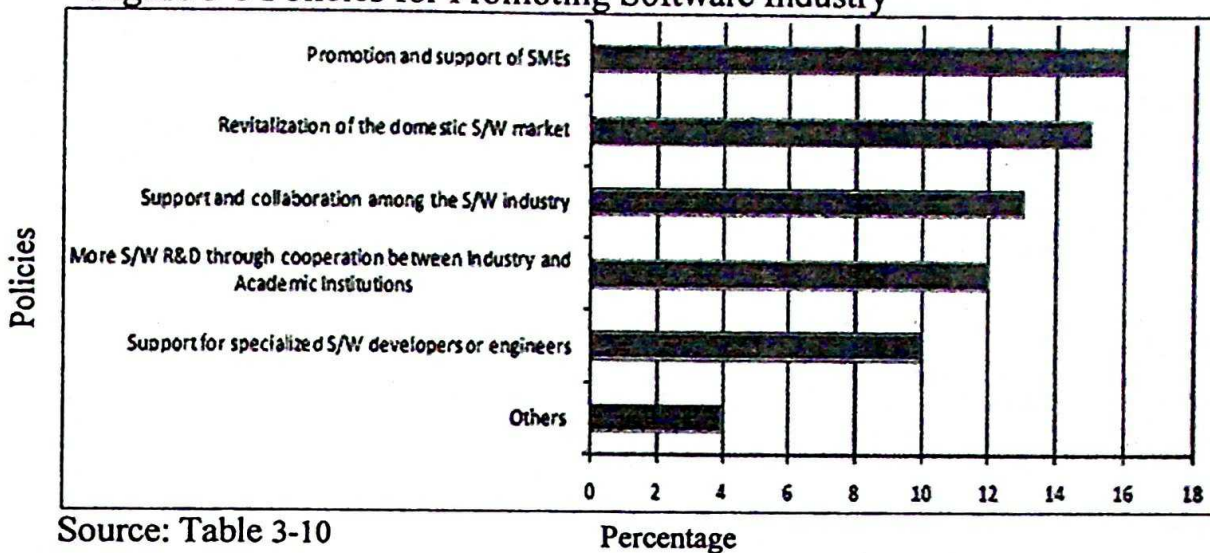
Among the given choices of policy options, responses were almost evenly distributed in terms of the need of policy options viz to promote and support SMEs; to revitalize the domestic software market; to promote support and collaboration within the software market; to promote cooperation between industry and academia; to support specialized software developers/engineers.

Table 3-10 Policy for Promoting Software Industry

Policy for Promoting Software Industry	Percent
Promotion and support of SMEs	16
Revitalization of the domestic software market	15
Support and collaboration among the software industry	13
More software R&D through cooperation between industry and academic institutions	12
Support for specialized software developers or engineers	10
Others	4

Source: MCF Survey

Figure 3-6 Policies for Promoting Software Industry



Source: Table 3-10

e. Policy for Hiring ICT Workers

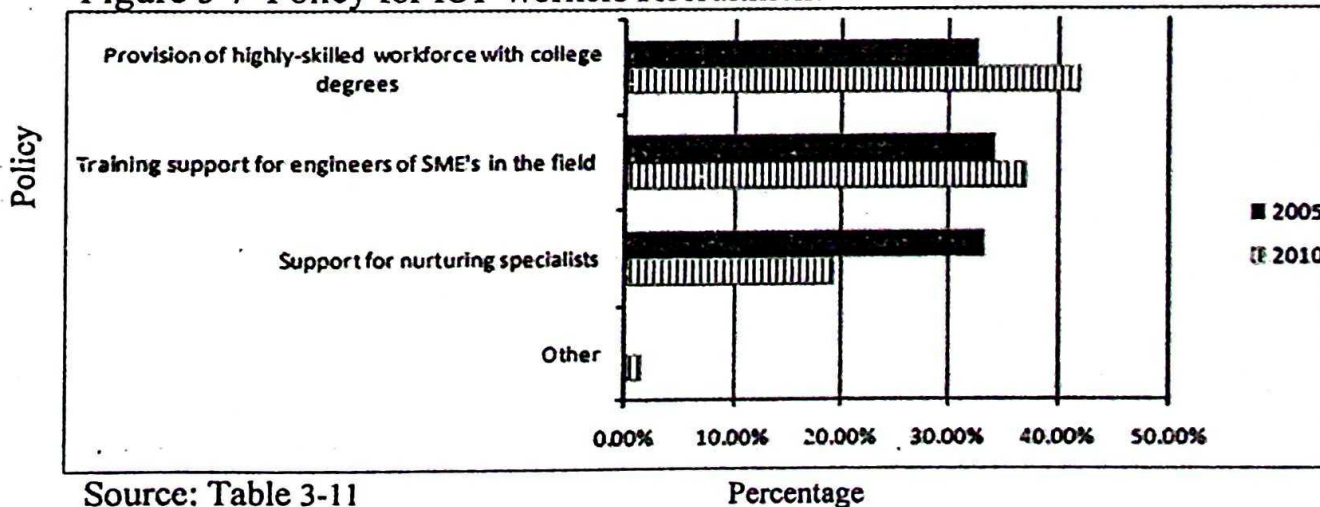
The availability of skilled human resources and labour market environment are two other important factors to be considered in assessing the future competitiveness of Myanmar’s ICT industry. The survey results showed that provision of highly-skilled workforce with University degrees and training support for engineers for SMEs have the highest need for policy guidance.

Table 3-11 Policy for ICT Workers Recruitment

Policy for ICT Workers Recruitment	No. of Responses	
	2005	2010
Provision of highly-skilled workforce with college degrees	51	65
Training support for engineers of SMEs in the field	58	62
Support for nurturing specialists	52	30
Others		4
Total	161	161

Source: MCF Survey

Figure 3-7 Policy for ICT Workers Recruitment



Source: Table 3-11

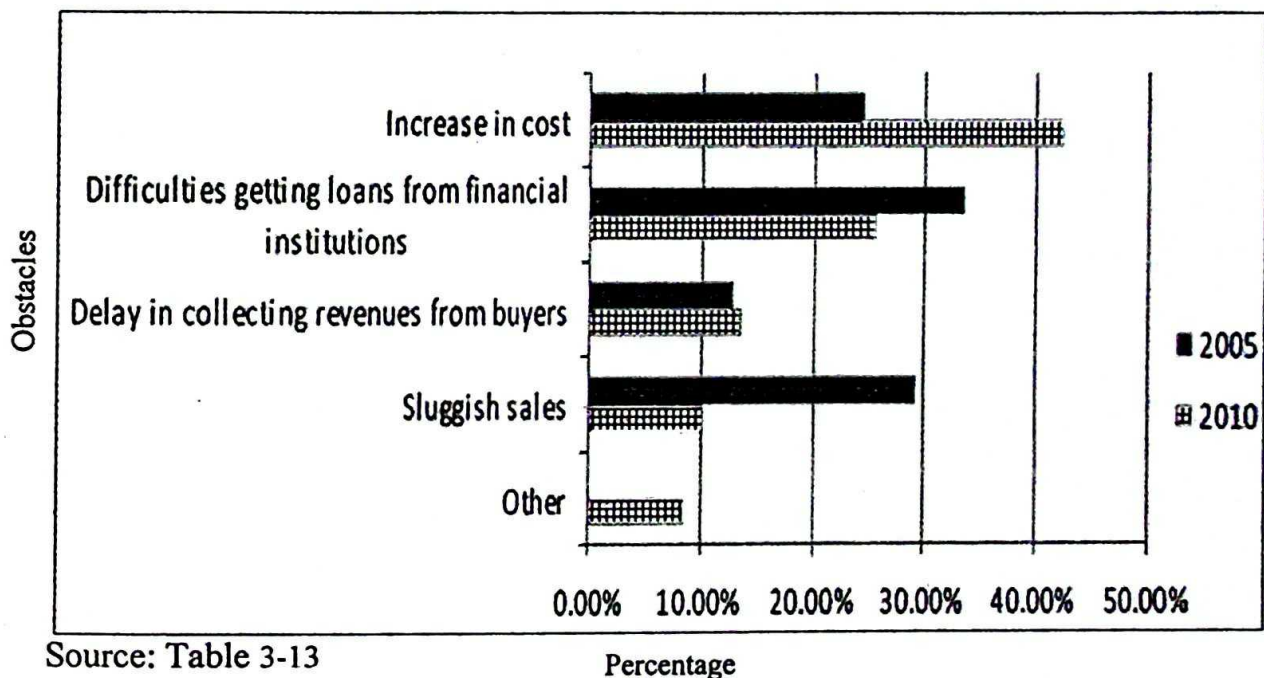
that the most difficulty the ICT firms are facing is increase in cost. Comparing to 2005 results, the cost increase acts as a greater difficulty whereas the problem of sluggish sales has become less of concern.

Table 3-13 Obstacles in Support for Product Development, Facilities, and Operation

Obstacles	No. of Responses	
	2005	2010
Increase in cost	44	66
Difficulties getting loan from financial institutions	51	44
Delay in collecting revenues from buyers	20	21
Sluggish sales	46	16
Others	-	14
Total	161	161

Source: MCF Survey

Figure 3-9 Obstacles in Support for Product Development, Facilities, and Operation



Source: Table 3-13

3.4 ICT Legal Framework

The increasing use of technology in all aspects of society makes confident, creative and productive use of ICT an essential skill in life. ICT capability encompasses not only the mastery of technical skills and techniques, but also the understanding to apply these skills in learning, everyday life and employment purposefully, safely and responsibly. ICT capability is fundamental to participation and engagement in modern society. ICT can be used to find, develop, analyze and present information, as well as to model situations and solve problems. ICT acts as a powerful force in the changes of society,

and citizens should have an understanding of the social, ethical, legal and economic implications of its use, including how to use ICT safely and responsibly.

Legal and regulatory framework plays a vital role to promote and to develop ICT sector. Thus a strong legal and regulatory framework for effective regulation is required. The legal framework should not focus only on the current status but should also cover future steps and long term policies. Hence, to keep up with the demands for the development of ICT, Myanmar authorities are drafting the necessary ICT legal framework.

As Myanmar is a signatory to e-ASEAN Framework Agreement which was adopted on 24th November, 2002, it has the obligations to abide by its provisions.

The current ICT Laws in Myanmar are as follows: _

- (1) The Myanmar Telegraph Act, 1885
- (2) The Myanmar Wireless Telegraphy Act, 1934
- (3) The Computer Science Development Law, 1996
- (4) The Electronic Transactions Law, 2004
- (5) Order relating to setting up of computer web using Wide Area Networking providing services by such web and application of information technology, 2002

The Myanmar Telegraph Act, 1885 and The Myanmar Wireless Telegraphy Act, 1934 are existing laws, but they are not in conformity with the current situation. Now the Telecommunications Law was being drafted by the Ministry of Communications, Posts and Telegraphs. As soon after as the Telecommunications Law is enacted, the two Acts may probably be repealed.

The objectives of the Computer Science Development Law, 1996 are to contribute towards the emergence of a modern developed State through computer science; to lay down and implement measures of computer science and technology; to cause extensively development in the use of computer science in the respective fields of work; and to supervise the import and export of computer software or information.

The aims of the Electronic Transactions Law, 2004 are to support the electronic transactions technology in building a modern, developed nation; to obtain more opportunities for all round development of sectors by electronic transactions

technology; to recognize the authenticity and integrity of electronic record and electronic data message and give legal protection thereof; to enable transmitting, receiving and storing local and foreign information simultaneously; to enable communicating and co-operating effectively and speedily.

In 2002, the Ministry of Communications, Posts and Telegraphs issued the order in exercising the powers vested under section 28, 29, 30 and 42 (c) of the Computer Science Development Law to control setting up of computer web using Wide Area Network, providing services by such web and application of information technology. This order is a stop-gap and has served as a mechanism until new comprehensive laws come into force. Thus, immediate effect was given to meet the circumstances of the time.

3.4.2 Enactment Procedure of ICT Legal Framework

The highest national body for ICT is the Myanmar ICT Development Council. The focal point of the council is the e-National Task Force which was formed by the Minister of Communications, Posts and Telegraphs with the memberships of high-level representatives from various ministries, departments and organizations. To step into the world of ICT, the Government of Myanmar has made concrete applications. As an initial stage, a national level e-National Task Force was formed with the aims to build modern developed nation by the application of ICT, to enable active participation in e-ASEAN tasks and to promote ICT in the comprehensive manner according to an Order of the State Peace and Development Council dated 31st October, 2000. e-National Task Force was headed by the Minister of Communications, Posts and Telegraphs comprising with the 18 members representing relevant ministries, departments, organizations and non-government organizations.

There are seven Working Committees under the task force as follows:

- (1) Legal Infrastructure Working Committee, headed by the Director General from the Office of the Attorney General
- (2) Information Infrastructure Working Committee, headed by the Chief Engineer of Myanmar Posts and Telecoms;

- (3) IT Education Working Committee, headed by the Rector of Yangon Computer Studies;
- (4) e-Application Working Committee, headed by the Chair person of Myanmar Teleport;
- (5) ICT Standardization Steering Committee, headed by the President of Myanmar Computer Federation;
- (6) Liberalization of ICT Products, the Service and Investment Working Committee, headed by the Director General of the Customs Department;
- (7) e-Measurement Committee, headed by the Director of Central Statistical Organization.

