PERCEPTION OF PROFESSIONALS TOWARDS EFFECTIVENESS OF HUMAN RESOURCE INFORMATION SYSTEM

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Abstract *Organisations are facing stiff market and other external pulls and pushes, thus HR will become vital source for managing future challenges. HRIS is an information system that makes use of computers to monitor, control, and influence the movement of human beings from the time they indicate their intention to join an organisation till the time they separate from it. The purpose of the HRIS is to provide service, in the form of accurate and timely information, to the clients of the system. As there are a variety of potential users of HR information, it may be used for strategic, tactical, and operational decision making (e.g., to plan for needed professionals in a merger); to avoid litigation (e.g., to identify discrimination problems in hiring); to evaluate programmes, policies, or practices (e.g., to evaluate the effectiveness of a training programme); and/or to support daily operations (e.g., to help managers monitor time and attendance of their professionals). However, in order to maximise HRIS success, researchers and practitioners have to know more about its underlying drivers. The study is undertaken looking to the importance of HRIS in the organisations. The paper identifies the factors of HRIS as perceived by professional users. This study is also an attempt to study the impact of designation on identified factors of Human Resource Information System (HRIS). The results of this research will increase researcher's comprehension on difference in factors that influence effectiveness of senior and middle-level professionals.*

Keywords: *HR Professionals, Human Resource Information System, Human Resource*

INTRODUCTION

The different functions of HR department include recruiting and selection (Chapman & Webster, 2003), compensation and benefits (Dulebohn & Marler, 2005), training and development (Teo, Soon, & Fedric, 2001), performance management (McLeod & DeSanctis, 1995) as well as HR planning (Hannon, Jelf, & Brandes, 1996). The first personnel system was made to store a tremendous amount of data for record keeping and reporting associated with personnel administration. In the course of time, the development of HR activities generated the design, development and the successful implementation of various computer-based HRIS (Martinsons, 1999). Human Resource Information System (HRIS) is a concept which utilizes the development of Information Technology (IT) for effective management of the Human Resource (HR) functions and applications. HRIS enables systematic procedure for collecting, storing, maintaining, and recovering data required by the organisations about their human resources, personnel activities and organisational characteristics (Al-Ibraheem & Ruel, 2009; Singh, Jindal, & Samim, 2011).

According to Jones (1998), the use of computer system, interactive electronic media and telecommunications networks is used to carry out the functions of human resources departments. An HRIS is not simply computer hardware and associated HR related software; it also includes people, forms, policies and procedures and data. Strohmeier & Kabst (2007) stated that Human Resource Information Systems (HRIS) can be understood as configurations of different interacting systems that aim at generating and delivering HR functionality in order to automate and informate HRM. Van der Linden and Parker (1998) suggest that HRIS help to organize the administrative and strategic variables that human resources function is responsible of. Shrivastava and Shaw (2003) also defined HRIS as any technology that serves to attract, hire, retain and maintain talent, support workforce administration and optimize workforce management.

Strohmeier and Kabst (2007) defined HRIS as "configurations of different interacting systems that aim at generating and delivering HR functionality in order to automate and informate HRM. Kavanagh, Gueutal, & Tannenbaum (1990) defined HRIS as a system used to acquire, store, manipulate, analyse, retrieve, and distribute information regarding an organisation's human resources. An HRIS is not simply computer hardware and associated HR -related software. Although an HRIS includes hardware and software, it also includes people, forms, policies and procedures, and

data" Thus, HRIS is defined as IS which store, manipulate, analyze, retrieve and distribute information on HR. They are also described as IS which collect, store, maintain retrieve and validate data needed for managing HR in organisations. The purpose of HRIS is to provide service, in the form of information to the clients or users of the system. The definitions also highlight the importance of technical issues such as data bases, computer applications, hardware and software when data of HR is collected, recorded, stored, managed, delivered, and presented (Tannenbaum, 1990; Kavanagh & Thite, 2009; Broderick & Boudreau, 1992; Kossek, Young, Gash, & Nichol, 1994; Haine & Petit, 1997; Kovach & Cathcart Jr., 1999; Ball, 2001). However, the profit of applying HRIS strongly depends on their appropriate development, implementation and permanent improvement as only properly developed, implemented and permanently improved HRIS will ascertain the success (Dennis, Wixom, & Roth, 2006; Kavanagh & Thite, 2009; Sommerville, 2007).

