# An Evaluation and Empirical Analysis on the Importance of Human Resource Information Systems Planning For Achievements of HRIS

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Abstract – With the increasing effect of globalization and technology, organizations have started to use information systems in various functions and departments in the last decades. Human resources management is one of the departments that mostly use management information systems. HR information systems support activities such as identifying potential employees, maintaining complete records on existing employees and creating programs to develop employees' talents' and skills. HR systems help senior management to identify the manpower requirements in order to meet the organization's long term business plans and strategic goals.

Middle management uses human resources systems to monitor and analyze the recruitment, allocation and compensation of employees. Operational management uses HR systems to track the recruitment and placement of the employees. HRIS can also support various HR practices such as workforce planning, staffing, compensation programs, salary forecasts, pay budgets and labor/employee relations. In this research, HRIS perception and HRIS satisfaction questionnaires were applied to HR employees in order to assess the effectiveness and use of HRIS in organizations. 78 questionnaires were received from HR employees working in different sectors. The results of the research give valuable insights about the success and effectiveness of HRIS in organizations.

Over the last decade there has been a considerable increase in the number of organizations gathering, storing and analyzing information regarding their human resources through the use of Human Resource Information Systems (HRIS) software or other types of software which include HRIS functionality (Ball, 2001; Barron, Chhabra, Hanscome, & Henson, 2004; Hussain, Wallace, & Cornelius, 2007; Ngai & Wat, 2006). The growing adoption of HRIS by organizations combined with the increasing sophistication of this software, presents the Human Resource function with new challenges. On one hand the role of HR can be enhanced through the combination of improved access to metrics and the automation of existing administrative functions thus enabling HR to make a greater contribution at a strategic level.

In today's organizations Human Resource is considered as one of the key resources of business organizations. The transaction processing layer of MIS in human resource function deals with routine activities like attendance recording and payroll calculations. The operational level activities also include maintaining the employee records which is used as a basis for strategic layers. With the growing importance of human resource management and increasing size of the organizations, maintenance of employee related data and generating appropriate reports are the crucial aspects of any organization.

Therefore more and more organizations are adopting computer based human resource management systems (HRMS). This paper is an attempt to highlights the role of information systems in Human Resource Management and show how it helps in taking management decisions related to management function especially for the top management.

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#### INTRODUCTION

"A human resource information system (HRIS) is software containing a database that allows the entering, storage and manipulation of data regarding employees of a company. It allows for global visualization and access of important employee information."

Kirstie S. Ball (2001) explained the dearth of research in HRIS in their work by quoting that the gigantic information system related literature including its implementation, use and impact clarifies that it is healthy researched area but its implementation with human resource is a deserted. Initially personnel systems were developed to stockpile the records and reports allied with personnel administration, but with time call for efficacy increases and thus computerbased HRIS is developed (Martinsons, 1997). But just computer based HRIS in not sufficient and Sherman et al. (1998) supported this by citing that for long term strategic planning decisions a well designed HRIS aligned with HRD goals is the foremost management tool. Siriwal Tevavichulada (1997) discussed that initially HRIS was caretaker of employees as it stores and administers data of line department but now HRIS is not limited to storing; but includes too many irons in the fire like manpower planning, manpower demand and supply forecasting, job descriptions for both jobs and applicants, recruitment and selection, training and development, negotiations. grievance management etc (Kenneth A. Kovach and Charles E. Cathcart (1999) and also provides information essential to assist the functional manager in decision making that will be an add on in the realization of the unit's strategic goals and objectives (Hendrickson, 2003). This increasing information processing efficiency of HRIS makes it useful for any size organization (Brian E. Becker et al., 2001). But still there is a perception that HRIS are not "adding value" and the restricted way in which they are utilized is criticized (Carole Tansley and Tony Watson (2000)). The usage of HRIS depends on some factors as illustrated by Broderick and Boudreau (1992) that HRIS system usage is determined by human resources strategy, reciting a corresponding process between different strategies and different system practice. Beckers and Bsat (2002) avowed that the main obstruction in the implementation of a HRIS is the sky-scraping cost of setting up and maintaining a HRIS in line with Kovach and Cathcart (1999) who affirmed that a lack of funds and support of top management are the stumbling blocks in achieving the full potential of HRIS. Due to this obstacle in order to endorse the embracing of HRIS operations, primary it is necessary to make certain that bankers or organizations are agreeable to give their support for setting up a HRIS (E.W.T. Ngai, F.K.T. Wat, (2006)). Apart from these difficulties HRIS has various advantages and the most crucial is the employee retention as employees