The working committees have been working to achieve the goals set by the e-ASEAN Framework Agreement, which member states signed in November 2000. e-Legal Infrastructure Working Committee is mainly responsible for drafting of ICT Laws (Cyber Laws).

ICT industry promotion

Future Myanmar ICT legal framework (cyber law package) consists of three pillars: (1) the Computer Science Development Law (1996) (2) Electronic Transactions Law (2004) and (3) Telecommunications Law.

However, the internationally accepted model for ICT Law (In Myanmar, cyber law is considered as equivalent to ICT law) basically consists of two parts: telecommunications law and informatization law. Informatization law can be divided into three parts: (1) promotion of government and society informatization (2) building and updating telecommunication networks, and (3) promotion of ICT industry.

As an optimized ICT legal infrastructure, an ICT law package includes three basic parts, namely (1) telecommunications law, (2) ICT promotion law, and (3) informatization law.

For ICT promotion law, the Computer Science Development Law (1996) has certain provisions for ICT industry promotion. The objectives of the above law focused on mainly (1) to contribute toward the emergence of a modern developed state through computer science, (2) to lay down and implement measures necessary for the

development and dissemination of computer science and technology, (3) to create opportunities for youth to study computer science, (4) to study computer science and to utilize the computer science in a manner which is most beneficial for the State, (5) to create extensive development in the use of computer science in the respective fields of work, and (6) to supervise the import and export of computer software or information.

However, the ICT industry promotion provisions in the above law are not adequate or understandable enough to clearly address the issues for industry promotion.

Once Myanmar's Cyber Law package becomes complete, ICT industry promotion can be regulated by both the Computer Science Development Law and Telecommunication Law. However, to maximize effectiveness and for better administration to the sector, ICT industry promotion should be regulated by Computer Science Development Law or Informatization Law, but not by Telecommunication Law.

3.5 ICT Human Resource Development

As Information Technology continues to spread throughout the economy, it challenges workers to adjust their skills and learn to use these new technologies.

Employment was affected qualitatively as well as quantitatively by ICT. In practice, the size of employment has been increased and the quality of employment has been improved with advances in and the extension of ICT. ICT HRD is one of the most important policy tools to compete in the global ICT industry. It became one of the most important policy agendas for securing high quality ICT manpower.

Software and ICT services are the key sector for the development of Myanmar's industry and skilled human resources in this field play a pivotal role in industrial development. ICT, combined with upgrading skills and organizational change, will accelerate productivity in new and traditional industries.

ICT skills are similarly important for individuals, firms, and countries. For individuals, ICT skills can be a major determinant for compensation, employability, and personal development. For firms, the adoption of ICT allows increases in productivity, competitiveness, and adaptability. For countries, ICT is a major determinant of

economic growth. Developing ICT human resources is a key to Myanmar's future growth.

Master plan for ICT HRD in Myanmar is designed in three-step approach. First, the strengths and the weaknesses of Myanmar's current ICT HRD were identified and examined the opportunities and threats for the future ICT HRD in Myanmar. . Second, the best policy practices in ICT HRD in Korea, India, Ireland, and Malaysia were benchmarked. Lastly, specific ICT HRD policy action plans for Myanmar were suggested.

Human resource development (HRD) is an essential component for growth and economic development. It can occur at both the nationwide level and on the firm-wide level. The enhancement of a country's HRD is dependent on the government and national policies, while at the firm or micro level HRD can happen through training and the efficient utilization of resources.

ICT affects both quantitative and qualitative dimensions of employment. Empirically, the size of employment has increased and the quality of employment has improved with the advance and extension of ICT. ICT HRD is one of the most important policy tools to compete internationally in the ICT industry. Securing high quality ICT manpower became one of the most important policy agendas.

ICT skills are important for individuals, firms, and countries alike. For individuals, ICT skills can be a major determinant for compensation, employability, and personal development. For firms, the adoption of ICT allows increases in productivity, competitiveness, and adaptability. For countries, ICT is a major determinant of economic growth. Developing ICT human resources is a key to Myanmar's future growth.

ICT occupations pay higher wages than other occupations in Myanmar. ICT fields are popular among students and it is relatively easy to attract top domestic talents to ICT fields. A high-salary group includes occupations such as computer and information systems managers, computer software engineers, web masters, system analysts, and network administrators.

Although it is an important issue, the brain drain may also have positive effects. First, it can increase the motivation of individuals to seek better skills and it could encourage local ICT companies to pay higher salaries. Second, it could lead to knowledge flows and collaboration with foreign companies and research institutions. In addition, it poses opportunities for exploring technologies.

MCF and its associations also provide ICT professional training. There are around 90 private computer schools, including 70 in Yangon. Altogether, these institutions produce about 900 ICT professionals annually. Most of the private training center offers basic computer skills courses.

Developing skilled human resources particularly for the software and ICT services sectors is considered a key to Myanmar's economic growth. Twenty-six universities for computer studies are helping to substantially increase the country's supply of ICT professionals. The Ministry of Education and the New Century Human Resource Development Department (NHRD) also have their own programmes for developing ICT graduates. The Ministry has a Bachelor of Computer Science Programme at Dagon University and Yatanarpon University, a postgraduate diploma, and a Master of Computer Science Programme at Yangon University.

The new century human resource development (NHRD) department contributes various graduate diplomas, and certificate programmes related to ICT and its graduates have been increasing steadily. Even though Myanmar is putting a lot of effort into raising their number of ICT human resources, universities with a global standard education curriculum is not easy to find. So, Myanmar needs to establish an ICT HRD center that provides global standard education to students.

SWOT analysis of Myanmar's ICT HRD. It was derived from an investigation on the current status. It has been identified that there are colleges and universities, as well as many private computer-training centers, but that they have unsystematic HRD programmes. Even though the Myanmar government has many interests in developing ICT, with the current status of Myanmar's infrastructure and industrial base of ICT, it would be hard to have a sufficient supply of ICT workers within a short period of time.

However, fortunately, the tendency for rapidly growing SW and ICT service sectors and increasing ICT outsourcing will create many jobs and will make the ICT industry larger. One of severe threats is brain drain. It's not only important to attract talents for the development of ICT, but to also not drain them from other countries

To create an ICT HRD system that can generate a knowledge society was identified as a vision. Goals of ICT HRD are follows:

- (1) To develop more systematic ICT human resources development policy that is in harmony with the industrial policy of Myanmar
- (2) To solve the mismatch between the supply and demand of professional ICT human resources in both quantity and quality
- (3) To implement a human resources development system through collaborations between the industry and academia
- (4) To strengthen the competitiveness of the ICT University

An ICT HRD Master plan in accordance with the existing plans of the Myanmar government was developed. The "Thirty-Year Long-Term IT Promotion Plan for the University of Computer Studies and Government Computer Colleges" for MOST (Ministry of Science and Technology) and the "Thirty-Year Long-Term Education Development Plan" for MOE have been extensively consulted.

The ICT HRD Master Plan focuses on providing proper incentives to facilitate ICT knowledge and skill transfer through various channels. It is important to set up proper institutional measures at the initial stage of ICT HRD policy implementation. Policy initiatives should be designed to help education and training systems align to the specific requirements of the industry. Developing standardized, modular curricular to meet the industry's demands can be a viable policy option.

Myanmar needs to set up ICT HRD policies that have both a short lead time and a longer lead time in dealing with the mismatch between the demand and supply of ICT skills.

The following policies can be implemented with a short lead time.

- (1) The promotion (and revision) of certificate programmes
- (2) Better links to the industry with education and training systems

- (3) Subsidies for private learning centers and short course programmes
- (4) Sending ICT professionals to foreign countries
- (5) Conversion training for unemployed and non-ICT workers

The following policies need a somewhat longer lead time.

- (1) An increase in school sizes
- (2) Revision of school curricula
- (3) Boosting awareness of ICT careers

Strategic Actions of ICT HRD Identified at the National Level to Bridge the Demand and Supply Gap in Asia and the Pacific by the UN APCICT (2007). They are:

- (1) Expand enrolment of existing universities and colleges
- (2) Expend private educational institutes and facilitate ICT training by private companies
- (3) Integrating ICT education at the basic and secondary school level
- (4) Self, distance, and life-long learning
- (5) From brain drain to brain gain

We recommend the Myanmar government to implement the following action plans for ICT HRD. These plans belong to the following four categories:

- (1) Implementation of a systematic human resources development center to foster ICT professionals.
- (2) To strengthen the competitiveness of the ICT University through R&D collaboration research with overseas universities.
- (3) Industry - academia collaboration to solve the mismatch between the supply and demand of professional ICT human resources in both quantity and quality.
- (4) Improvement in the supply of mobile phone and the Internet through the implementation and expansion of the ICT infrastructure.

The Strategies of the HRD Center were established. They are:

- (1) Establishing in the early stages the centre will be developed as a human resource development oriented center.
- (2) The HRD programmes are focused on ICT and related fields
- (3) The programmes will be provided based on advanced Korean technology, knowledge, and experience through relevant training programmes, such as IT

and technical education programmes, a Korean language programme, and management and administration programmes, etc.

- (4) The pilot assessment programme will be implemented in the early stages prior to the main programme.
- (5) Staff activities shall be concentrated to promote the main HRD courses.
- (6) The HRD center will be extended as a cooperation and exchange center for the mutual understanding of both countries.
- (7) HRD programmes are managed and run by the local people in consultation, guidance.

3.6 HRM Practices in ICT Industry

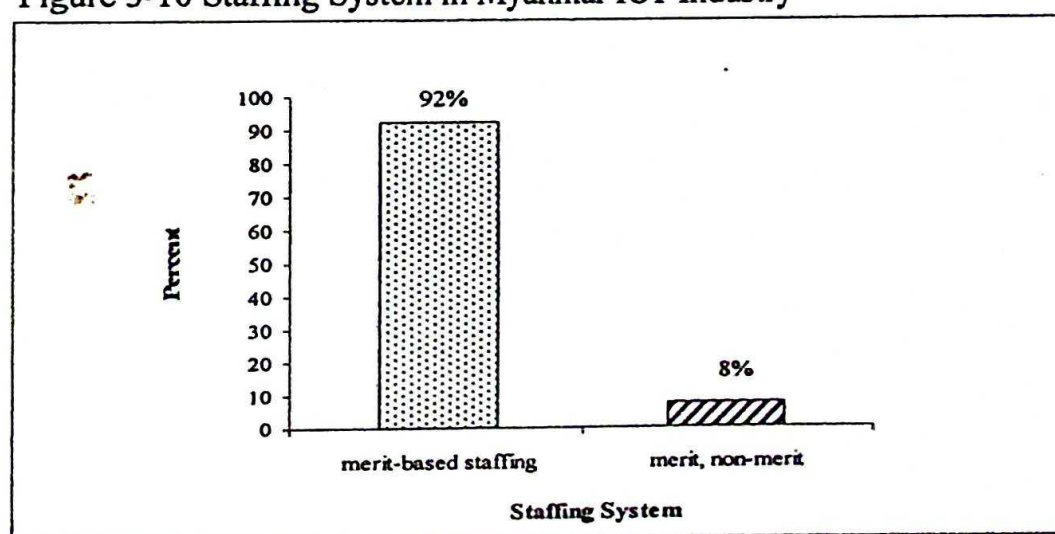
In this section employer perception on five HRM practices surveyed in the study are explained.

Table 3.14 Staffing Process Frequency

Staffing Method	Frequency	Percent
Merit-based staffing	30	92
Merit, non-merit	3	8
Total	33	100

Source: Survey, May 2010.

Figure 3-10 Staffing System in Myanmar ICT Industry



Source: Table 3-14

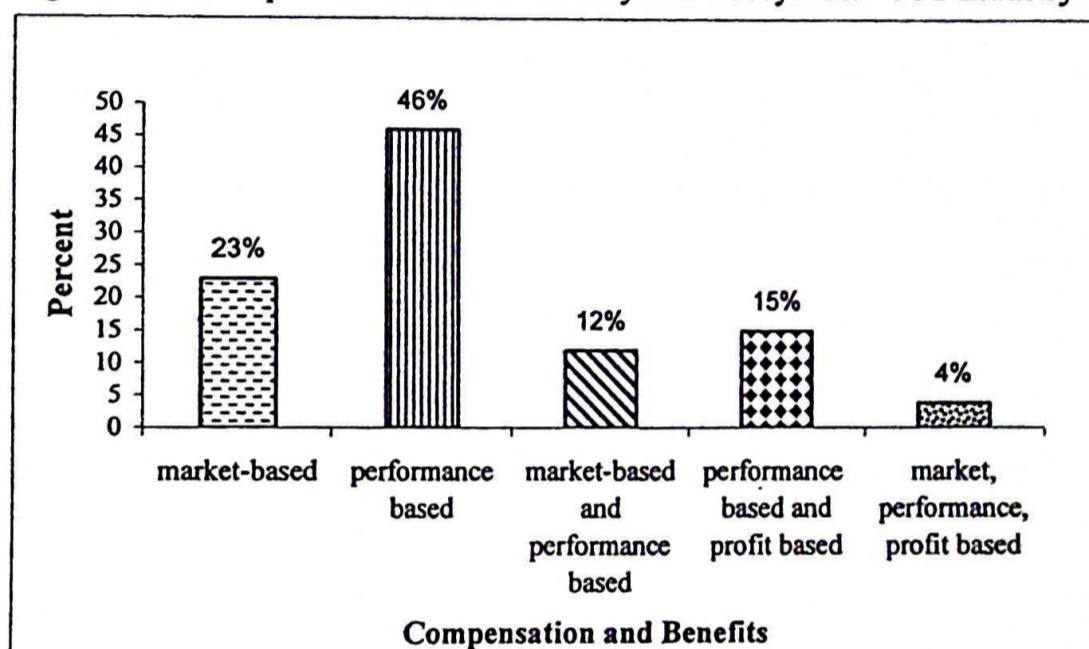
Table 3.14 shows the staffing process frequency and it indicates that 92 percent of surveyed ICT companies used merit-based staffing; while 8 percent used merit as well as non-merit based staffing.