According to Kovach and Cathcart (1999), there are three major functional components of HRIS :

- Input function – It enters personnel information into the HRIS. Today, scanning technology permits scanning and storage of actual image of an original document, including signatures.
- Maintenance function – It updates and adds new data to the database after data is entered.
- Output function –In order to generate valuable output for computer users, HRIS processes output, makes necessary calculations, and formats the presentation.

The nature of HRIS varies among organisations in relation to their size. In small organisations, it tends to be informal whereas in large organisations, it is more formal and coordinated. Lengnick-Hall and Moritz (2003) prompt HRIS to be implemented at three different levels: publishing of information, automation of transactions, and transformation of HR into a strategic partner with the line business.

Kossek *et al.* (1994) stated that the role of HRIS in an organisation had become clearer but more research was needed. Strategic human resources applications should enable better decision – making and value creation of the human resources department (Boudreau & Ramstad, 2006). Implementing an effective HRIS can be sure - fire for HR to stay on the cutting edge in its bid to deliver more effective and streamlined service. HRIS can assist human resources in numerous ways, but particularly in their day-to-day duties by streamlining workflow processes through control processes, system interfaces and database validation (Sheikh, 2011). Implementation of HRIS is a crucial step since it is one of the main causes in system failure (Doherty &King, 2002; Fisher & Howell, 2004). However, Kansal (2006) stated that ERP software implementation is a socio-technical challenge and they require a different approach from other technology – driven innovations.

Literature Review

HRIS is a medium that helps HR professionals perform their job roles more effectively (Gallagher, 1986; Broderick & Boudreau, 1992). HRIS is seen to facilitate the provision of quality information to management for informed decision-making. It supports the provision of executive reports and summaries for senior management. HRIS show other diverse benefits such as the improvement of HR operations and management processes. According to Rangriz (2011), HRIS provides management with strategic data not only in recruitment and retention strategies, but also inmerging HRIS data into large-scale corporate strategy. The data collected from HRIS provides management with decision-making tool. Through proper HRM, firms are able to perform calculations that have effects on the business as a whole. Barut and Dogealioglu (2010) stated that socio-technical approach increases the performance of an HRIS in terms of specific success criteria such as efficiency, effectiveness, system usage, and technological quality.

The different benefits of HRIS are increased quality of decision making (Beckers & Bsat, 2002; Kavanaug & Thite, 2009; Lengnick-Hall & Lengnick-Hall, 2006),improvement of employee satisfaction by delivering HR services more quickly and accurately (Kavanaug & Thite, 2009),managing all HR information, recoding, and analysing employees and organisational information and documents, such as employee handbooks, emergency evacuation, and safety procedures (Fletcher, 2005; Lee, 2008; Singh *et al.*, 2011), to keep an accurate, complete and updated database that can be retrieved from reports and manuals (Gara, 2001). According to Armstrong (2008) the most significant feature of HRM is the importance attached to strategic integration, which flows from top management's vision and leadership, and which requires the full commitment of people to it.

Shaikh (2011, 2012) proposed a HRIS hexagonal model for engineering source which is based on six corners - organisational behavior, human relations/emotional, Internet, gui/hci, hris-dbms, and storage and query processing concepts. He states that the purpose of the HRIS is to provide service, in the form of accurate and timely information, to the clients of the system. As there are a variety of potential users of HR information, it may be used for strategic, tactical, and operational decision making (e.g., to plan for needed professionals in a merger); to avoid litigation (e.g., to identify discrimination problems in hiring); to evaluate programmes, policies, or practices (e.g., to evaluate the effectiveness of a training programme); and/or to support daily operations (e.g., to help managers monitor time and attendance of their professionals).

Krishnan and Singh (2006) explored the critical success factors and weaknesses in various stages of implementation of HRIS and found two basic problems: people in HR dept lack knowledge about HRIS and hence are not able to elucidate the requirements of the system and second is the lack of importance given to HR dept in organisations. Rangriz, Mehrabi, and Azadegan (2011) identified the major variables affecting of the HRIS within the Iran banking industry and examined the impact of HRIS on strategic decisions.

Though the advantages of HRIS are numerous, but, employee perception may vary depending upon his requirements from the system and the task he is managing. Bal, Bozkurt & Ertemsir (2012) in his study found that, Employees' perceptions of HRIS show difference according to their position. This study was undertaken to study the difference in perception of senior level and middle level professionals related to HRIS.