Available online at <u>www.ignited.in</u> AN INTERNATIONALLY INDEXED PEER REVIEWED & REFEREED JOURNAL as themselves crucial for the organizations; it is also supported by Erik Beulen, (2009) as the author contended that an HRIS blunt the edge of staff attrition by providing HR officers with the information they need.

Human resource planning (HRP) is generally overlooked in most organizations as the importance of HRP is not acknowledged (Vareta, 2010). Cherian (2011) defined HRP as the process of forecasting the demand and supply human resource and recruiting the correct number of employees, with right skills (as per the job) as per the need of the organization.

The process of HRP is as follows:



Figure 1: Human Resource Planning Process

Organizations must treat information as any other resource or asset. It must be organized, managed and disseminated effectively for the information to exhibit quality. Within an organization, information flows in four basic directions as upward, downward, horizontal and outward/inward (Haag & Cummings, 2008). Taking into account that there is a huge amount of information flow in organizations, it will be possible to understand the importance of information systems in organizations.

The information systems field is arguably one of the fastest changing and dynamic of all the business processions because information technologies are among the most important tools for achieving business firms' key objectives. Until the mid-1950s, firms managed all their information flow with paper records. During the past 60 years, more and more business information and the flow of information among key business actors in the environment has been computerized. Businesses invest in information systems as a way to cope with and manage their internal production functions and to cope with the demands of key actors in their environments. Firms invest in information systems for the business objectives such as achieving operational excellence (productivity, efficiency, agility), developing new products and services, attaining customer intimacy and service, improving decision making, achieving competitive advantage and ensuring survival (Laudon & Laudon, 2009).

The last decade has seen a significant increase in the number of organizations gathering, storing and analyzing human resources data using Human Resource Information Systems (HRIS) (Ball, 2001; Barron et al., 2004; Hussain et al., 2007; Ngai et al., 2006). In this paper we show that the study of the impact of HRIS is of direct significance to the ongoing debate about the extent to which Human Resources (HR) can play a strategic role in the organization (Becker, Huselid, & Ulrich, 2001; Hewitt Associates, 2007; Huselid, 1995; Lawler & Mohrman, 2003; Sheehan, Holland, & De Cieri, 2006). Specifically, we examine the argument that through its capacity to deliver accurate and timely metrics, HRIS has the potential to assist the HR function in developing business strategy and thus enhancing organization performance (Barney & Wright, 1998; Broderick & Boudreau, 1992; Gueutal, 2003; Lawler, Levenson, & Boudreau, 2004; Lengnick-Hall & Moritz, 2003).

The Management Information System is a collection of men, tools, procedures and software to perform various business tasks at various levels in the organization. Many organizations have separate MIS departments which are involved in maintaining records, performing transactions, report generations and consolidation of the important information which will be supplied to the various levels of the management. MIS has three basic levels: operational, middle management and top management where the information is passed from bottom to top.