Table 3.15 Compensation Process Frequency

Compensation and Benefits	Frequency	Percent
Market-based	8	23
Performance based	15	46
Market-based and performance based	4	12
Performance based and profit based	5	15
Market, performance, profit based	1	4
Total	33	100

Source: Survey, May 2010.

Figure 3.11 Compensation and Benefits System in Myanmar ICT Industry



Source: Table 3-15

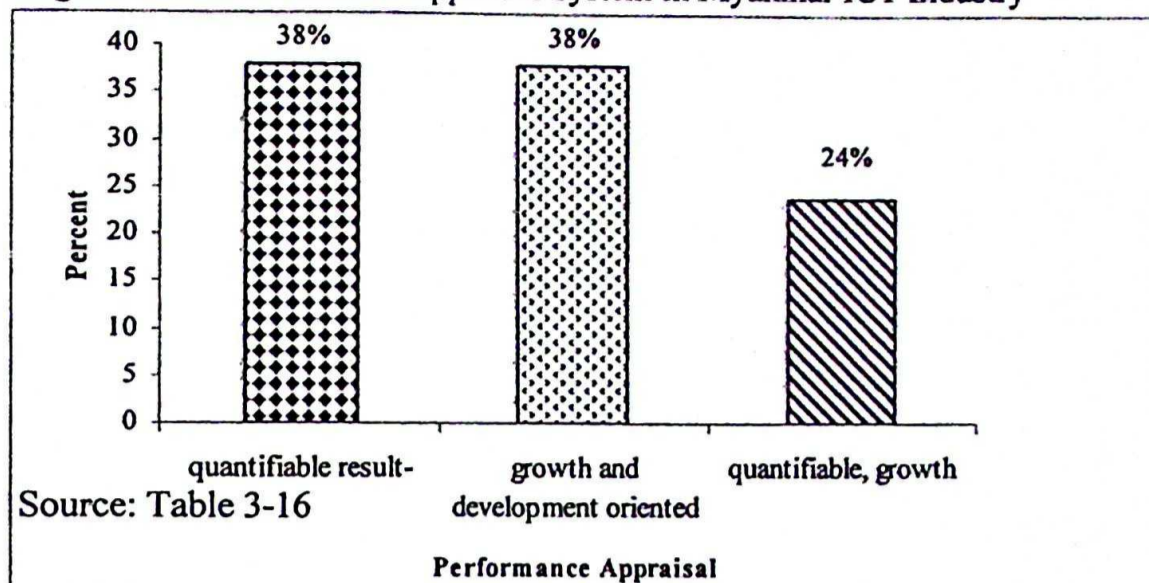
Table 3-15 presents the compensation process frequency. It was found that the majority 46 percent of ICT companies applied performance based compensation system while 23 percent used market-based compensation and 4 percent applied mix of market, performance and profit based.

Table 3-16 Performance Appraisal Process Frequency

Performance Appraisal	Frequency	Percent
quantifiable result-oriented	13	38
growth and development oriented	13	38
quantifiable, growth	7	24
Total	33	100

Source: Survey, May 2010.

Figure 3.12 Performance Appraisal System in Myanmar ICT Industry



Source: Table 3-16

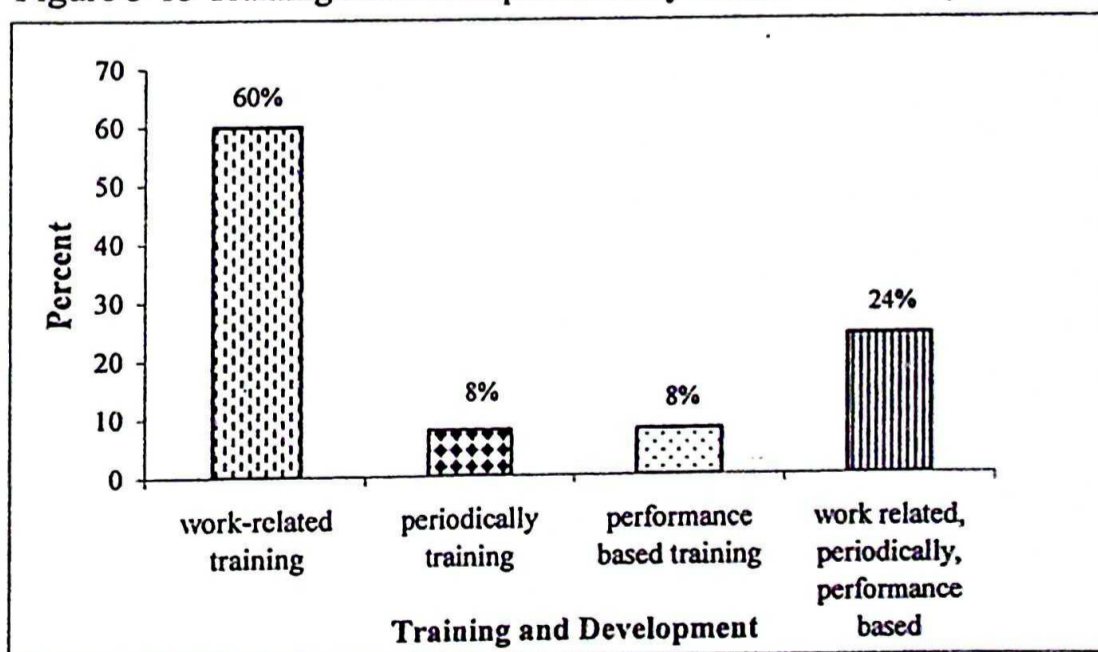
As shown in Table 3-16, 38 percent of ICT companies appraised the performance of ICT professionals on growth and development orientation while 38 percent appraised the performance on quantifiable result orientation.

Table 3-17 Training and Development

Training	Frequency	Percent
Work-related training	20	60
Periodically training	3	8
Performance based training	3	8
Work related, periodically, performance based	7	24
Total	33	100

Source: Survey, May 2010.

Figure 3-13 Training and Development in Myanmar ICT Industry



Source: Table 3-17

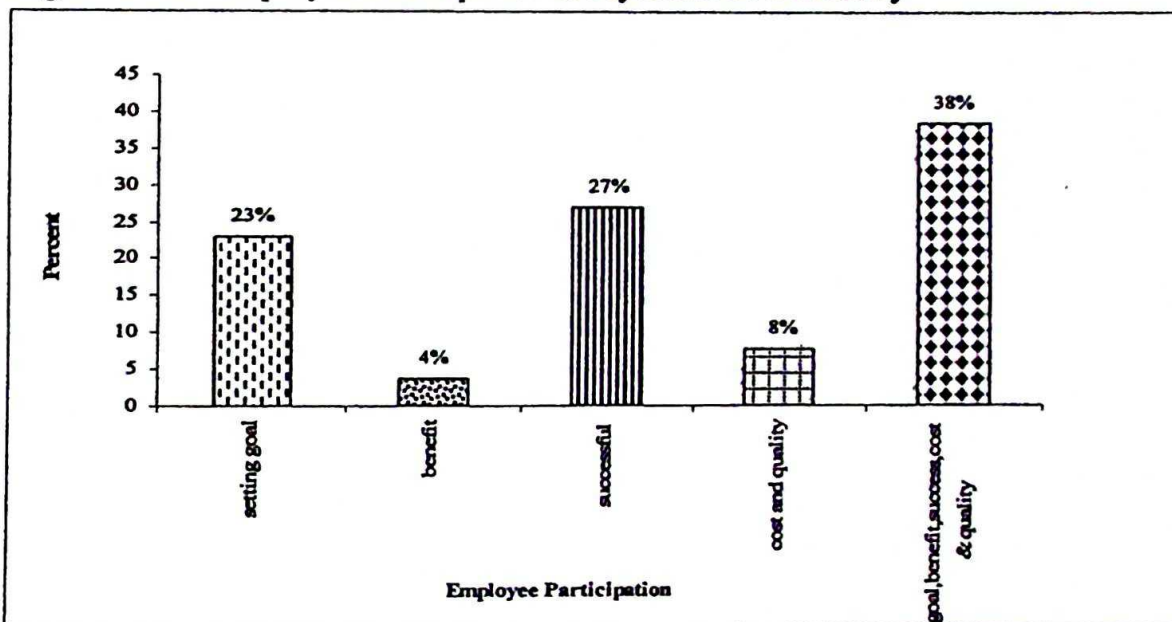
Table 3-17 shows that 60 percent of ICT companies carried out work-related training while 8 percent carried out performance based training. The rest 24 percent carried out work-related, periodically and performance based training.

Table 3-18 Employee Participation

Employee Participation	Frequency	Percent
Setting goal	8	23
Benefit	1	4
Successful	9	27
Cost and quality	3	8
Goal, benefit, success, cost and quality	12	38
Total	33	100

Source: Survey, May 2010.

Figure 3-14 Employee Participation in Myanmar ICT Industry



Source: Table 3-18

Table 3-18 shows that 38 percent of ICT companies allowed their ICT professionals to participate in making decision of company's success while followed by 23 percent allowed in decision making of setting goals.

3.7 Summary

Myanmar needs to broaden its ICT infrastructure because underdeveloped telecommunication sector of Myanmar is one of the main factors that make ICT service less competitive in terms of time and cost. Moreover, it is required to restructure the legal framework to better engage ICT, to promote competition among ICT firms and to assimilate and disseminate ICT into the economy. It also needs to promote cooperation

between industry and academic to support specialist ICT professionals. The increasing number of ICT graduates without having enough attractive employment opportunities is warning that it will lead to the brain drains of the nation. Therefore, domestic market development for creation of job opportunities is becoming one of the essential factors to the development of ICT sector. So, to develop the ICT industry, authorities need to support by performing to be least weakness, threats and obstacles.

CHAPTER 4

EMPIRICAL ANALYSIS: HUMAN RESOURCE MANAGEMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE

In this chapter, an attempt has been made to empirically test the relationship between HRM practices and organizational performance defined in terms of organizational commitment and turnover intention, focusing on ICT industry in Myanmar. Specially, this study develops and evaluates the organizational performance, using a sample of ICT companies registered with MCLIA.

There are five HRM practices considered in this study. They are staffing, compensation and benefit, employee participation, training and development and performance appraisal.

4.1 The Sample

The sample consists of thirty-three ICT company: eleven from hardware sales companies, nine from software development companies, five from IT service companies, and five from IT training companies and three from telecommunication companies

Table 4-1 Selected Companies for the Study

Stratum	No. of Company	Sample
Hardware	36	11
Software	29	9
IT training	16	5
IT service	16	5
Telecommunication	3	3
Total	100	33

Source: Survey, May 2010

The questionnaires were distributed to these companies and the results were compiled from 218 respondents. The number of ICT companies in each stratum is shown in Appendix E.

4.2 Demographic Characteristics of ICT Professionals

Table 4-2 shows the demographic characteristics of ICT professionals, that is gender, age, tenure and education. Females were 51 percent, while 49 percent were males.

Table 4-2 Demographic Characteristics of ICT Professionals

Characteristics	Frequency	Percent
Gender		
Male	107	49
Female	111	51
Total	218	100
Age		
16-21 years	17	8
22-27 years	131	60
28-33 years	46	21
34-39 years	11	5
40-50 years	10	5
51-60 years	3	1
Total	218	100
Tenure		
< 1 year	22	10
1-2 years	94	43
3-5 years	59	27
6-10 years	23	11
Over 10 years	20	9
Total	218	100
Education		
ICT related graduate	137	63
Non-ICT related graduate	75	34
High School	6	3
Total	218	100
Skill Levels		
Developer	145	66
Senior software engineer	30	14
Project manager	43	20
Total	218	100

Source: Survey, May 2010

The age distribution of ICT professionals reveals that the majority were 22-27 years 60 percent, followed by 28-33 years (21percent), 16-21 years (8 percent), 34-39 years (5 percent), 40-50 years (5 percent) and the smallest number of respondents aged between 51 and 60 years (1 percent).

In terms of organizational tenure of ICT professionals in current ICT companies, most respondents indicated that they had worked for one-two years (43 percent), followed by three–five years (27 percent), six-ten years (11 percent), less than one year (10 percent) and the smallest number of ICT professionals have been working in the company for over ten years (9 percent). With regard to education level, 63 percent held ICT-related degrees with another 34 percent having obtained non ICT-related degrees and 3 percent are high school level. Formal entry to ICT professional occupations was through the completion of bachelor degree and master's degree, although there were some people working as ICT professionals who have achieved recognition through practical experience, possibly combined with certificate or diploma level qualification. With regard to skill levels of ICT professionals, the majority, that is, 66 percent worked in developer, 43 percent worked in project manager and 30 percent worked in senior software engineer. Thus, majority of respondents were developers.