Research Methodology

The Study

The study is exploratory in nature and undertaken to provide insight into, and an understanding of and the usage of HRIS. The study is mainly based upon primary data and is used to explore factors influencing perception of professionals towards usage of HRIS and determine the effect of designation on the identified factors of HRIS as perceived by the senior and middle level professionals of the organisations.

The Sample

The sample of the study was constituted of 414 respondents working in different organisations, where HRIS was installed. Non-probability convenience sampling method was used to select the respondents.

The Tools for Data Collection

Primary data of the study was collected through a self-structured questionnaire. The questionnaire was designed following a wide review of the literature on HRIS. The questionnaire had some general questions regarding the demographics of professional user and consisted of 19 close ended items based on five point Likert scale (Strongly Agree – 5 to Strongly Disagree – 1). The answered questionnaire was collected from the respondents after conveying the purpose of the study in the presence of the author(s).

The Tools for Data Analysis

The analysis of collected data was done using ANOVA by Statistical Package for Social Science (SPSS 15.0) and MS Excel 2007.

Normality of variables is the basic assumption for independent sample t-test. Non-normally distributed variables (highly skewed or kurtotic variables, or variables with substantial outliers) can distort relationships and significance tests. In the present study the skewness and kurtosis value of all the variables were found to be lying between ±1 (Table 2).Thus, this shows that the distribution of all the variables is normal.

Homogeneity of variance in an underlying assumption for students' t-test. The powerful and commonly used test of this assumption is the Levene's test. Since p-value for all the variables was greater than .05 (see table 4), therefore we cannot reject the null hypothesis and conclude there is no significant difference between the two group means. Thus the homogeneity of variances assumption is satisfied.

A pilot study was undertaken on 140 respondents for determining factors of HRIS. Initially, item-total correlation was calculated for all 19 items to identify insignificant items not contributing towards perception of professionals regarding usage of HRIS. After first iteration, 1 item showed correlation values less than 0.196 (standard coefficient of correlation value for 100 or more respondents) and was thus found insignificant and was not considered for the analysis. Out of 19, overall reliability was evaluated for the scale by assessing the internal consistency of the remaining 18 items using Cronbach's Alpha. The instrument had a reliability of 0.83. Therefore all 18 items were accepted for the final scale and subjected to Principal Component Method of Factor Analysis using Varimax Rotation. As a result of factor analysis, 6 factors namely Effective Data Management (% of Var. =30.987), Enhanced Information (% of Var. =9.849), Effortless Information Navigation (% of Var. =8.506), Improved Productivity (% of Var. =7.351), Distinguished Training (% of Var. =7.012) and Supportive Coordination (% of Var. =5.806). The total percent of variance for factors was 69.511 and the Eigen values for each factor was more than one. The details of these factors tabularised with their item loads, Eigen values and percent of variances are shown in Table 1.

HYPOTHESES

Factor I –Effective Data Management

H_{01}: There is no significant difference in the perception of professionals of different designations (Senior-Level, Middle- Level) on the factor Effective Data Management of HRIS.

Factor II –Enhanced Information

H_{02}: There is no significant difference in the perception of professionals of different designations (Senior- Level, Middle- Level) on the factor Enhanced Information of HRIS.

For Factor III –Effortless Information Navigation

H_{03}: There is no significant difference in the perception of professionals of different designations (Senior- Level, Middle- Level) on the factor Effortless Information Navigation of HRIS.

For Factor IV –Improved Productivity

H_{04}: There is no significant difference in the perception of professionals of different designations (Senior- Level, Middle- Level) on the factor Improved Productivity of HRIS.

For Factor V –Distinguished Training

H_{05}: There is no significant difference in the perception of professionals of different designations (Senior- Level, Middle- Level) on the factor Distinguished Training of HRIS.

For Factor VI –Supportive Coordination

H_{06}: There is no significant difference in the perception of professionals of different designations (Senior- Level, Middle- Level) on the factor Supportive Coordination of HRIS.

Results and Discussions

Effective Data Management

6 items were involved in the factor which are -The system improves the data maintenance process, The system meet the desired expectations of the organisation, System provide us the accurate and correct data, The system helps in eliminating the duplication of work, There is a provision for generating standard set of data and reports, and Data Quality Audit was performed on a routine manner (Table 1). Besides, as shown in Table 5, the p value is 0.022 which is lower than 0.05 therefore null hypothesis $H_{01}$is rejected at 5% level of significance, which means there is a significant differences in perception of respondents belonging to senior-level and middle-level. This is true since people belonging to different designations use HRIS system differently, which gives the different output according to their requirement. Hence, perception of users does vary regarding the Effective Data Management factor of HRIS.

