

Impact of ICT on Human Resource Management Practices (A Review of Literature)

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Abstract— The objective of this study is to review some papers in the field of impact of Information and communication technology (ICT) in Human Resource Management (HRM) practices. Information and Communication Technology (ICT) is the process of sharing information by using all kinds of electronics devices like computers, telephones etc. ICT is an important tool for decision making and managing different managerial functions in the organizations. Information technologies have changed the entire process of operating a business process. Over the last decade ICT have been adopted by the HR department in different HR functions like recruitment, selection, training, performance management, and compensation functions as it contributes to the development and profitability of the organization by reducing costs, facilitating information flow and thereby helping the HR managers to take effective decisions and gain a competitive advantage. In the past few years ICT has been acting as an effective tool for organizational performance. The objective of ICT is to support creation, transfer and application of information related to human resources or employees in organizations. Thus, effective development and implementation of ICT (HRIS) requires a foundation in several rich literatures. This paper presents the functions, applications and various concepts of ICT (HRIS) with a focus on its potential role in an organization.

Keywords— ICT, HRIS, organizational development, information flow, decision making, cost saving.

I. INTRODUCTION

Today's organizations are facing a tough competition. In this globalization era every organizations wants to be the leader in the market. For That purpose all are trying to adopt new technologies for work efficiency and cost and time reduction. ICT Stands for "Information and Communication Technologies." ICT refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses mainly on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums.

Growing uses of ICT (Information communication technology) also helps HR professionals in every aspect of HR functions like recruitment, selection, training & development, performance appraisal and compensation and many more functions like data storing and payroll system and etc. HR managers must focus on these various challenges and attract, retain and nurture talented employee and execute innovative mechanisms of developing skills and competencies of human resources to prepare them to accept the emerging challenges. The HRM practices change from traditional HR functions to paperless work, databanks,

automating work, tracking system, E-recruitment, etc by using ICT.

II. RELATED WORK

Alwis (2010) defined Human Resource Information System (HRIS) as a computerized system used to collect, record, and store, analyze and retrieve data pertaining to organization's human resources. He also defines Human Resource Management System (HRMS) as a tool designed to ensure that the organization's human resources are recruited, selected, developed, employed, deployed, and supported effectively.

Rakib & Bhuiyaan, (2013) studied the use of Human Resource Information System in both the manufacturing sector and service sector. For this they used Simple Non Probability Sampling method and Sampling size 100. Data Collection done through Semi Structured Questionnaires and used correlation analysis for establishing relationship between variables. They found the result that Human Resource Information System (HRIS) have used for more strategic purpose because it do more faster than any other method with less time and with less manpower.

Mohmoud Khaled, (2014) in his paper “Human resource information systems and their impact on Human resource management strategies: A field study in Jordanian commercial Banks” explores the impact of HRIS on Human Resource Management strategies by using simple regression analysis found that HRIS had a significant effect at (p) on Human resource management strategies in Jordanian commercial Banks.

Muriithi, et al. (2014) in his paper “Effects of Human Resource Management Practices and firm performance in listed commercial Banks at Nairobi Securities Exchange” explores the factors affecting the success of HRIS adoption in the listed companies at the Nairobi Securities Exchange and how the use of HRIS strategically and positively impacts on firm performance

Elhazzam,(2015) in his paper “The effect of ICT on Human Resources Management Practices (case of number of organizations in southwest Algeria :Bechar city)explores the effect of ICT on HRM practices by using simple Regression Analysis found value of R2 for ICT is 0.61 and $f=126.872, p=000$ explain 61% of variance in Human Resource Management practices and therefore ICT was found to have significant and positive effect on Human resource management practices.

Adewoye (2012) in his paper “The Impact of Information Technology (IT) on Human Resource Management (HRM): Empirical evidence from Nigeria Banking Sector - Case Study of Selected Banks from Lagos State and Oyo State in South-West Nigeria” has mentioned that the impact of between IT on HRM and it lead to the emergence of HRMS. It merged all HRM activities and processes with the information technology field while the programming of data processing systems evolved into standardized routines and packages of enterprise resource planning software.

Walker (1999) states that an HRIS is a systematic procedure for collecting, storing, maintaining, retrieving and validating the data needed by an organization for its human resources, personnel activities and organization unit characteristics. It can support long-term planning in relation to manpower (Kovach et al., 2002) including supply and demand forecasts, staffing, separations and development with information on training program costs and work performance of trainee. It can also support compensation programs, salary forecasts, pay budgets, employee relations, contract negotiations etc. Communication and information technologies have added value to HR applications which helped in developing a human resource information system (HRIS).

Pinsonneault, 1993 observed that the use of IT in HRM in organizations helped a lot to human resource staffs to free

from routine job roles and enable them to concentrate on strategic planning in human resource developmentn in this globalization era.