4.3 Correlations among the Variables under Study

Pearson's correlation analysis was used to analyze the linear association among variables related to the study. Correlations among variables are given in Table 4-3. It was found that all the HRM practices were significantly correlated to each other except staffing and, training and development. As expected, organizational commitment is positively related to HRM practices; staffing ($r = 0.445$, $p = 0.000$), compensation and benefit ($r = 0.516$, $p = 0.000$), performance appraisal ($r = 0.471$, $p = 0.000$), training and development ($r = 0.320$, $p = 0.000$), and employee participation ($r = 0.327$, $p = 0.000$). The Pearson's correlation test also indicated turnover intention was negatively related to all the HRM practices; staffing ($r = -0.158$, $p = 0.020$), compensation and benefit ($r = -0.432$, $p = 0.000$), performance appraisal ($r = -0.311$, $p = 0.000$), training and development ($r = -0.151$, $p = 0.020$), and employee participation ($r = -0.412$, $p = 0.000$). Correlations among the HRM practices were generally modest and varied from 0.097 to 0.623. But

strongly linear associations between independent variables and dependent variables were not observed.

Table 4-3. Pearson's Correlation Matrix of Variables

		ST	CB	PA	TD	EP	OC	TI
ST	Pearson Correlation	1						
	Sig. (2-tailed)							
CB	Pearson Correlation	.411**	1					
	Sig. (2-tailed)	.000						
PA	Pearson Correlation	.363**	.617**	1				
	Sig. (2-tailed)	.000	.000					
TD	Pearson Correlation	.097**	.413**	.523**	1			
	Sig. (2-tailed)	.154	.000	.000				
EP	Pearson Correlation	.194**	.463**	.462**	.623**	1		
	Sig. (2-tailed)	.004	.000	.000	.000			
OC	Pearson Correlation	.445**	.516**	.471**	.320**	.329**	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.000		
TI	Pearson Correlation	-.158*	-.432**	-.311**	-.151*	-.162*	-.412**	1
	Sig. (2-tailed)	.020	.000	.000	.026	.017	.000	

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

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

ST=Staffing, CB=Compensation and Benefits, PA=Performance Appraisal,
TD= Training and Development, EP=Employee Participation, OC=Organizational Commitment,
TI= Turnover Intention

All the variables are significantly correlated with each other. The reason for this finding is that in most of the Myanmar ICT professionals consider that it is important to be related between staffing practice, and training and development. Correlations between the HRM practices and, organizational commitment and turnover intention varied between -0.43 and 0.52. Compensation and benefits had the highest strength of relationship with organizational commitment (0.516**, $p < .01$) and turnover intention (-0.432**, $p < .01$). Of all the HRM practices, compensation and benefits greatly affects organizational commitment and turnover intention of ICT professionals in Myanmar ICT industry.

Correlations higher than 0.70 may increase the probability of multicollinearity in the analysis. All correlations between measures were lower than 0.70, which suggests less possibility of multicollinearity.

4-4 Descriptive Statistics of Variables

4.4.1 Organizational Commitment

Organizational commitment, the dependent variable of the study, was assessed using twelve items adapted from Meyer and Allen (1990)'s affective commitment. The responses to the items are coded as: 1 for strongly disagree, 2 for moderately disagree, 3 for slightly disagree, 4 for slightly agree, 5 for moderately agree and 6 for strongly agree. A higher score indicates a higher commitment the organization.

4.4.2 Turnover Intention

Turnover intention, the dependent variable of the study was assessed using five items adapted from Myer et. al.(1993). The statements or items in the instrument measure the probability of ICT professional's intention to leave the organization. Each item is represented with six-point Likert response scales (1 for strongly disagree, 2 for moderately disagree, 3 for slightly disagree, 4 for slightly agree, 5 for moderately agree and 6 for strongly agree) to indicate their likelihood of leaving the organization in the near or distant future. A higher score indicates a higher intention to leave the organization.

4.4.3 HRM Practices

Staffing practices were measured using a 4-item scale and compensation and benefit was measured by a 6-item scale. Performance appraisal was measured using a 5-item scale. Training and development scale was measured using a 6-item scale. Last, employee participation was measured by a 6-item scale. All the items were measured on a 6-point scale (1 for strongly disagree, 2 for moderately disagree, 3 for slightly disagree, 4 for slightly agree, 5 for moderately agree and 6 for strongly agree).

The items measuring of the HRM practices, organizational commitment and turnover intention included in the research model are presented in Appendix C.

4.4.4 Control Variables

Turnover intention and organizational commitment are not only influenced by a single factor as there are other variables that could predict it. For example, literature has identified work related factors, personal characteristics and external factors as determinants of employee turnover tendency and organizational commitment (Tyagi and Wotruba, 1993). Therefore, the identification of other factors that relate or impact on turnover intentions is considered important. In this study, therefore, age, level of education, gender and tenure are examined as other potential factors in turnover intentions and organizational commitment. The following control measures were used:

- Age ('16-21 years old = 1', '22-27 years old = 2', '28-33 years old = 3', '34-39 years old = 4', '40-50 years old = 5', '51-60 years old = 6' and 'over 60 years old = 7').
- Level of education ('ICT related degree = 1', 'non-ICT related degree = 2' and 'high school = 3')
- Gender ('male = 1', 'female = 2')
- Tenure ('below one year = 1', '1 to 2 years = 2', '3 to 5 years = 3', '6 to 10 years = 4' and 'above 10 years = 5')

To explore the effect of tenure on dependent variable, tenure was divided again into three groups: 'below two years=1', '2-5 years=2' and 'above 5 years=3'. The position of ICT professionals are defined by length of experience: below 2 years experienced professionals as 'developer', 2 to 5 years experienced professionals as 'senior software engineers' and above 5 years experienced professionals as 'project managers'.

Table 4-4 presents descriptive statistics of control variables, HRM practices, organizational commitment and turnover intention.

As Table 4-4 shows, staffing had an average score 4.608 with a standard deviation of 0.905; compensation and benefit had an average score 4.446 with a standard deviation of 0.707; performance appraisal had an average score 4.494 with a standard deviation of 0.881; training and development had an average score of 4.372 with a standard deviation

of 1.068; employee participation had an average score of 4.443 with a standard deviation of 0.962.

Table 4-4. Mean, Standard Deviations of Variables

Variables	Mean	Std. Deviation
Age	2.43	0.973
Education	1.40	0.544
Gender	1.51	0.501
Tenure	1.99	1.493
Skill level	1.82	0.685
Staffing	4.608	0.905
Compensation and benefits	4.446	0.707
Employee participation	4.443	0.962
Training and development	4.372	1.068
Performance appraisal	4.494	0.881
Organizational commitment	4.534	0.723
Turnover intention	2.598	1.169

Source: Survey, May 2010

Organizational commitment had an average score of 4.534 and a standard deviation of 0.723; turnover intention had an average score of 2.598 with a standard deviation of 1.169. Age had an average score 2.43 with a standard deviation of 0.973; Education had an average score 1.40 with a standard deviation of 0.544; gender had an average score 1.51 with a standard deviation of 0.501; tenure had an average score 1.99 with a standard deviation of 1.493; skill level had an average score 1.82 with a standard deviation of 0.685.

4.5 The Cronbach's Alpha : Reliability of the Scales

Questionnaires that were administered consisted of five HRM practices which are staffing practices (4 items), compensation and benefits practices (8 items), performance appraisal practices (5 items), training and development practices (6 items) and employee participation practices (6 items). The questionnaire was tested on internal consistency and other measure.

To study the internal consistency of the questionnaires the Cronbach's alpha (α) was calculated for each variable. Cronbach's alpha ranges from zero to one, with zero indicating complete unreliability and a value of one indicating perfect reliability (Cronbach, 1951). Alpha values lower than 0.70 are not desirable (Nunnally, 1978). The internal reliability of the survey instrument was verified by calculating Cronbach's alpha statistic for each factor in the survey using SPSS version 16. Surveyed instrument was considered reliable if the factor alpha's score was at least 0.70 as suggested by Carmines and Zeller (1990) and Gliem (2003). Cronbach test results are as follows:

Table 4-5 Reliability of the Scales

Scales	No. of Items	Cronbach's Alpha Value
Staffing	4	0.699
Compensation and benefits	8	0.739
Employee participation	6	0.724
Training and development	6	0.816
Performance appraisal	5	0.819
Organizational commitment	12	0.860
Turnover intention	5	0.872

Source: Survey, May 2010

As Table 4-5 shows, alpha values are 0.699 for staffing practice, 0.739 for compensation and benefits, 0.724 for employee participation, 0.816 for training and development, 0.819 for performance appraisal, 0.860 for organizational commitment and 0.872 for turnover intention. The reliability of the variables ranged from 0.699 (staffing) to 0.872 (turnover intention) which satisfied the required minimum level of reliability.

4.6 Relationship between HRM Practices and Organizational Commitment

The organizational commitment was regressed as the dependent variable with five HRM practices as the independent variables. The regression equation of organizational commitment on HRM practices is

$$OC = \beta_0 + \beta_1 ST + \beta_2 CB + \beta_3 EP + \beta_4 TD + \beta_5 PA + \alpha_1 \text{Age} + \alpha_2 \text{Education} + \alpha_3 \text{Gender} + \alpha_4 \text{Tenure} + u$$

where OC = Organizational commitment

ST = Staffing

CB = Compensation and benefits

EP = Employee participation

TD = Training and development

PA = Performance appraisal

u = Random error term with mean zero and constant variance σ^2

Table 4-6 presents the results of linear regression analysis for organizational commitment on HRM practices. The coefficients of staffing, compensation and benefits, and performance appraisal are 0.209, 0.251, and 0.134 respectively. All three variables are statistically significant. Adjusted R^2 is 0.346 and F-value is 12.466. Training and development, employee participation and control variables are insignificant variables.

Table 4-6 Regression Results for Organizational Commitment on Selected HRM Practices

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.542	0.334		4.623	0.000
Age	0.004	0.050	0.006	0.085	0.933
Gender	0.002	0.084	0.001	0.022	0.982
Education	-0.030	0.076	-0.023	-0.396	0.693
Senior software engineer	-0.109	0.120	-0.052	-0.912	0.363
Project manager	0.161	0.129	0.089	1.248	0.213
Staffing	0.209	0.050	0.261	4.149	0.000
Compensation and benefits	0.251	0.077	0.246	3.264	0.001
Employee participation	0.011	0.056	0.014	0.193	0.847
Training and development	0.063	0.052	0.093	1.211	0.227
Performance appraisal	0.134	0.065	0.161	2.057	0.041
Adjusted $R^2 = 0.346$					
F-value = 12.466					0.000

Source: Survey, May 2010

The insignificant predictor variables were removed from analysis. Therefore influential HRM practices are staffing, compensation and benefit, and performance appraisal. The analysis was conducted again with influential predictors as shown in Table 4.7.

Table 4-7 Regression Results for Organizational Commitment on Influential HRM Practices

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.540	0.280		5.507	0.000
Staffing	0.203	0.049	0.253	4.162	0.000
Compensation and benefits	0.293	0.074	0.287	3.982	0.000
Performance appraisal	0.168	0.059	0.202	2.864	0.005
Adjusted R ² = 0.347					
F-value = 39.406					0.000

Source: Survey, May 2010

As expected, the coefficient of all independent variables are positive. As Table 4-7 shows, the most significant predictor of organizational commitment is compensation and benefits, with the coefficient of 0.293 indicating that an increase of a unit score in compensation and benefits leads to an increase of 0.293 unit in the average organizational commitment, remaining other independent variables unchanged. The significant relationship between these two variables agrees with the findings of Niederman and Sumner (2004), Burnes (2006), and Callas (1998) since ICT professionals have always thinking about rewards and growth opportunities. The second one is staffing with coefficient of 0.203. This indicates that every additional unit score in staffing leads to 0.203 unit increase in average organizational commitment with the effects of other independent variables held constant. This finding supports the idea that ICT professionals who are deliberately recruited and selected to match business direction and organizational requirements can have attitude and ability to improve their performance enhancing organizational objective. The next predictor is performance appraisal with the coefficient of 0.168 indicating that for one unit additional score in performance appraisal leads to increase 0.168 score of organizational commitment, other independent variables held constant. The result supports the previous research findings that employee commitment and productivity can be improved with performance

appraisal systems (Brown and Benson, 2003). Employee involvement in decision making can make ICT professionals more committed to the organization. But the relationship between performance evaluation practice and ICT professionals' organizational commitment is quite weak (0.168). The reason for this finding is that in most of ICT companies there is no proper ICT professionals' performance evaluation system. The adjusted R^2 in this model is 0.347. It means that 34.7 percent of the variation in organizational commitment is explained by the variation in these independent variables.

4.7 Relationship between HRM Practices and Turnover Intention

The turnover intention was regressed as the dependent variable with five HRM practices used as the independent variables. The regression equation of turnover intention on HRM practices is

$$TI = \beta_0 + \beta_1 ST + \beta_2 CB + \beta_3 EP + \beta_4 TD + \beta_5 PA + \alpha_1 \text{Age} + \alpha_2 \text{Education} + \alpha_3 \text{Gender} + \alpha_4 \text{Tenure} + u$$

where TI = Turnover Intention

ST = Staffing

CB = Compensation and benefits

EP = Employee participation

TD = Training and development

PA = Performance appraisal

u = Random error term with mean zero and constant variance σ^2

Table 4-8 presents the results of linear regression analysis for turnover intention on HRM practices. The coefficients of gender, compensation and benefits, and performance appraisal are 0.282, -0.674, and -0.202 respectively. Compensation and benefits variable is statistical significant. Gender and performance appraisal are statistically significant at 10 percent level. Employee participation and control variables are insignificant variables. Senior software engineer, project manager, education, age, staffing, employee participation and, training and development, variables are also insignificant variables.