Enhanced Information

Three items were involved in the factor which include - The System improves the quality of information available, The system improves the ability to disseminate the information in the organisation, and There is a provision for generating standard set of data and reports(Table 1). As shown in Table 5, p value is 0.006 which is less than 0.05, therefore null hypothesis H_{02}isrejected at 5% level of significance, which means there is a significant difference between the perception of senior-level and middle-level professionals regarding the Enhanced Information factor of HRIS. This is true since people belonging to different designations require different type of information.

Effortless Information Navigation

There are 3items involved in the factor which are -Employee can access it directly to derive the desired information as per authority, The system shares information with other systems in the organisation, and System helped to reduce the time taken for tasks implementation (Table 1).

As shown in Table 5, the calculated value of t =0.001 which is lower than 0.05, therefore null hypothesis $H_{03}$is rejected at 5% level of significance, which means there is a significant difference between the perception of professionals of different designations with respect to effortless information navigation. This seems to be true because navigation facilities are different for different levels.

Improved Productivity

Three items were involved in the factor which include - The system promotes the organisational competitive advantage, The system affected the level of productivity in the organisation, and Updates are done on a routine basis to the system based on user feedback (Table 1). As shown in Table 5, p value is higher than 0.05, therefore null hypothesis H_{04} is not rejected at 5% level of significance, which means there is no significant difference between the perception of senior-level and middle-level professional users regarding the Improved Productivity factor of HRIS. This seems to be true since productivity is improving at an organisational level regardless of the designation.

Distinguished Training

Two items involved in the factor are – Training was provided for the usage of system and There was a manual or handbook for the system/policies (Table 1). It was also found that there was no significant difference between the perception of male and female professionals, professionals belonging to different age groups, male professionals belonging to different age groups and female professionals belonging to different age groups on the factor Distinguished Training of

HRIS. As shown in Table 5, p value is greater than 0.05, therefore null hypothesis H_{05} is accepted at 5% level of significance, which means there is no significant difference between the perception of professional users on the basis of designation regarding the Distinguished Training factor of HRIS because the training would have implemented at the same course of time with the same resource person.

Supportive Coordination

The only item involved in the factor was The system increases co-ordination between HR department & top administrators (Table 1). It was found that there was a significant difference between the perception of professionals belonging to different designations since the p value (0.027) was less than 0.05.This seems to be true because coordination with other departments greatly varies with the level of the designation.

Conclusion and Suggestions

HRIS refers to the systems and processes at the intersection between HRM (human resource management) and information technology. It is a system used to acquire, store, manipulate, analyze, retrieve, and distribute information regarding an organisations human resource. An integrated HRIS is a database shared by all HR functions that provide common language and integrates all HR services.

The research has identified six different factors of HRIS, so many software developers can consider this as a business idea. Since, the use of HRIS is the best choice for HR professionals to do their work and take strategic actions and decision making, developers should take more initiative for improving the quality of HRIS by supporting them with better user interface and guidance, thereby providing services that may be perceived effective by professionals. Besides, the study can be a good choice for many organisations to improve and update their existing system where the processes can be streamlined easily. This paper has provided an effect of designation on the perception of HRIS. The study showed that there was no significant difference between the perception of professionals belonging to different designations with respect to Distinguished Training and Improved Productivity while a significant difference was observed for the factors Effortless Information Navigation, Effective Data Management, Enhanced Information and Supportive Coordination.

Limitations

The study was limited to 414 respondents in total. The study could have become more effective if more respondent were approached. The research could have become better if more data could be collected from different places of world. Finally, the findings reported here are likely to be limited to the HRIS and may not be generalised to other systems. However, results of this study are providing a foundation for future studies on HRIS.

