

Factors Affecting the Effectiveness of HRIS (Human Resource Information System) :- An Empirical Study

Harshith.N

Assistant Professor Department of Health System Management Studies JSS Academy of Higher Education & Research, Mysuru 570015

Sujay Mugaloremutt Jayadeva*

Assistant Professor Department of Health System Management Studies (Faculty of Management Studies) JSS Academy of Higher Education & Research, Mysuru 570015 sujay15@gmail.com

Dr.Rachana Rajendra Shikhare

Associate Member Samshodhan Trust-Pune, Maharashtra

Surabhi Verma

Assistant Professor School of Nursing Galgotias University Greater Noida.

***Corresponding Author**

Abstract

The system and the process of the connection between human resource management and information technology are called “Human Resource Management System” or “Human Resource Information System”. It is also known as the software packages that deal with the requirements of Human Resources related to the planning, access to employee information, and employer regulatory compliance. The “Human Resource Information System” is an online solution or software for the entry of data, tracking of data, information of data required by Human Resources, management of payroll, and accounting functions within an organization or a business. It helps in merging Human Resource Management as a restraint and the basic activities and processes of Human Resource with the information technology. In present times, an essential instrument for business organization is “Human Resource Information Systems (HRIS)”. Sample of 226 people from the HR department of different organization were surveyed to know the factors and their impact on efficacy of HRIS (Human Resource Information System).

Keywords: Human Resource Information System (HRIS), Information Technology (IT), Human Resource (HR), IT Infrastructure, Management Support

Introduction

“Human Resource Information System” or “Human Resource Management System” is a system involving various practices wherein HRM interacts with the Information Technology (IT). As suggested by (Akai and Fishbein, 2012) this system helps in enhancing and increasing the efficiency of Human Resource Management. Overall, the system of Enterprise Resource Planning has one common database known as a universal database that includes information pooled from distinct applications. (Noutsa, Wamba, & Kamdjoug, 2016) studied that appropriate storage of data is provided by Human Resource Information

System. Moreover, it is pointed out Human Resource Information System helps in the enhancement of the total quality management, the loyalty of customers, and innovation. Konana and Balasubramanian (2015) found HRIS helps in increasing the perfection and efficacy in all the undertakings of Human Resources that includes payments and other beneficial programs, appointment and selecting new candidates, and performance appraisal, development of employees, etc. The system helps in reducing the level of work for every department and also make sure the better utilization of resources, the tasks are done easily and completed easily, and other

processes are uniform in the department for persistent workflow. The Human Resource department overall is assigned with the essential role of ensuring persistent management of patterns of work, tracking of resources, and ensuring all the practices are completed on timely basis. Solutions have been provided based on applications of Information Technology that are readily accessible and will assist the unit in automation of most of their daily work and other difficult jobs in the firm. The “Human Resource Management System” is essentially illuminated in numerous principal areas of functionality of Human Resource. The practices evaluate the employees of work and the time it takes for the accomplishment of the job. Rules and strategies related to the establishment and management of organizational costs accounting competencies are provided by the module (Huang, 2015). The module of payroll offers the guidelines related to computerization and association of the organization's payroll, computation of various sections of the payment practices like time and attendance of employees, work-related to statutory deduction and taxes, quality checks related to payment are completed on time, and periodically manner. Human Resource Information System also helps in getting the information. It also provides easy access and examination for the strategic decision-making in the organization. The Human Resource Information System helps in improving efficiency and producing reports that are useful in the decision-making process of the organization. (Wijethilaka, 2016) concludes in a study that technological elements, organizational factors along with environmental factors have a significant effect on the execution of Human Resource Information System. Technology and environment were considered essential elements of Human Resource Information System factors. This study demonstrated that “Human Resource Information System” has a guaranteed impact on the performance of the organization. A direct impact of environmental factors can be seen in the adaptation of Human Resource Information System. The study shows a successful impact of the Human Resource Information System on internal environmental factors and external environmental factors. The objective of the research has been achieved, and it is confirmed that the elements of internal environmental and external environment are

significant for success of “Human Resource Information System”.