Table 4-8 Regression Results for Turnover Intention on Selected HRM Practices

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.117	0.605		8.452	0.000
Gender	0.282	0.152	0.121	1.851	0.066
Senior software engineer	-0.106	0.216	-0.031	-0.490	0.624
Project manager	-0.373	0.233	-0.127	-1.599	0.111
Education	0.053	0.138	0.025	0.385	0.701
Age	0.062	0.090	0.051	0.687	0.493
Staffing	0.076	0.087	0.061	0.882	0.379
Compensation and benefits	-0.674	0.139	-0.408	-4.860	0.000
Employee participation	0.073	0.101	0.060	0.725	0.470
Training and development	0.034	0.095	0.031	0.355	0.723
Performance appraisal	-0.202	0.118	-0.150	-1.715	0.088
Adjusted R ² = 0.180					
F-value = 5.779					0.000

Source: Survey, May 2010

The insignificant predictor variables were removed from analysis. Therefore influential independent variables are gender, compensation and benefits, and performance appraisal. Regression analysis was conducted again with these influential predictors as shown in Table 4.9.

Table 4-9 Regression Results for Turnover Intention on Influential HRM Practices

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.583	0.489		11.425	0.000
Gender	0.290	0.148	0.124	1.957	0.052
Compensation and benefits	-0.613	0.130	-0.371	-4.721	0.000
Performance appraisal	-0.145	0.107	-0.108	-1.357	0.176
Adjusted R ² = 0.193					
F-value = 13.985					0.000

Source: Survey, May 2010

As Table 4-9 shows, the most significant predictor of turnover intention is compensation and benefits with coefficient of -0.613. This indicates that every additional unit score in compensation and benefits leads to 0.613 unit decrease in average turnover intention with the effects of other independent variables remained unchanged. By this result, we can say that the ICT professionals would change their decision to leave their job if they were satisfied with the raise in their compensation and benefits. The performance appraisal is significant at 20 percent level with coefficient of 0.145 indicating that on average additional unit score of performance appraisal leads to 0.145 unit decrease in the average turnover intention, other independent variables remained unchanged. The gender variable is significant at 5 percent level. The predictor variables explained 19.3 percent of the variation in turnover intention according to adjusted R^2 . Compensation and benefit, and performance appraisal are negatively related to turnover intention and gender has positive relationship with turnover intention. Among the HRM practices it was found that compensation and benefits followed by performance appraisals are the influencing factors for ICT professional retention in ICT industry.

4.8 Relationship between Organizational Commitment and Turnover Intention

To examine the mediating effect, the relationship between of organizational commitment and turnover intention is summarized with the regression results in Table 4-10.

Table 4-10 Regression Results for Turnover Intention on Organizational Commitment

Variables	Standardized Coefficients B value	t	Sig.
(Constant)		12.204	0.000
Organizational commitment	-0.412	-6.641	0.000
Adjusted $R^2 = 0.166$			
F-value = 44.109			0.000

It can be viewed from Table 4-10 that organizational commitment is negatively and significantly related to turnover intention. The value of adjusted R^2 indicated that the organizational commitment alone can explain 16.6 percent of the turnover intention. The

finding suggests that the more ICT professionals identify themselves with the organization, the less is their intention to leave the organization. A number of empirical studies confirm the important role of organizational commitment in the turnover process for IT personnel (Igarria and Greenhaus 1992, Igarria and Guimaraes 1999). They posit that IT employees who are highly committed to their organization are less likely to leave than those who are relatively uncommitted.

4-9 The Mediating Effect of Organizational Commitment on Relationship between HRM Practices and Turnover Intention

To investigate the mediation effect of organizational commitment on relationship between HRM practices and turnover intention, a four-step procedure suggested by Baron and Kenny (1986) was undertaken.

Table 4-11 Regression Analysis Results for Mediating Effect of Organizational Commitment

Variables	Turnover Intention (without OC)	Turnover Intention (with OC)
Staffing	0.050	0.129**
Compensation and benefits	-0.403***	-0.313***
Performance appraisal	-0.082	-0.025
Organizational commitment	--	-0.296***
Adjusted R ²	0.181	0.234
F-value	17.001***	17.598***

***P<.001; *p<.01

Table 4-11 provides the summary of the results to ascertain the mediation effect of organizational commitment on the relationship between HRM practices and turnover intention. From Table 4-11, it can be observed that all three HRM practices (staffing, compensation and benefits, and performance appraisal) were able to meet the conditions for mediation as suggested by Baron and Kenny (1986). Interestingly, the effects of performance appraisal ($B = -0.025$, $p < .05$) on turnover intention became statistically insignificant, while the effects of compensation and benefits ($B = -0.313$, $p < .001$) and staffing ($B = -0.129$, $p < .01$) became little weaker but remain significant in the presence of organizational commitment in the regression equation. This implies that the

relationship of performance appraisal and turnover intention is fully mediated by the third variable, for example, organizational commitment in this case, and the relationship of compensation and benefits, and staffing is partially mediated by organizational commitment. This finding agrees with Samson Sam Gnanakkar (2010)¹, and organizational commitment plays a significant role in predicting the relationship between HRM practices and turnover intention apart from the direct relationship. This reveals that ICT professionals are more committed through HRM practices supported by their companies, in turn, they lead to a lower turnover intention. When they satisfy HRM practices they receive, they commit their company more. Thus, they may become less intention to leave the company, wishing to remain working in current company.

4-10 Hypothesis Testing for HRM Practices and Organizational Performance

Hypothesis I: The relationship between HRM practices and organizational commitment

According to the regression results of organizational commitment on HRM practice shown in section 4-6, three HRM practices; staffing, compensation and benefits, and performance appraisal have positive relationship with dependent variable, that is, organizational commitment. All these variables are statistical significant at 1 percent level. It can be concluded that ICT professionals in Myanmar ICT industry perceives that HRM practices more effectively provided by their companies can more commit their companies. Therefore results of regression analysis support the hypothesis that HRM practices are positively related to organizational commitment.

Hypothesis II: Relationship between HRM practices and turnover intention

Regression analysis of turnover intention on HRM practices is shown in section 4-7. According to the results, compensation and benefits, and performance appraisal are negatively related to the dependent variable, that is, turnover intention. The results of regression analysis support the hypothesis that HRM practices of Myanmar ICT industry are negatively associated with turnover intention of ICT professionals. It can be

¹ There was mediating effect of organizational commitment on HRM practices and turnover intention relationship among ICT professionals in India.

concluded that HRM practices of Myanmar ICT industry are inversely related with turnover intention of ICT professionals.

Hypothesis III: The best HRM practice to reduce turnover intention and strengthen organizational commitment

Some HRM practices are better than others and they have additive positive effects on organizational performance. According to sections 4-6 and 4-7, compensation and benefits is statistically significant with organizational commitment as well as turnover intention. Compensation and benefits is positively related to organizational commitment and inversely related to turnover intention. It can be concluded that compensation and benefits is the best HRM practice to strengthen organizational commitment and reduce turnover intention.

Hypothesis IV: The relationship between organizational commitment and turnover intention

According to section 4-8, organizational commitment is inversely related to turnover intention of ICT professional. In this respect, the more ICT professionals identify themselves with the organizational, the greater is their intention to stay. It can be concluded that organizational commitment is negatively related to turnover intention. Therefore, hypothesis IV was supported.

Hypothesis V: ICT professionals with longer organizational tenure and high compensation and benefits had lower levels of turnover intention.

There is stronger relationship between compensation and benefits, and turnover intention. However, this might lead to entrenchment and ability. But as Table 4-8 shows, regression results of control variables affect on HRM practices and turnover intention relation. The results reveal that tenure of ICT professionals is not statistically associated with turnover intention. Therefore, regression results did not support the hypothesis that ICT professionals with longer organizational tenure and high compensation and benefits had lower levels of turnover intention.

Hypothesis VI: The mediation effect of organizational commitment on HRM practices and turnover intention

After supporting hypothesis I, II, and IV, according to section 4-9, it was found that HRM practices with organizational commitment also related to turnover intention. Staffing, compensation and benefits, and organizational commitment are statistically significant. It implies that the relationship of performance appraisal and turnover intention is fully mediated by the third variable, that is, organizational commitment. Relationship between the independent variables, staffing, compensation and benefits, and dependent variable, turnover intention was partially mediated by organizational commitment. According to the results from Tables 4-7, 4-9, 4-10 and 4-11, organizational commitment had a significant mediating effect on the relationship between HRM practices and turnover intention. Therefore, hypothesis V was supported, which states that organizational commitment will mediate the relationship between HRM practices and turnover intention. It indicated that managers should provide HRM practices to increase organizational commitment that would, in turn, reduce turnover intention and this will help in retaining the talented professionals.

CHAPTER 5

CONCLUSION

5.1 Summary of Findings

The sample indicated the age of 60 percent of ICT professionals are in the range of 22-27 years and 43 percent of respondents have 1-2 years experience and only 9 percent of respondents have more than 10 years experience. 51 percent of respondents are female professionals and 63 percent of ICT professionals hold ICT related degree.

The study investigated the impact of HRM practices on employees' organizational commitment and turnover intention. The fundamental objective of this research was to study the impact of HRM practices as a critical tool to make ICT professionals more committed to the organization and would decrease employees' intention to leave the organization. Moreover, this study explored the best HRM practice predicting organizational commitment and turnover intention and relationship between organizational commitment and turnover intention. The study also examined if there is effect of tenure on turnover intention and organizational commitment mediates the HRM practices and turnover intention relation. There were seven main objectives in this study.

The statistical results of this study indicated that the ICT professionals' perceptions of human resource management practices particularly staffing, compensation and benefits, and performance appraisal are positively and significantly related to organizational commitment. The result also highlighted that compensation and benefits, and performance appraisal are negatively related to turnover intention and demographic factor; gender is positively related to turnover intention. As far as the direct relationship is concerned, compensation and benefits is the most important reason for commitment and turnover decision. It was also found that organizational commitment is negatively and significantly related to employees' turnover intention and organizational tenure of ICT professionals are insignificantly related to turnover intention.

Five dimensions of HRM practices were included to study the influence of HRM practice on organizational commitment and turnover intention. These practices are staffing, compensation and benefits, employee participation, training and development, and performance appraisal.

Regression analysis was applied to test the hypotheses. The summary of the results of hypotheses which were tested in this study is presented in Table 5.1. It states that collected data does not support fifth hypothesis. The data supported the remaining of six hypotheses stated in chapter four.

Table 5.1 Summary of the Result of Testing the Hypotheses

Hypotheses	Description	Supported
H1	HRM practices are positively related to organizational commitment	Yes
H2	HRM practices are negatively related to turnover intention	Yes
H3	Compensation and benefits is the best HRM practice to strengthen organizational commitment and reduce turnover intention	Yes
H4	Organizational commitment is negatively related to turnover intention amongst ICT professionals in Myanmar ICT industry	Yes
H5	ICT professionals with longer organizational tenure and high compensation and benefits had lower levels of turnover intention.	No
H6	Organizational commitment will mediate the relationship between HRM practices and turnover intention.	Yes

Source: Surveyed Results

5.2 Discussion of Findings

The first hypothesis was supported by the current data. A significant link was found between HRM practices and organizational commitment. The findings suggest that more use of effective HRM practices would make the ICT professionals more committed to their company. The finding is consistent with a study of Privanko Guchant (2007) which found significant of HRM practices on organizational commitment. Therefore, the

findings suggest that HRM practices are important determinants of organizational commitment. ICT companies can have competitive advantage through HRM practices.

It was found that out of five HRM practices staffing, compensation and benefits, and performance appraisal emerged as significant positive predictors on organizational commitment.

ICT professionals accept that if they get more compensation and benefits procedure supported by ICT companies, they will try to improve organizational performance and in turn, companies will have competitive advantages. Therefore, ICT companies need to invest more on compensation and benefits system to have higher performance through more committed ICT professionals.

Staffing ICT professionals with required knowledge and competencies to perform particular job influenced the organizational commitment. Direct effect of staffing on organizational commitment was found in this study. This result supports the findings in a study by Edgar and Geare (2005) who found a significant positive relationship between recruitment and selection (staffing) and organizational commitment indicating that using effective staffing method would lead to higher employee commitment level. It may also be because of using internal recruitment for promotion procedure. Internal recruitment is a means to motivate own personnel and strengthen their bond with the company (Vander Meeran 1999). Professionals recruited from informal channels are seen as motivated to work at the firm, as able to fit into the work group and pick up the skills needed (Windolf and Wood 1992). It may be that ICT companies mostly use informal channel of recruitment.

Direct relationship between performance appraisal and organizational commitment was found in this study. Change (2005) concluded performance appraisal as one of the HRM practices in the commitment and findings suggest that use of effective HRM practices would make the employees more committed to the organization. If ineffective performance evaluation practices exist in the industry, it would be difficult to gain desired output from professionals.