#### HUMAN RESOURCES INFORMATION SYSTEMS

Along with the upsurge of computerized management information systems (MIS) in industrialized countries' enterprises in the 1980s, HR functions increasingly started to deploy human resource information systems in their daily work. HRIS were primarily seen as MIS sub functions within HR areas intended to support the "planning, administration, decision making, and control activities of human resource management. During the 1990s, along with the adoption of more complex HR practices focused on a company's overall performance goal, HRIS correspondingly evolved into more sophisticated information expert systems

featuring analytical tools to support decision-making in managing human capital (Ostermann, Staudinger & Staudinger, 2009). Information technology in the past decade drastically changed the human resources function. Providing support for mainly administrative activities such as payroll and attendance management in the beginning, information technology today enhances many of the recruitment function's sub processes such as long and short-term candidate attraction, the generation, prescreening, and processing of applications or the contracting and on boarding of new hires. Online job advertisements on corporate web sites and internet job boards, online CV databases, different forms of electronic applications, applicant management systems, corporate skill databases, and IS supported workflows for the contracting phase are only few examples of the various ways by which information systems today support recruitment processes (Keim & Weitzel, 2009).

In HR planning process it is easier to follow workforce gaps, the quantity and quality of the labor force and to plan future workforce requirements with the help of HR knowledge systems (Dessler, 2005). HRIS can support long range planning with information for labor force planning and supply and demand forecast; staffing with information on equal employment, separations and applicant gualifications; and development with information on training programs, salary forecasts, pay budgets and labor/employee relations with information on contract negotiations and employee assistance needs (Shibly, 2011). Risk and security management is another crucial function which can be derived by HRIS by following private and highly sensitive individual data and multiplatform security aspects which are perhaps the most serious factors that need to be taken into consideration (Karakanian, 2000).

HRIS is defined as an "integrated system used to gather, store and analyze information regarding an organization's human resources' comprising of databases, computer applications, hardware and software necessary to collect, record, store, manage, deliver, present and manipulate data for human resources function" (Hendrickson, 2003). An HRIS can perform a number of functions from the simple storage and communication of information, to more complex transactions. As technology advances, the range of functions that an HRIS can undertake increases. Actually HRIS is directed towards the HR department itself (Ruël, Bondarouk & Looise, 2004), but the use of HRIS can provide a number of benefits not only to the HR function, but also line managers, and the wider organization (Parry, 2009). The use of HRIS has been advocated as an opportunity for human resource professionals to become strategic partners with top management. HRIS allow HR function to become more efficient and to provide better information for decision making (Beadles, Lowery & Johns, 2005).

The increased use of web technology to deliver HR will leave HR specialists more time for strategic decision

making and that outsourcing of people-management activities will liberate HR specialists to perform more strategic activities (Kulik & Perry, 2008). According to Ulrich (2007; 2009) as one of the strategic partners, the HR manager derives benefit from IHRS, to disseminate and execute the strategy within the organization. These systems enable employees to manage much of their own HR administrative work. They can take care of many routine transactions whenever they wish, because automated systems don't keep office hours.

In addition to their former operational role, HR professionals can also act as a competency manager by arranging the right people to the right positions in the right time with their new strategic architecture role (Gürol, Wolff & Ertemsir, 2010). HRIS is thought to contribute to overall business performance by fulfilling or at least supporting the tasks of data storage and retrieval, of serving as primary administrative support tools, of reporting and statistics as well as of program monitoring (Ostermann, Staudinger & Staudinger, 2009). HRIS plays an important role for any organization to effectively manage its human assets. Many organizations have adopted HRIS to assist their daily human resources operations. HRIS must align and satisfy the needs of the organization and its users in order to be successful (Noor & Razali, 2011).

#### HRIS APPLICATIONS

There are two primary points of origin for the computerbased applications performed by the HRIS. The first consists of personnel data, originally maintained in a hardcopy form by the HR unit. This is the Employee Master file, and it contains all of the important data concerning each employee. It is not uncommon for each employee record to contain one hundred or more data elements.

This personnel data is often supplemented with payroll data.

HR originally had responsibility for processing the firm's payroll, but that work has largely been shifted to the accounting department in most firms.