Tansley and Watson (2000) observed that the organizational environments have become increasingly complex. Managers in these organizations face growing difficulties in coping with workforces as they are spread across a variety of countries, cultures and political systems. Managers can utilize IT as a tool in general as well as in human resourcing functions in particular to increase the capabilities of the organization.

Vohra et al. (2015) in his paper” Impact of Information and Communication Technology in HRM” study the Impact of Technology Advancement on Human Resource Performance, Challenges in human resource management from technological advancement and Importance of ICT in human resource performance for this he taken factor analysis and find conclusion that information communication technology improves the efficiency, innovation reduces the time help in easier functioning of the organisation. It improves the performance of the employee. It helps to reduce the work time.

Ejaz Ali et al. (2015) The objective of his study was to analyze the moderating impact of ERP module (HRIS/HCM) on the relationships between human resource management practices and organizational performance. Data were collected through structured questionnaire method after establishing reliability and validity. The SPSS were used to assess the model fitness, hypotheses testing and to establish validity of the instruments through Pearson Inter-correlation Matrix. A total 220 employees of 25 firms from corporate sector were sampled through simple random sampling technique. He found that HRM practices (selection, compensation) and HRIS have significant impact on organizational performance. The results further showed that HRIS moderated the relationships between selection, compensation and organizational performance.

Ngai, E.W. et al. (2004) present a comprehensive literature review of human resource information systems (HRIS) and to report the results of a survey on the implementation of HRIS in Hong Kong. A structured questionnaire was designed, pre-tested, modified, and used to capture data on a cross-section of HRIS users in Hong Kong. The questionnaire was pilot-tested by practicing HRIS consultants and by HR and MIS managers. Based on the feedback from the pilot-test, the questionnaire was modified and a final questionnaire was developed and mailed to companies in Hong Kong. Findings – Most Hong Kong industries perceived that the greatest benefits to the implementation of HRIS were the quick response and access to information that it brought, and the greatest barrier was

insufficient financial support. Moreover, there was a statistically significant difference between HRIS adopters and non-adopters, and between small, medium, and large companies, regarding some potential benefits and barriers to the implementation of HRIS.

David et al. (2013) in his paper named “Study of Human Resource Information System in Global Milieu” studied employees’ perception in order to explore the Information technology enabled human resource functions across the globe. The sample size was 68 employees from the organization with different business activities and regions. The study was exploratory in nature. A questionnaire method used for data collection. It produced alpha coefficient of .953 and validity coefficient of .952. The Kaiser- Meyer- Olkin measure of sampling adequacy resulted in 0.804 and further data was subjected to principal component Varimax rotation. The study revealed seven factors namely “Compensation”, “Overall Development”, “Efficiency”, “Reliable features”, “Motivation”, “Employee benefits”, “Commitment”. They found human resource information system (HRIS) practices will have a vital influence in this area and HRIS has become a key for developing and improving organizational effectiveness.

J. Anitha and M. Aruna,(2013) in their paper “Adoption of Human Resource Information System in Organisations” identify various variables that influence adoption of HRIS or any Information Systems through a thorough literature study and consolidate them under four major factors namely Technological, Organisational, Environmental and Psychological factors. Validating this model would help the organisations to understand the essential focus areas for successful adoption of HRIS. It visualises that though HRIS utility is in its infancy stage, the complexity and

Mamoudou,S., Joshi,G.P.,(2014), in their paper “Impact of Information Technology in Human Resources Management” give a brief overview about possibilities of IT usage in HR field for measuring and tracking human capital and using the HR information system.

Shawabkeh, (2014) examines the impact of (HRIS) on Human Resource Management Strategies in Jordanian Commercial Banks by gives a research model based on literature and then tests this model in (7) Jordanian Commercial Banks. Sample size was 185 persons from the higher and middle of management. By using simple regression analysis found that HRIS had a significant effect at level ($P \leq 0.05$) on Human Resource Management Strategies in Jordanian Commercial Banks.

Srivastav Shefali (2014) studied the importance of the Human Resource Information System in the current Scenario. She used Simple Random Sampling for her study

and the Sample Size was 50, she used Descriptive Statistics and Chi Square Test for data analysis. She found HRIS provides an organisation more flexibility administratively and strategically.

Khashman, (2016) explores the impact of human resource information system (HRIS) on organizational performance in Jordanian private hospitals; by examine the HRIS components like job analysis, recruitment, selection, performance appraisal applications, and communications have a significant impact on organizational performance like efficiency and effectiveness. The data was collected through questionnaire method. The population of the research included all private hospitals located in Amman city and the sample size of the research was 170 employees working in HR departments from the private hospitals. He found that there is a positive impact of the HRIS applications on organizational performance and of employees has positive attitudes towards all human resource information system applications.