Training and development, and employee participation became statistically insignificant with organizational commitment. A significant positive relationship between training and development, and organizational commitment was reported by Bartlett (2001) and the findings suggested that greater use of training will make employee more committed to the organization. However, the result of this study was not consistent with the findings in the study by Bartlett (2001). Bartlett's study examined only the influence of training on commitment, while this study examined the influence of several HRM practices together. It may be the ICT professionals feel that training and development programmes provided by ICT companies are unable to gain promotion or apply learnt skills and this may not increase their commitment and they can get updated ICT skill from self-study. This suggests that ICT professionals have negative views of the training availability in their company. This may result from the inadequate nature of the training offered that might not have been adapted to the ICT professionals context.

The effectiveness of employee participation systems will be enhanced if employees know their efforts will be awarded and will increase the probability of their investment. Finding can be interpreted that ICT professionals are allowed in making decision in company issues but they lacked opportunities for their involvement. Therefore, training and development, and employee participation are not motivating factors for ICT professionals' commitment.

Thus, the result indicated the importance of staffing, compensation and benefits, and performance appraisal for ICT professionals, and ICT industry management should pay much more attention to this area of HRM practices to commitment potential ICT professionals.

Second hypothesis was accepted by the current data. There was significant negative relationship between HRM practices and turnover intention. The findings suggest that effective HRM practices would make the ICT professionals less intention to leave the company.

The result indicated that out of five HRM practices, only compensation and benefits, and performance appraisal emerged as significant and negative predictors of turnover

intention. Myanmar ICT companies need to provide more compensation and benefits practices and, fair and reliable performance appraisal system to retain skilled and competent ICT professionals.

Unlike the Indian IS professionals who “were satisfied with their salaries even though they said they could increase their base salary if they left their current organization” (Lacity et al., 2008). Pay was an immense motivation for South Africa ICT professionals. Remuneration emerged as the major element of the organizational rewards system and was, therefore, the most influential turnover factor for ICT professionals in South Africa. The findings match with Hom and Griffeth 1995. They argued that remuneration is a major contributing factor in labour turnover.

Performance appraisal had significant and negative association with turnover intention. In ICT industry, there was no systematic performance appraisal system, but ICT professionals believed that if the evaluating method on their performance is fair and right, they will have less intent to leave the company.

Staffing, training and development, and employee participation were not associated with turnover intention among ICT professionals in Myanmar ICT industry. It can be interpreted that ICT professionals believed these practices as unimportant for them to leave the company. Evidence from the previous research also suggested that firms with superior training programmes are likely to experience lower staff turnover than companies that neglect staff development (Arthur, 1994; Fey et al., 1999) and also, more investment in training and development is positively related to reduce the employees’ intention to leave the organization (Harel and Tzafrir, 1996). However, results of this study do not support the previous research findings.

The result also showed that there was significant relationship between gender and turnover intention. This finding agreed with that of other researchers. For instance Weisberg and Kirschenbaum (1993) found that while male professional had more turnover intention than female. Most of the previous studies found that females report higher levels of turnover intentions (e.g., Miller and Wheeler, 1992) and actual turnover (e.g., Mano-Negrin, 2003) than men.

Thus, the result indicated the importance of compensation and benefits, and performance appraisal for ICT professional, and ICT industry management should pay much more attention to this area of HRM practices to retain potential ICT professionals.

Third hypothesis was supported by the current data as highest influence of compensation and benefits on organizational commitment and turnover intention. Compensation and benefits were found to be strong HRM practice predictor of organizational commitment and turnover intention. The implication of this finding is that compensation and benefits is the most critical HRM practice to be implemented by ICT companies to strengthen organizational commitment and to reduce the degree of turnover intention. In other words, the higher the compensation and benefits of ICT professional, the higher the commitment to the organization and the lower the turnover intention. For an ICT company with ICT professionals increasing commitment to organization and reducing intention to leave, compensation and benefits appear to be the most important issue to tackle. The study result is consistent with the previous results such as Ovadje (2009), Shahzad et al. (2008). The previous studies explained that compensation and benefits are highly considered among other HRM practices especially in the context of underdeveloped countries. For instance, Ovadje (2009) found pay as highly significant variable in the turnover research in the Nigerian context, while Shahzad et al. (2008) explained that faculty pay might be a great tool in retaining competent faculty in the context of Pakistan.

It was also found that performance appraisal practice is the second strongest predictor on organizational commitment and turnover intention. If they perceive evaluation results on their performance are fair and satisfied, they involve more in company's activities and less intend to leave the company. Thus, ICT companies need to pay more emphasis on compensation and benefits practice than other HRM practices to retain competent ICT professionals.

Hence this study identifies that HRM practices significantly impact on organizational commitment and turnover intention. It is of interest to note that compensation and benefits practice had the strongest significant effect on determining the ICT

professionals' commitment and turnover intention. IT executives need to choose among those practices that are likely to address best the particular needs of ICT professional. In light of the results obtained in the present study, it appears that an effective ICT retention strategy will focus on compensation and benefits.

Fourth hypothesis was supported by the current data as negative relationship between organizational commitment and turnover intention. Past research showed a negative relationship between organizational commitment and turnover intention (Meyer *et al.* 1993). In this light, the more employees identify themselves with the organization, the greater is their intention to stay. One explanation for the latter result is that some individuals may not want to quit their organization even if they are not emotionally attached to it because working conditions are simply too good. Sommers (1995) and Chen *et al.* (1998) also found negative relationships between organizational commitment and turnover intention. Interestingly, both empirical studies found a stronger relationship between organizational commitment and turnover intention. These results suggest that employees are more willing to remain in an organization when they have an emotional attachment to the organization. ICT executives should consider the organizational commitment as a critical component of a corporate ICT retention strategy.

Fifth hypothesis was not supported by the current data as effect of current job tenure on the turnover intention among ICT professionals.

The number of years employees spend in an organization or what is often referred to as tenure is an important factor in many job-related issues. Tenure, as used in industrial/organizational psychology literature refers to the number of years that a person has been formally employed in an organization (Trimble, 2006). Few empirical studies on the relationship between tenure and turnover and turnover intentions are beginning to emerge (Gable, Hollon and Dangelo, 1984; Guper, 1999; Parasuraman and Futrell, 1983; Schultz, Bigoness and Gagnon, 1987; Trimple, 2006). In these previous studies, it was found that tenure is inversely related to turnover in such a way that those who have stayed longer in the organization have less intention to leave their

organizations. Also, previous studies on tenure and turnover were carried out among employees in private business (e.g. Schultz, Bigoness and Gagnon, 1987) or among missionaries (e.g. Trimple, 2006) and little is known about tenure and turnover intentions among employees in civil service especially in developing economies of Africa. This study among other things investigated the impact of tenure on turnover intentions among ICT professional in Myanmar. This study was not consistent with previous studies.

Sixth hypothesis was supported by the current data. It was found that organizational commitment mediated the relationship between HRM practices and turnover intention. When employees have positive attitudes about the organization, they are likely to remain loyal and committed, resulting in lower turnover intention.

The findings of the study also highlighted the importance of indirect influences of ICT professional' staffing, compensation and benefits, and performance appraisal on turnover intention through their commitment.

The findings of this study are consistent with a study by Meyer and Smith (2000). They found that the mediating effect of organizational commitment on the relationship between HRM practices and turnover intention. High commitment HRM practices were negatively related to professionals' turnover intention.

HRM practices are the primary means by which ICT companies can make their professionals more committed to the companies, which in turn resulted in lower turnover intention and thus achieve good organizational performance. Hence, ICT company managers can design HRM practices to improve organizational commitment, and enhance the retention of competent ICT professionals.

5.3 Recommendation and Suggestions

Myanmar ICT companies are facing shortage of skilled and competent ICT professionals. To retain productive ICT professionals, it needs to examine the HRM practices affecting organizational commitment and turnover intention among them. The main purpose of

this study is to develop a model illustrating relationship between HRM practices and, organizational commitment and turnover intention.

The findings indicate that HRM practices would have positive relationship with organizational commitment and negative relationship with turnover intention. It reveals that if ICT companies effectively perform HRM practices, ICT professionals will have strong commitment and lower intention to leave the company. It indicated that ICT companies can make their professionals more committed to the company by using effective HRM practices and have ICT professionals low turnover intention if they are provided with additive HRM practices working. Therefore, ICT industry should effectively adopt the HRM practices concerned with ICT professionals.

Out of the individual HRM practices, only three dimension of HRM practices (staffing, compensation and benefits, and performance appraisal) are significantly related to organizational commitment and two dimension of HRM practices (compensation and benefits, and performance appraisal) have significant relationship with turnover intention.

As a practical strategy for combating turnover, managers should retain and reinforce the current compensation and benefits practices, and uphold the existing style of performance measurement. These practices were found to be important in reducing turnover in ICT industry.

Second, findings indicated that compensation and benefit is the best HRM practice for ICT professionals to strengthen organizational commitment and to reduce turnover intention. ICT companies need to pay more attention on compensation and benefits systems to have higher commitment as well as less intention to leave.

According to the equity theory, individuals are dissatisfied with the amount of pay received less than they have expected. In the individuals' perceptions of fairness with compensation approach, some studies have suggested that pay satisfaction is related to organizational commitment. For example, Beauvais et al. (1991) found a positive and significant relationship between pay equity and organizational commitment.

Lane (1993) examined the relationship between benefit satisfaction, organizational commitment, and turnover intention. He found that benefit satisfaction was positively related to organizational commitment and negatively associated with turnover intention.

When competitors offered more money to ICT professionals, they were attracted; when employees felt that their organization was internally not providing internal benefits offered in other organizations, they often left their current employers.

A pay level that is too low in relation to the competition can lead to difficulties in attracting and retaining adequate numbers of qualified ICT professionals. Therefore, paying competitive and market-related rates are important for ICT industry to be committed and retain ICT professionals.

To be competitive, Myanmar ICT companies must be willing to pay the going rate in terms of pay level. If they skimp on this, they will be less likely to improve commitment and retain the ICT professionals they desire. Employee attraction and retention are affected by pay level. ICT companies that desire to make more committed, and attract and retain qualified ICT professionals must be willing and able to offer competitive pay.

Turnover is dependent on the current economic situation, the demand for product, and the quality of employees being hired. Externally, the organization must provide compensation that is seen as equitable in relation to the compensation provided to employees performing similar jobs in other organizations. If an employer does not provide compensation that is perceived as fair by its employees, that organization may have higher turnover of employees, more difficulty of recruiting qualified, rare and valuable skill employees resulting in lower overall organizational productivity. Greater loyalty, less turnover, and higher commitment to achieve organizational performance objectives are more likely if employees believe they are compensated fairly and will share in the growth of the organization. Therefore, paying rates below market can result in higher turnover or in having to hire less-qualified employees.

ICT professionals know and compare their pay and benefits with other ICT professionals' pay and benefits. It is recommended that market based pay should be

studied annually and factor this in the company wage structure. Other creative ways such as a “pay for performance” scheme, profit-sharing may also be considered to enhance compensation and benefits programme. Non-monetary benefits (such as flexible work schedules) are also another attractive benefit. ICT companies’ administration should investigate options for better meeting the salary expectations of ICT professionals. It is evident from this research that salary has an important influence on the organizational commitment, and also the intent to quit of newly hired ICT professionals. Fair compensation for work performed is an area that employers should give more attention.

With regard to performance appraisal, in this study, performance appraisal is positively associated with organizational commitment and negatively related to turnover intention indicating that ICT companies used performance appraisal information for making administrative decisions relating to promotions, fringes, layoffs, pay increases and to encourage performance improvement. Effective performance management activities will be able to motivate them to become better performers, leading to higher commitment and lower turnover intention. Hence, ICT industry should train their managers to be able to objectively and accurately evaluate the job performance of ICT professionals because ineffective performance appraisal and planning systems contribute to employees’ perceptions of unfairness and they were more likely to consider leaving the organization.

In this study, staffing practice was not a predictor of turnover intention. The results indicated that Myanmar ICT companies recruited and selected ICT professionals with required knowledge and competencies to perform particular jobs. HR managers should prepare human resource planning and forecasting to ensure that company can acquire the right amount and the right kind of professionals to deliver a particular level of output or services in the future.

Training and development was not correlated with organizational commitment as well as turnover intention indicating that ICT professionals may perceive that training and development programmes offered by companies are not important for them. Training

and development practices convey to the employees that the organization considers human resources to be a competitive advantage and that it is seeking to establish a long-term relationship with employees (Tsui et al. 1995). That signal is likely to be an important factor in retaining productive ICT professionals.

Emergent workers desire regular skill development and support. Retention efforts can be similar to those used for retaining volunteers. Extension educators and administrators should seek volunteer resources and literature on retaining volunteers. HR managers should redefine the training and development programme to meet the skills required by ICT professionals. Skills requirements for all ICT professionals are constantly changing, and hence becoming quickly obsolete. As such, there is a perpetual need for them to upgrade their professional skills.

ICT companies cannot compete the pay level with companies from abroad. Most of ICT professionals use to leave company and go abroad to work because they want to get higher salary. They are not used to change next job in locally.

ICT sector needs to update skills to face the challenge of the changing technology. Hence, training and development programmes need to be effective to update skills. In this study, findings present that training and development has no statistical significant association with organizational commitment and turnover intention. But ICT industry needs to change training and development programme to equip knowledge and skill ICT professionals require.

In terms of employee participation, in this study employee participation did not associated with organizational commitment as well as turnover intention indicating ICT professionals did not perceived about permitting them to participate in decision making. To be a successful ICT company it needs to devote resources toward empowering ICT professional to take increasing responsibility for their work and for decision making. It can reduce them conflict and stress, more commitment to goals, and better acceptance of a change.