The second origin point consists of applications made necessary to meet the government reporting requirements. In order to satisfy legislation, firms began developing computer-based systems to maintain data on job applicants, pay characteristics and changes, and compensation and benefits, as well as data describing job functions,

The HRIS applications originating from both origin points were added without the benefit of any grand plan. The

large number of applications, combined with the fact that

they did not always fit together in a neat, logical package prompted several HR systems authorities, writing articles and books explaining the HRIS concept, to develop HRIS models. The models, existing in a graphic form supported by

a narrative, were intended to provide a structure that would make it easier to understand the concept and facilitate development and management of such systems. Some of the earlier model descriptions also had the task of educating HR personnel in the basics of computer processing.

Such a modeling approach had been followed in the marketing area, and was given much of the credit for the success of the marketing information system concept. A similar modeling approach seemed appropriate for HR.

#### LITERATURE REVIEW

The current generation of HRIS automate and devolve routine administrative and compliance functions traditionally performed by corporate HR departments and can facilitate the outsourcing of HR (Barron et al., 2004). In doing so, HRIS not only make it possible for organizations to significantly reduce the costs associated with HR delivery, but also to reassess the need for retaining internal HR capabilities. However, HRIS also provide HR professionals with opportunities to enhance their contribution to the strategic direction of the firm. First, by automating and devolving many routine HR tasks to line management, HRIS provide HR professionals with the time needed to direct their attention towards more business critical and strategic level tasks, such as leadership development and talent management (Lawler et al., 2003). Second HRIS provides an opportunity for HR to play a more strategic role, through their ability to generate metrics which can be used to support strategic decision making (Hendrickson, 2003; Lawler et al., 2004; Lengnick-Hall et al., 2003).

The existing literature on HRIS suggests that they have different impacts on HR across organizations, but provides little explanation for this variation. Early surveys suggested that HRIS were used predominantly to automate routine tasks and "to replace filing cabinets" (Martinsons, 1994). Ball (2001) concluded that HR had missed the strategic opportunity provided by HRIS. More recent research shows greater use of HRIS in support of strategic decision making by HR (Hussain et al., 2007). However, the extent to which HRIS is used in a strategic fashion differs across organizations, with the vast majority of organizations continuing to use HRIS simply to replace manual processing and to reduce costs (Bee & Bee, 2002; Brown, 2002).

Recent debates about technology and organization have highlighted the importance of social context and sought to develop frameworks which acknowledge both the material and social character of technologies including HRIS (Dery, Hall, & Wailes, 2006). Accordingly, theories which can be considered as 'social constructivist' can play an important role in the study of technology as they explicitly recognize that technologies, such as HRIS, can not be evaluated and analyzed without having an explicit understanding of the context of individuals and groups which consequently comprehend, interpret, use and engage with the technology (Grint & Woolgar, 1997; Orlikowski & Barley, 2001; Williams & Edge, 1996).

Social constructionist views offer insights into the implementation and use of HRIS in a number of ways. The social construction of technology (SCOT) approach challenges the idea that technologies and technological artifacts have a pre-given and fixed meaning and in its place argues that the process, design and selection of technologies are open and can be subjected to contestation (Pinch & Bijker, 1984). Thus a technology is seen to be characterized by 'interpretative flexibility' and various 'relevant social groups' who articulate and promote particular interpretations of it. This meaning, over time tends to become accepted and the interpretation of the technology stabilized (Dery et al., 2006).

In similar tradition to SCOT approaches, the technologiesin-practice approach endeavours to recognize the inability to separate the technology from surrounding social relations. Orlikowski (2000) conceives of technologies-inpractice as the structure that is enacted by users of a technology as they use the technology in recurrent ways. The important implications of this idea for the purposes of this research is the realization that it is only when individuals use the HRIS that the associated social practices will frame and determine the value that they attribute to it. Hence the process of using a technology involves users interacting with 'facilities' (such as the properties of the technology artefact), 'norms' (such as the protocols of using the technology), and 'interpretative schemes' (such as the skills, knowledge and the assumptions about the technology as might be positioned by the user) (Dery et al., 2006).