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ANNEXURES

Table 1: Results of Factor Analysis

Total Variance Explained									
No	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.578	30.987	30.987	5.578	30.987	30.987	2.867	15.93	15.93
2	1.773	9.849	40.836	1.773	9.849	40.836	2.319	12.885	28.814
3	1.531	8.506	49.342	1.531	8.506	49.342	2.174	12.079	40.893
4	1.323	7.351	56.694	1.323	7.351	56.694	1.882	10.453	51.346
5	1.262	7.012	63.705	1.262	7.012	63.705	1.85	10.279	61.625
6	1.045	5.806	69.511	1.045	5.806	69.511	1.42	7.886	69.511
7	0.865	4.804	74.315						
8	0.755	4.197	78.512						
9	0.717	3.983	82.495						
10	0.631	3.504	85.999						
11	0.514	2.855	88.854						
12	0.417	2.316	91.171						
13	0.405	2.248	93.419						
14	0.314	1.746	95.165						
15	0.309	1.718	96.883						
16	0.243	1.351	98.234						
17	0.182	1.011	99.245						
18	0.136	0.755	100						

Table 2 : Statistics

		Effective Data Management	Enhanced Information	Effortless Information Navigation	Improved Productivity	Distinguished Training	Supportive Coordination
N	Valid	414	414	414	414	414	414
Skewness		-.924	-.759	-.692	-.510	-.769	-.838
Std. Error of Skewness		.120	.120	.120	.120	.120	.120
Kurtosis		.375	-.256	-.071	-.026	-.573	-.003
Std. Error of Kurtosis		.239	.239	.239	.239	.239	.239

Table 3 : Descriptives

			N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
							Lower Bound	Upper Bound		
Effective Data Management		1	242	3.740220E0	.6714684	.0431636	3.655194	3.825247	1.6667	4.8000
2			3.893023E0	.6584507	.0502064	3.793919	3.992127	1.6667	4.8000	
172										
Total			3.803704E0	.6695476	.0329065	3.739019	3.868389	1.6667	4.8000	
414										
Enhanced Information		1	242	3.72417	.750936	.048272	3.62908	3.81926	2.125	5.000
2			3.92805	.735484	.056080	3.81735	4.03875	2.125	5.000	
172										
Total			3.80888	.750432	.036882	3.73638	3.88138	2.125	5.000	
414										
Effortless Information Navigation		1	242	3.63895	.619739	.039838	3.56047	3.71742	2.000	4.750
2			3.85320	.622346	.047453	3.75953	3.94687	2.000	4.750	
172										
Total			3.72796	.629016	.030914	3.66719	3.78873	2.000	4.750	
414										
Supportive Coordination		1	242	3.691460E0	.7844328	.0504252	3.592130	3.790791	2.0000	4.6667
			3.857558E0	.6961519	.0530811	3.752780	3.962337	2.0000	4.6667	
2										
172										
Total			3.760467E0	.7526237	.0369894	3.687756	3.833178	2.0000	4.6667	
414										
Improved Productivity		1	242	3.721488E0	.7086550	.0455541	3.631753	3.811223	1.8000	4.8000
2			3.686047E0	.6750634	.0514731	3.584442	3.787651	1.8000	4.8000	
172										
Total			3.706763E0	.6942885	.0341224	3.639688	3.773839	1.8000	4.8000	
414										
Distinguished Training			1	242	3.7065	.65242	.04194	3.6239	3.7891	2.20	4.73
	2	172	3.7718	.56998	.04346	3.6860	3.8576	2.20	4.73	
	Total	414	3.7336	.61963	.03045	3.6738	3.7935	2.20	4.73	

Table 4 : Test of Homogeneity of Variances

	Levene Statistic	F1	F2	Sig.
Effective Data Management	.597	1	412	.440
Enhanced Information	.591	1	412	.442
Effortless Information Navigation	.287	1	412	.592
Supportive Coordination	5.370	1	412	.071
Improved Productivity	.160	1	412	.689
Distinguished Training	7.505	1	412	.06

Table 5 : ANOVAResults

		Sum of Squares	df	Mean Square	F	Sig.
Effective Data Management	Between Groups	2.348	1	2.348	5.291	.022
	Within Groups	182.798	412	.444		
	Total	185.145	413			
Enhanced Information	Between Groups	4.179	1	4.179	7.539	.006
	Within Groups	228.401	412	.554		
	Total	232.581	413			
Effortless Information Navigation	Between Groups	4.615	1	4.615	11.974	.001
	Within Groups	158.793	412	.385		
	Total	163.408	413			
Supportive Coordination	Between Groups	2.774	1	2.774	4.944	.027
	Within Groups	231.167	412	.561		
	Total	233.941	413			
Improved Productivity	Between Groups	.126	1	.126	.262	.609
	Within Groups	198.955	412	.483		
	Total	199.081	413			
Distinguished Training	Between Groups	.429	1	.429	1.118	.291
	Within Groups	158.137	412	.384		
	Total	158.566	413			