To maximize commitment and reduce turnover intention of ICT professionals, investments in training and development are particularly important with regard to the *retention* of professionals. To recruit personnel is not sufficient, particularly in a situation of a labour shortage. Retention of scarce, often well qualified personnel becomes a crucial issue ('war for talent'). The retention strategy is affected by the company's time perspective for their personnel and the required professional qualification.

ICT companies needed to change their retention strategies. As the HRM perspective explains, compensation is commonly used to improve retention, along with better opportunities for promotion and transfer, recognition, training, and benefits.

IT professionals look for a compelling place to work and hence, an effective corporate IT retention strategy will consider the following essential building blocks:

- (1) Organizational commitment constitutes the primary predictor of turnover intentions. IT specialists grant a lot of importance for the alignment between their own values and those conveyed by management and they look for a work environment which will allow them to develop a strong feeling of belonging;
- (2) In the view of IT specialists, internal and external equity as well as competence development and opportunities for growth, recognition of individual contribution and good work and expanded job responsibilities form of the essence of compelling places to work. IT managers must therefore
 - i) stay informed on the going rates for various IT positions and make sure their staff feel they are adequately and fairly compensated for their work;
 - ii) make training a centerpiece of staff development and work closely with their staff on goal setting and career development;
 - iii) develop a culture where staff feel appreciated and rewarded; and
 - iv) empower IT staff and encourage innovation and creativity in daily work;
- (3) Information sharing, and work-life policies practices must be considered as complementary means to achieve lower IT turnover rates;
- (4) Compensation, though important, becomes a secondary concern when enterprises demonstrate their investment in long-term relationships. A retention

strategy that solely focuses on compensation conditions and benefits is not likely to favour commitment and loyalty of employees and offer any guarantee in satisfaction and retention. Further, such a strategy is not likely to compensate for the lack of professional recognition and chances of advancement and for a little stimulating IT job;

- (5) Finally, executives should articulate and adopt a dominant retention strategy for the overall IT organization. If needed, variations should be clearly identified and communicated fully within the organization.

Information technology is rapidly being infused into the financial, retail, manufacturing, service, entertainment, transportation, and other industries; and numerous ICT professionals are going to work for companies in those sectors. Thus a shortage of ICT professional affects not only the ICT industry, but virtually every sector of the Myanmar economy.

Less commitment of ICT professionals and the ICT skills shortage are major hurdle in Myanmar's future economic prosperity. It indicates that the consistent growth of the ICT industry and its role in the success of the economy. Government and industry heighten collaboration which is needed to have competitive advantage and to ease the skills shortages. In Myanmar ICT can no longer be viewed in isolation, and this requires a whole of government approach. Myanmar needs to adopt three key measures to ease the growing skills gap and maintain economic prosperity of the ICT sector:

- (1) Capping or maintaining migration levels
- (2) Increasing local graduate numbers of ICT professionals
- (3) Reducing the "brain drain" of ICT professionals migrating overseas for employment

Organizations interested in their growth, in highly committed work force and in reducing turnover intention must make effective use of HRM practices on a wider scale. It can generate higher returns. If an employee did not commit with the company, there are multiple effects. The first effect is the loss of that person's skills and knowledge. The second effect is the loss of productivity of the organization. The third is the financial impact of replacing that individual. The fourth is the impact on employee

morale; depending on the reason the employee left the company. HR manager might encourage ICT professionals to consider the organization as a family/in-group for which they might be more willing to exert effort. This might then be manifested in a greater intention to stay. Multinationals should therefore consider how to get their professionals to strongly identify with their organizational goals, missions and values.

In conclusion, this research investigated the impact of HRM practices on organizational commitment and turnover intention. The contribution of this study includes the empirical evidence that supports the HRM practices as the enabling factors that increase organizational commitment and reduce turnover intention. Some HRM practices omitted in the study have no direct relation with turnover intention but HR manager can perform to retain productive ICT professionals through these practices which can commit professionals to the company.

The managerial implications that stemmed from the empirical results suggest that management might be able to increase the level of commitment in the organization and to reduce the level of turnover intention by using effective HRM practices. ICT companies need to manage their HRM practices to align with today's dynamic conditions and the environment of constant changing technology, in order to retain productive ICT professionals.

5.4 Needs for Future Research

The study should be replicated in the other parts of the country to see if the results are consistent. This study was limited to 33 ICT companies in Yangon area. The findings are not generalizable, and there may be some regional differences from the respondents. Such potential differences should be explored.

In this study, different skill levels of ICT professional and their impact on different outcomes according to different types of ICT companies were ignored. It is needed to consider for future research.

The main objective of this study was to examine the relationship between only five HRM practices and two HR outcomes. Future study should consider other practices such

as employment security, work-life balance, sharing information, etc. Organizational commitment and turnover intention are only two of HR outcomes. Future research can be extended to cover more HR outcomes. Other factors like organizational citizenship behavior, job satisfaction, organizational culture, learning work behavior, organizational effectiveness, which is the expected outcomes of a perfect HRM practices bundle, can be studied in the ICT sector.

There is also a need for further research to identify differences in organizational commitment and turnover intention based on such organizational variables as size of company and type of company. Because technology plays a key role in the ICT industry, future research might touch on the impact of technology life-cycle stages in the organizational commitment and turnover intention of ICT professionals. ICT professionals soon become outdated unless they keep up with the latest in the technology market. The challenge for future research therefore is to investigate the other HRM enablers of learning work behavior.

Compensation and benefits should be explored in regard to the direct influence on intent to quit of newly hired employees. This research indicated that there was a significant relationship, but additional research in regard to the influence of salary levels on intent to quit should be explored.

Social Exchange Theory would be a good basis for additional study with ICT professionals to determine if organizational commitment is influenced by the perceived level of commitment from the organization to the employee. Perceived organizational support has been associated with turnover intention. Thesis conducted in this area should explore the commitment of the organization to the employee as perceived from the employees' perspective.

One of the limitations of this study is that it concentrates on HRM practices and demographic factors only to account for the organizational commitment and turnover intention among ICT professionals. It has often been asserted that organizational effectiveness can be improved only when HRM practices and policies are consistent or aligned with organizational environmental contingencies (Jackson and Schuler, 1995).

Future research could examine the influence of such contingency variables in order to clarify the role of HRM practices on individual and organizational outcomes.

A precise mechanism and / or channels of investments in a comprehensive HR strategy that lead to positive outcomes have not been definitively identified, the results imply that highly skilled professionals should not be managed as disposable productive resources but rather, should be considered as humans beings with specific needs and interests. They should therefore be granted fair rewards, opportunities to learn and innovate, recognition by peers and managers, attainment of new levels of responsibility and empowerment. In short, ICT industry need to bolster highly skilled professionals' sense of self worth by treating them as intellectual assets, not as operating expenses, and by trusting them and supporting their career experience. They can thus gain a competitive advantage by keeping the employees' skill and experience within the organization rather than outside it. This study may be helpful in policy formulations for ICT industry to retain potential workforce and to identify the organizational specific best HRM practices, which are both complementary and contributive towards achieving and exceeding the desired organizational performance.

Allen and Meyer (1996) defined organizational commitment as a psychological link between the employee and the employing organization that makes it less likely that the employee will voluntarily leave the organization. ICT industry is in a constant state of change; technological advances mean that ways of working are continually evolving. In such an environment it may be expected that the psychological contract would be different from that of a more stable industry. It would also be reasonable to expect that the nature of the contract in the ICT industry would be more susceptible to change than in other industries. There is wide variety of HRM practices. Some companies, aiming at relational contracts with their ICT professionals, will benefit from their long term investments in people (those applying "soft HRM") and thus will have low staff turnover. Other companies, aiming at more transactional contracts, are likely to use a different set of HRM practices. In these companies, low turnover and high commitment may not be the primary HRM objectives.

Future research agenda should contain aspects of at least the following questions:

1. What is the general state of art of HRM in the ICT industry?:

- Does HRM in the ICT industry have some specific characteristics absent in other industries?
- Which kind of practical rules and measurements do human resource managers in the ICT industry apply?
- Is there some kind of hidden knowledge about HRM in the industry, and can it be extracted?
- What is the extent and the role of virtual working arrangements in the industry?

2. What are the main features of successful HRM in the ICT industry?:

- How can the key information system professionals be retained and at the same time new professionals be attracted?
- In the fast-changing environment, how can the outside mobility be controlled?
- Can we improve employee retention and at the same time keep the staff career-resilient?
- According to Rousseau's model, what types of psychological contracts can be found from among ICT professionals?
- What kind of influence does the type of psychological contract as well as the nature of work in information professions have on employee commitment to organization, on career, on working attitudes, on working motivation?
- How can we maintain and renew the competencies let alone increase the productivity of ICT professionals?
- Are there particular ways to avoid burnout and work exhaustion amongst ICT professionals?

3. What are the practices that should not be included in the HRM bundle in the ICT industry?

- Are there general trends and policies in the overall HRM that do not hold in the industry in question?

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Appendix A

Questionnaire for Employer

I. Background of organization

1. Name of Organization

2. Address

3. Telephone/ E-mail

4. Organization Website

5. Organization Location Downtown
 MIT campus
 Other

6. Ownership of Business Sole proprietorship
 Partnership
 Company
 Other

7. Types of Organization (Please tick one or more)

Software development Hardware Telecommunication
IT training IT service

8. How many people are employed by your organization? Male Female

9. How many ICT professionals are employed by your organization? Male Female

Types of professionals

Hardware engineer	<input type="checkbox"/>	<input type="checkbox"/>
Software engineer	<input type="checkbox"/>	<input type="checkbox"/>
System analyst	<input type="checkbox"/>	<input type="checkbox"/>
Database administrator	<input type="checkbox"/>	<input type="checkbox"/>
Total	<input type="checkbox"/>	<input type="checkbox"/>

10. Firm age years

II. Profile of employer

1. Name
2. Gender Male Female..
3. Your education background (please circle your answer)
- a. ICT related degree
 - b. Non -ICT related degree
 - c. No degree

III. HRM practices (please circle your answers –one or more)

How do you adopt the following HRM practices?

a. Staffing process

- 1. Merit based staffing
- 2. Non-merit based staffing

b. Compensation and benefits

- 1. Market-based
- 2. Performance-based
- 3. Profit-based
- 4. comfortable and safety working condition
- 5. non-comfortable and safety working condition

c. Performance Appraisal

- 1. presence performance appraisal programme
- 2. absence performance appraisal programme

If you choose 1.

- 1. quantifiable result –oriented
- 2. growth and development oriented

d. Training and Development

- 1. providing training
- 2. not providing training

If you choose 1.

- 1. work-related training
- 2. periodically training
- 3. performance-based training
- 4. formal and systematic training
- 5. How do you acquire skill required in business? (please tick)
 - Hire from outside
 - Training
 - Recruitment from outside

e. Employee Participation

- 1. permit to participate to company issue
- 2. not permit to participate to company issue

If you choose 1.

- 1. setting goal, work schedule, safety standard and practices
- 2. benefit decision making
- 3. company successful
- 4. cost and quality matter

Thank you for completing this questionnaire.

Appendix B

ICT Professional Demographic Information

1. Name

2. Current job in your company

3. How long have you been working for the current company? (Please tick your tenure)

- <1 years
1-2 years
3-5 years
6-10 years
over 10 years

4. What is your current age? (Please tick your age group)

- 16-21 years
22-27 years
28-33 years
34-39 years
40-50 years
51-60 years
over 60 years

5. Please indicate your gender

Male Female

6. Your previous work experiences

	Job 1	Job 2	Job 3
Industry	-----	-----	-----
Type of job	-----	-----	-----
Position	-----	-----	-----
Service year	-----	-----	-----

7. Marital status

Single Divorced
Married Windowed

8. Education

ICT related	Graduate	<input type="checkbox"/>	Other	Graduate	<input type="checkbox"/>
	Post Graduate	<input type="checkbox"/>		Post Graduate	<input type="checkbox"/>
	Diploma	<input type="checkbox"/>		High School	<input type="checkbox"/>
	Certificate	<input type="checkbox"/>			

Appendix C

Questionnaire for ICT Professional

Section I: Human Resource Management Practices. Please indicate the extent of your agreement with the following statement on a 6- point scale. (Please circle your answer) 1 for strongly disagree, 2 for moderately disagree, 3 for slightly disagree, 4 for slightly agree, 5 for moderately agree and 6 for strongly agree.