Both of these approaches are important and useful as they recognize that when considering relationships and experiences with technology, it is essential that social factors and previous experiences be considered. Therefore the opinions of respondents can only be understood in the context of individuals and groups comprehending, interpreting, using and engaging with the technologies (Dery et al., 2006).

Santosh Kumar Tripathy (2009) analyzed the HRIS of NALCO in his study. The author exhibits that the present HRIS of NALCO has improved the overall pace and competence of HR functions, but still needs reengineering. The study supports that HRIS is used for administrative purpose and not analytical purpose. To gain cost effectiveness in- house development of HRIS is decided but it was very time consuming process. In addition to this there are some other drawbacks that have to be surmounted to make the HRIS of NALCO more proficient.

Businesses are usually prepared to undertake changes provided that they see a

competitive advantage to doing so. However, many problems implementing companies have new technologies, including HRIS, due to a lack of sufficient capital and skills. Therefore, companies are reluctant to implement HRIS unless they are convinced of the benefits that this would bring to their organizations. The common benefits of HRIS frequently cited in studies included improved accuracy, the provision of timely and quick access to information, and the saving of costs (Lederer, 1984; Tetz, 1973; Wille and Hammond, 1981). Lederer (1984) discussed why the accuracy and timeliness of HRIS is very important in terms of operating, controlling, and planning activities in HR.

A number of studies related to HRIS can be found in various HR magazines. However many of them are conceptual or non-empirical studies. Based on a comprehensive search of the literature,. The earliest empirical study we found was conducted by Mathys and LaVan (1982). They conducted a survey to examine stages in the development of HRIS. Nearly 40 per cent of the surveyed organizations did not have a computerized HRIS. Other survey results similarly revealed a relatively low implementation of HRIS (Murdick Schuster, 1983). Later, DeSanctis (1986) also surveyed the status of HRIS and assessed its operation and relationships to the system management information (MIS) function. Martinsons (1994)compared the degree and sophistication in the use of IT for HRM between Canada and Hong Kong. On the one hand, the use of HRIS was less widespread in Hong Kong than in Canada. However he indicated that IT for HRM was applied more in Hong Kong than in Canada. In a recent study, Ball (2001) conducted a survey of the use of HRIS in smaller organizations. Her study and others such as Martinsons (1994) showed that smaller organizations are less likely to use HRIS.

Carole Tansley, Sue Newell, Hazel Williams, (2001) contended that the term "Greenfield" conceptualizes the break with employee relations practices on hand, or to

embark a philosophical break with the past. It is also emphasized that automate/informate/transformate potential of HR systems in the e-green field surroundings positively sways the nature and execution of HRM style philosophies, policies and practices. Not taking into concern the information sharing potential hamper the development of HR specialist's knowledge of the needs of their clients. In the "knowledge era" of the future this may provide evidence of a very pricey missed prospect.

Kenneth et. al. (2002) discussed various administrative and strategic advantages of HRIS. Various administrative advantages underlined by the author includes employee self service, interactive voice response etc. the author also propounded that businesses can leverage from the administrative cost savings, as well as strategic advantage in the course of information gathering, processing, and sharing.

Carole Tansley and Sue Newell, (2007) thrash out that the knowledge and behavior of project leadership influenced project team trust and social capital development and stressed on the exploitation of this knowledge in the milieu of a global HR information systems.

Prof. Dr. Anil C. Bhavsar (2011) discusses various advantages, applications and importance of HRIS. The author highlighted that "today's HRIS has the potential to be an enterprise wide decision support system that helps achieve both strategic and operational objectives".

MD. Sadique Shaikh (2012) developed three models in his research paper for HRIS designing namely basic HRIS design model, HRIS hexagonal and HRIS phase's model. The author emphasized on the payback of HRIS engineering and execution for all levels and domains of businesses; in the form of profitable strategic HR and related business plans and decision, to forecast and to control HR process inside and outside of business organization using HR-databases or HR-Knowledgebase's, which includes information related to human resource maintained and processed by HRIS.