Altarawneh and Shqaira, (2010) studied the extent to which public Jordanian universities have adopted Human Resource Information System (HRIS) and examine the HRIS uses, benefits and HRIS barriers in Jordanian universities. They constructed a structured questionnaire to get data from HRIS users in Jordanian universities. They found that by using HRIS quick work and quick access to information done. But there were some HRIS implementation barriers like the insufficient financial support, difficulty in changing the organization’s culture and lack of commitment from top managers.

Kundu and Kadian, (2010) studied the applications of HRIS in human resource management (HRM) in Indian companies. They found “technical and strategic HRM” and “performance and reward management” are the most important factors for HRIS applications. The most common application of HRIS in organizations working in India was found to be in “employee record”, and “pay roll” system. Also “technical and strategic HRM”, “performance and reward management” and “corporate communication” were also used in Indian companies. By the results of ANOVA they found that manufacturing and service companies differed significantly on all sophisticated HRIS applications and by Mean scores they got on all the sophisticated HRIS applications, service companies had significant edge over the manufacturing companies. Also Indian and multinational companies did not differ significantly on any of the HRIS applications.

Shahzadi and Lodhi ,(2014) studied the impact of Enterprise Resource Planning system implementation in Human Resource management practices .They used Convenient sampling method and sample size was 300 They

used Questionnaires method consist of different items related to ERP product, HRM activities and organizational productivity. They used Structural equation modelling and regression analysis for data analysis. They found the ERP implementation have negative impact on recruitment and selection and also not showing relation with compensation and benefits but having positive impact on training and development of employees.

Karanja, (2014) studied how ICT can make academic management of Kenyan public universities more effective and efficient and also find out the challenges that require to achieve this effectiveness through ICT. He found ICT has become an important tool in management of universities .As compared to private universities Public universities are lacking in some field of ICT uses in Kenya.

V. K. Jain (2014) studied the impact of ICT on human resource management practices. According to him Human Resource Management (HRM) is not limited to recruitment and training. It has become an inseparable part of every organization. ICT and HRM both are closely related to each other. ICT has significant impact on increasing the efficiency of recruitment, development and decision-making, maintenance, functions.

Khoualdi & Basahel, (2014) explored the benefits of using the SAP system to manage the human resource at the Saudi Electricity Company (SECO) and find out the challenges for implementation of SAP. They used employee feedback to find results. They used Pearson's Coefficient of Correlation and One-sample T-Test. They found that by using SAP all functions should be easy like faster data retrieval and getting data, reduced cost , speedy transaction, increasing customer satisfaction etc.

Shiri, (2012) in his paper "Effectiveness of Human Resource Information System on HR Functions of the Organization: A Cross Sectional Study" studied the effectiveness and the importance of the use of HRIS on the HR functions of an organization. He found HRIS, increases the efficiency of HR functions like payroll, time, and attendance, appraisal performance, recruiting, learning management, training system, performance record, employee self-service, scheduling, absence management, systems, styles, reduced HR cost, increased motivation of the HR personnel etc.

Wihan and Eileen (2016) in their study claim that positive impact of ICT are so high that it over shadow the negative impacts but they also state that quantity of communication increased but quality of conversation decreased.

Piabuo et al. (2017) in their paper "The impact of ICT on the efficiency of HRM in Cameroonian enterprises: Case of the Mobile telephone industry" study the impact of

Information and Communication Technology on the efficiency of Human Resource Management in the Cameroon mobile Telecommunication Sector. They used exploratory research design for the study and the sample size was 120.They used Pearson correlation coefficient was used to establish the relationship between the variables and regression analysis for establish the combined effect of study variables on the dependent variable. They found a significant positive relationship between the use of ICT in selection and recruitment, training and development, Human resource planning, evaluation and compensation and human resource management efficiency.

III. RESULTS AND DISCUSSION

To meet for cost savings, improved speed of service and faster information flow there is a need for better, faster and smarter use of ICT with human resource management. Usage of different software for the better transaction in different department reduces the time and energy .New software must be implemented in the organization to improve the performance of employees because work force is very much vital to the organization. For efficient managing of work force it must require new software. Day by day new roles are being added like Talent acquisition, competency mapping, newer appraisal systems like 360 degree feed forward, retention, contractual labour, compensation, employee engagements, rewards etc. So, newer software and ICT tools will must help the HR professional in these new assignments.

IV. CONCLUSION

ICT is very important in almost all aspects of our lives. Human Resource plays a very vital role for the organization for making constant growth. This asset should be handled with care. Like proper training, proper appraisals are to be conducted for retain good employees. ICT can increase the effectively and efficiency but it has some limit because system always behave as per the instruction set on the time of development. Dealing with Human resource should not be fully instruction based; there must be some human touch to differentiate between machine and the employees. For creating a value on Human Resource only dependence of system is not essential, interaction with them is also require. In spite of having lots of positive impact of ICT on HRM it can be recommended the all the organization should not depend only on technological tools but also consider human interaction. There is always a difference between man and the machine.

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