Staffing

1	Great importance is placed on the whole staffing process in our firm.	1	2	3	4	5	6
2	Selected tests are used during the staffing process in this company.	1	2	3	4	5	6
3	The staffing process of the company is impartial.	1	2	3	4	5	6
4	All appointments in this organization are based on merit (i.e. the best person for the job is selected regardless of their personnel characteristics).	1	2	3	4	5	6

Compensation and Benefits

1	Salary and other benefits I get are comparable to the market.	1	2	3	4	5	6
2	Compensation is decided on my competence or ability.	1	2	3	4	5	6
3	My compensation is directly linked to my performance.	1	2	3	4	5	6
4	The company provides monetary rewards based on profit.	1	2	3	4	5	6
5	My health has not suffered as a result of working for this organization.	1	2	3	4	5	6
6	I am happy with assistance given by the company in terms of money, leave for exams, subscriptions.	1	2	3	4	5	6
7	Company provides comfortable working conditions. (space, light, seating arrangement, air condition, etc)	1	2	3	4	5	6
8	I always feel safe working here in this condition.	1	2	3	4	5	6

Performance Appraisal

1	Performance is measured on the basis of objectives.	1	2	3	4	5	6
2	Employees are allowed to formally communicate with supervisors regarding the appraisal results.	1	2	3	4	5	6
3	Appraisal system in my organization is growth and development oriented quantifiable results.	1	2	3	4	5	6
4	The objective of appraisal system is clear to me.	1	2	3	4	5	6
5	I have faith in the performance appraisal system.	1	2	3	4	5	6

Training and Development

1	My employer encourages me to extend my abilities	1	2	3	4	5	6
2	My work pays for any work-related training I want to undertake.	1	2	3	4	5	6
3	I get periodically new knowledge and skill to work in teams.	1	2	3	4	5	6
4	Training needs are identified based on our performance	1	2	3	4	5	6
5	The training process for us in this company is formal and systematically structured.	1	2	3	4	5	6
6	I receive new skill required from training.	1	2	3	4	5	6

Employee Participation

1	My employer encourages employee suggestions on setting goals, work schedule, safety standards and practices.	1	2	3	4	5	6
2	My employer asks my opinions about how I can improve my job.	1	2	3	4	5	6
3	I am allowed to participate in benefits decision making.	1	2	3	4	5	6
4	My employer asks my opinions about making the company successful.	1	2	3	4	5	6
5	I am allowed to make decisions related to cost and quality matters.	1	2	3	4	5	6
6	Manager acts on employee suggestions.	1	2	3	4	5	6

Section II: Organizational Commitment. Please indicate the extent of your agreement with the following statement on a 6- point scale. (Please circle your answer) 1 for strongly disagree, 2 for moderately disagree, 3 for slightly disagree, 4 for slightly agree, 5 for moderately agree and 6 for strongly agree.

1	I would be very happy to spend the rest of my career with this company.	1	2	3	4	5	6
2	I feel a strong sense of loyalty toward this company.	1	2	3	4	5	6
3	I really feel as if these company's problems are my own.	1	2	3	4	5	6
4	I feel a strong sense of "belonging" to my company.	1	2	3	4	5	6
5	For me this is the best of all possible organizations for which to work.	1	2	3	4	5	6
6	I find that my values and the organization's values are similar.	1	2	3	4	5	6
7	I talk up this organization to my friends as a great organization to work for.	1	2	3	4	5	6
8	I would accept almost any type of job assignment in order to keep working for this organization.	1	2	3	4	5	6
9	I really care about the fate of this company.	1	2	3	4	5	6
10	Even if the firm were not doing well financially, I would be reluctant to change to another employer.	1	2	3	4	5	6
11	The offer of a bit more money with another employer would not seriously make me think of changing my job.	1	2	3	4	5	6
12	If I got another offer for a better job else where I would not feel it was right to leave my company	1	2	3	4	5	6

Section III: Turnover Intention. Please indicate the extent of your agreement with the following statement on a 6- point scale. (Please circle your answer) 1 for strongly disagree, 2 for moderately disagree, 3 for slightly disagree, 4 for slightly agree, 5 for moderately agree and 6 for strongly agree.

1	As soon as I can find a better job, I will leave this center. .	1	2	3	4	5	6
2	I am actively looking for a job at another center.	1	2	3	4	5	6
3	I am seriously thinking of quitting my job.	1	2	3	4	5	6
4	I can see myself working for this organization several years from now.	1	2	3	4	5	6
5	I have a strong desire to work for this organization.	1	2	3	4	5	6

Appendix D

Definition of Key Terms

1. ICT

ICT refers to the merging of telecommunications, information and media technologies. (Robert Lan 2000)

“Information Technology is the term used to describe the items of equipment (hardware) and computer programmes (software) that allow us to access, retrieve, store, organize, manipulate and present information by electronic means. Communications Technologies is the term used to describe telecommunications equipment through which information can be sought, sent and accessed” (MoE, 2006).

ICT (information and communications technology) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite system and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. (European e-Competence Framework 1.0)

ICT as a means of communicating range from: radio (analogue, digital and high frequency two-way), television, telephone, fax to networked computers and the Internet. The new, more advanced forms of ICT include networked computers, satellite-sourced communication, wireless technology and the Internet. (OECD 2002)

ICT Sector according to Guislain, Ampah, Besancon, Niang and Serot (2005) is defined as an umbrella term that encompasses the range of technologies that facilitate the sharing of knowledge. These technologies include the Internet related technologies and telecommunications infrastructure. Martinez-Frais's (2003) definition of ICT is broader and includes any technologies (anything from 'old technologies' such as television to 'new technologies' such as cellular phones), using various types of equipment and software.

In the “Singapore Economy, November 1998”, the definition of ICT-Singapore (ICT-S) encompass the entire chain of ICT-related activities, ranging from manufacturing to the distribution of ICT products, as well as high-tech and knowledge-based industries such as internet service providers,

computer software development, publishing and computer schools. This study will apply ICT-S's definition as a working definition.

2. ICT Professional

ICT professionals are those who have capabilities required for researching, developing, designing, managing, producing, consulting, marketing, selling, integrating, installing, administering, maintaining, supporting and servicing ICT. (OECD 1995)

Computer specialists known as ICT professionals include computer scientists, database administrators, software engineers, network administrators, web developers, IT sales representatives and IT testers. (Adrian Schofield)

In all countries, ICT professionals, defined here as IT practitioners whose job involves “designing, developing, producing, installing, managing, maintaining or supporting systems for other people to use”, are employed by both ICT-suppliers (i.e., organizations whose primary purpose is IT supply) and ICT-users (i.e., organizations whose primary business is in another sector of the economy, such as telecommunications or manufacturing). With respect to ICT professionals themselves, common job titles are application developers, technical developers, software engineers or computer analysts/programmers (Dora SCHOLARIOS).

Job tasks and occupational titles used to describe these workers evolve rapidly and continually, reflecting new areas of specialization or changes in technology, as well as the preferences and practices of employers.

Myanmar Computer Professional Association (MCPA) defined that ICT professional is an ordinary member of MCPA who must:

- have three years experience as associate member and continues to work as a IT professional
- have two years experiences in IT professional job after taking computer degree from Myanmar Computer Universities.
- be able to support MCPA according to decisions at MCPA meetings.

ICT companies in Myanmar have their own definition of ICT professionals. In this study, companies' own definitions will be adopted as working definition.

3. ICT Industry

The ICT industry is increasing its share in the global economic activity as well as in the services and products markets. The providers of ICT goods and services are usually called the ICT industry.

(Numa Markee 1995)

The ICT industry consists of ICT manufacturing, ICT services, telecommunications and content production. In the field of content production, only the digital media is included in the ICT industry.

(OECD, 2000)

OECD focuses strictly on information technology and telecommunication industries. The OECD definition also includes manufacture of insulated wire and cable, television and radio receivers and instruments and appliances for measuring, checking, testing, navigating and other purposes, and wholesale of lighting equipment and electrical household appliances, among others.

The ICT industry in Myanmar has operated in some of five categories: hardware sales, software development, training, IT services and telecommunication. ICT industry in Myanmar comprises some companies by mixing of these categories. Group of ICT companies that have performed one or more line of five business categories is defined as ICT industry for this study.

4. Hardware Sales

Hardware sale companies sell computers and related accessories (i.e routers and hubs, wireless adaptors, and cables)

5. Software Development

Developing software is the design, implement and maintenance of software systems for an organization/client. Programmers utilize programming languages and their knowledge due to the versatility of this role.

6. IT Services

IT services mean resolving business problems for clients, advising on methods to improve company functionality. Specialists are responsible for installation and configuration of computer systems, detecting hardware and software problems, and solving technical issues.

7. Training

Computer training schools provide ICT professional courses concerning hardware and software. Some offer diploma and undergraduate courses affiliated to international ICT professional training institution.

8. Telecommunication

Telecommunication is the interaction between computer and communications equipment. These workers design voice and data communication systems, supervise the installation of the systems, and provide maintenance and other services to clients after the systems are installed. The growth of the Internet and the expansion of the World Wide Web (the graphical portion of the Internet) have generated a variety of occupations related to the design, development, and maintenance of Web sites and their servers.

Appendix E

Sample of ICT Companies

Hardware

KMD Co. Ltd.
Lucky Bird Group of Companies
Myanmar Computer Co. Ltd.
Myanmar Technology Zone Co. Ltd
Client Focus Technology Group
PACE Computer Systems
Access Spectrum Co. Ltd
Computer Technical Team Co. Ltd.
Myanmar Technology Gateway
Myanmar Technology Zone
T-Zone

Software

ACE Data Systems
Myanmar Credent Technology
Myanmar Information Technology Co. Ltd.
Gusto
Winner
BIZSOFT
iNTEGRA Systems
Myanmar's Net
MultiPoint

Training

R.S Computer Centre
Myanmar Computer Federation
Index Net Solutions
CompuMart
STI Education

IT service

Youth Computer Centre
Compute Tech Co. Ltd.
Global Technology Co. Ltd
Maze media Co. Ltd.
Inforithm-Maze

Telecommunication

Advanced Vision Co. Ltd.
Thein Min
Bosh Myanmar Agent

Appendix F

Regression Results for Analysis

1. Relationship between HRM Practices and Organizational Commitment

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.613 ^a	.376	.346	.5850

a. Predictors: (Constant), Project Mgr, gender, Software Engineer, Education, Age, EP, Staffing, PA, CB, TD

ANOVA ^c						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	42.667	10	4.267	12.466	.000 ^a
	Residual	70.852	207	.342		
	Total	113.520	217			

a. Predictors: (Constant), Project Mgr, Gender, Software Engineer, Education, Age, EP, Staffing, PA, CB, TD

b. Dependent Variable: OC

Coefficients ^a						
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.		
					B	Std. Error
1	(Constant)	1.542	.334		4.623	.000
	Age	.004	.050	.006	.085	.933
	Gender	.002	.084	.001	.022	.982
	Education	-.030	.076	-.023	-.396	.693
	Software Engineer	-.109	.120	-.052	-.912	.363
	Project Manager	.161	.129	.089	1.248	.213
	Staffing	.209	.050	.261	4.149	.000
	CB	.251	.077	.246	3.264	.001
	EP	.011	.056	.014	.193	.847
	TD	.063	.052	.093	1.211	.227
	PA	.134	.065	.161	2.057	.041

a. Dependent Variable: OC

2. Relationship between HRM Practices and Turnover Intention

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.467 ^a	.218	.180	1.0584

a. Predictors: (Constant), PA, Developer, Education, Gender, Staffing, Age, EP, Software Engineer, CB, TD

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.743	10	6.474	5.779	.000 ^a
	Residual	231.891	207	1.120		
	Total	296.635	217			

a. Predictors: (Constant), PA, Developer, Education, Gender, Staffing, Age, EP, Software Engineer, CB, TD

b. Dependent Variable: TI

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.744	.715		6.638	.000
	Age	.062	.090	.051	.687	.493
	Gender	.282	.152	.121	1.851	.066
	Education	.053	.138	.025	.385	.701
	Developer	.373	.233	.151	1.599	.111
	Software Engineer	.267	.280	.079	.951	.343
	Staffing	.076	.087	.061	.882	.379
	CB	-.674	.139	-.408	-4.860	.000
	EP	.073	.101	.060	.725	.470
	TD	.034	.095	.031	.355	.723
	PA	-.202	.118	-.150	-1.715	.088

a. Dependent Variable: TI

3. Relationship between Organizational Commitment and Turnover Intention

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.412 ^a	.170	.166	1.0679
a. Predictors: (Constant), OC				

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.303	1	50.303	44.109	.000 ^a
	Residual	246.331	216	1.140		
	Total	296.635	217			
a. Predictors: (Constant), OC						
b. Dependent Variable: TI						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.616	.460		12.204	.000
	OC	-.666	.100	-.412	-6.641	.000
a. Dependent Variable: TI						

4. Mediating Effect of Organizational Commitment on Relationship between HRM Practices and Turnover Intention without Organizational Commitment

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.439 ^a	.192	.181	1.0580
a. Predictors: (Constant), PA, Staffing, CB				

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.090	3	19.030	17.001	.000 ^a
	Residual	239.545	214	1.119		
	Total	296.635	217			
a. Predictors: (Constant), PA, Staffing, CB						
b. Dependent Variable: TI						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.775	.510		11.317	.000
	Staffing	.063	.084	.050	.747	.456
	CB	-.666	.129	-.403	-5.161	.000
	PA	-.111	.104	-.082	-1.068	.287
a. Dependent Variable: TI						

5. Mediating Effect of Organizational Commitment on Relationship between HRM Practices and Turnover Intention with Organizational Commitment

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.498 ^a	.248	.234	1.0231

a. Predictors: (Constant), OC, Staffing, PA, CB

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.683	4	18.421	17.598	.000 ^a
	Residual	222.952	213	1.047		
	Total	296.635	217			

a. Predictors: (Constant), OC, Staffing, PA, CB

b. Dependent Variable: TI

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.484	.525		12.360	.000
	Staffing	.162	.085	.129	1.910	.058
	CB	-.518	.130	-.313	-3.972	.000
	PA	-.035	.102	-.025	-.338	.736
	OC	-.479	.120	-.296	-3.981	.000

a. Dependent Variable: TI