### METHODOLOGY

The purpose of the study is to determine the relationship between the satisfaction of employees from HRIS and their perceptions of HRIS. Another aim of the study is to reveal the perceptions of employees for the dimensions that constitute HRIS and explain the points that should be developed. Also, it is aimed to reveal that if the HRIS perceptions of employees show difference or not according to their demographic qualifications (age, gender, seniority, position, education). The research has importance to determine the contribution and success of using HRIS for HR employees.

With the results of the research, it is possible to give valuable insights about the importance of using HRIS and the satisfaction level of HR employees from this system. There is a lack of empirical study in the related literature. By considering the need of empirical studies in this field, it is obvious that both the theoretical and empirical results of this research will give an important contribution to the related literature.

The items of HRIS perception and HRIS satisfaction scales were presented using a five-point Likert item as "1: strongly disagree" and "5: strongly agree". Data was analyzed by SPSS for Windows 18.0 package program. Firstly, Kolmogorov-Smirnov test was used to determine the normality of data and the results showed that data was distributed normally and it is possible to make parametric tests.

Cronbach alpha reliability value was computed in order to find the reliability of the scale. The reliability values are 0.961 for HRIS perception scale and 0.829 for HRIS satisfaction scale. The reliability values of both scales are high for researches in social sciences (Kalaycı, 2005).

Descriptive statistical analysis (arithmetic mean and standard deviation) and Pearson correlation test were used to determine the relationship between HRIS perception and HRIS satisfaction. Also, t-test and one-way ANOVA test were used to determine the differences according to demographic qualifications.

### CONCLUSION

HRIS is an integrated system used to gather, store and analyze information regarding an organization's human resources' comprising of databases, computer applications, hardware and software necessary to collect, record, store, manage, deliver, present and manipulate data for human resources function. The use of HRIS in organizations has various advantages for managers especially in decision making processes. In this study, the HRIS perception and HRIS satisfaction of HR employees were investigated. According to correlation analysis results, positive and high level relationships were found among all dimensions of HRIS and system quality, information quality and perceived ease of use which jointly constitute HRIS success. Also, it is found those employees' perceptions of HRIS show difference according to their position and satisfaction of employees from HRIS shows difference according to their position.

The results of the research reveal that HR employees perceive HRIS useful and they are satisfied with the

system. It was found that both HRIS perception and HRIS satisfaction of employees show difference according to position variable. This finding may have its source from the limited access of HRIS functions depending on the positions of employees. Thus future studies should also consider the relationships between the access limitations to information content and functions of HRIS and user satisfaction. Overall present research provides valuable insights into the study of HRIS success.

Initial findings from our four case studies suggest that although new or upgraded HRIS systems are being used to automate and devolve routine administrative and compliance functions traditionally performed by the HR function, the potential for this technology to be used in ways that contribute to the strategic direction of the organization is not being realized. More specifically, our results suggest that the opportunity to enhance HR's role as strategic partner as a result of the use of HRIS is being hindered by three main challenges. The first challenge relates to the ability to maintain the levels of senior management commitment and resources needed to implement and manage new or upgraded HRIS. The second concerns managing the complexity of the HRIS and its associated functionality. The third challenge stems from barriers associated with the acceptance of HRIS among key managers and employees along with the importance attached to managing the change processes associated with the implementation and introduction of the new or upgraded systems.

These challenges demonstrate that the material, functional characteristics of technologies such as HRIS are complex and make them difficult to introduce and operate. At the same time, and in line with a social constructionist approach to the study of technology each of the challenges illustrates that how and when a technology is used is also determined by the agency of its users and the social context within which it is adopted (Orlikowski et al., 2001). In sum, only through an appreciation of both the material and the social can a more informed understanding of the challenges that surround HRIS implementation and operation be obtained. In this respect, our findings are in contrast to the more technological deterministic view of earlier studies of HRIS that suggest that it is simply the technology itself which has implications for the changing role of HR.

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