Literature Review

Main purpose of implementing of Human Resource Information System in a company is to accomplish the competitive benefit in the market, making opponents stay away from the margin. Many organizations who have by now accepted Human Resource Information System are in a position of competition. According to **Hani (2013)**, many empirical researchers says that the pressure of competition is considered a powerful factor that force organization the adoption of Information technology and dispersion. In the meanwhile, as companies are moving towards the knowledge-based economy, the masses are growing continuously towards the reduction of Human Resource costs for the long-term also to play strategic role in firms. The company's structure must be recounted in facilitating or restraining the acceptance of innovation. It is revealed by few bounds like the centralization level of the organization and the level of specialization of employees within the form, and the enactment of diversified events inside the organization. In the stated boundary, the level of knowledge of employees is considered a strong element of criteria in the adoption of technology, particularly Human Resource Information System in the company. “Human Resource Information System”x must be set up by the organizations with high network entailments for the enhancement towards the providing of services and increasing the level of performance in the daily work that helps in cutting off the cost of operating the department of human resource and also helps in increasing the efficacy and efficiency of the human resource department. Every company must focus on establishing qualified and specialized team of Information Technology an organization must get prepare automatic performance indicators that would enable them the interaction with the Human Resource Information System in the logical and essential way as the beginning point for the successful acceptance of Human Resource Information System by the competency of employees (Khan, Hasan & Rubel, 2015). Technical portent becomes a defining feature that supports society of the modern world irrespective of its political class. Techniques have become detached. The force of technology evolving at a high rate is ultimately overtaking us and will

persistently surpass us in due time. The focus of people is moving the entire world. It is believed that the technical transformation of the present society are developed in a universal method for the improvement of the potential of man and thus evade any kind of destruction (**Igbaria and Cavaye, 2012**). All such declaration are related to the execution of “Human Resource Management Information System” in context that at time of implementation of the system, it is the responsibility of the organization to evaluate the power and to accept the technology for the successful implementation of the system.

Rahman, Qi & Jinnah (2016) found that social influence leaves a direct and indirect impact on the adoption of “Human Resource Information systems”. The indirect impact occurs from the intervening factor of behavioural intentions. A positive contribution to the type of strategies for the improvement of banking and financial services. There are both theoretical and managerial implications for this research study.

Kanake and Onyiego (2016) revealed about the approaches and the issues related to the costs in the execution of the Human Resource Information System. It is also observed that new system has acknowledged negative feedback from the workers as they struggled with the transformations from manual to the automated system because of various challenges and issues that they face in the usage of Human Resource Information System. Some of other challenges that are faced by the universities are a lack of competent workers, higher costs of maintenance, and organizations are not ready to change their traditions. The findings of the study say that the organization must have clear aims and objectives about what they need to achieve for the enhancement of the Human Resource Information System. An organization must obtain the system that would help in serving their requirements, ensuring that they have sufficient resources required for setting up of Human Resource Information System. The staff of the organization needs regular training that would make them more familiar with the technology and also guarantee Human Resource skilled workers can work easily and competently with the system. The functions of the Human Resource Information System make easy the activities of Human Resources by making information easily available, deposited, recovered, evaluates, and modernised. HRIS makes a potential effect on

the profile of the company, containment of costs, and improvement in the performance and production of the company. With the proper utilization and usage of the Human Resource Information System, fewer resources would be needed for conducting Human Resource activities, which would give more time to the professionals of Human Resource to concentrate on information and understanding at the strategic level (**Lee, Lee, & Kwon, 2015**).

Lee (2014) conducted a study on the behavior of technology with reference to the implementation of technology. The findings of the study say that Human Resource Management has evolved and played strategic importance that is compassionate towards the fundamental goal of the given organization. However, some of these systems are unable to meet the requirement of the organization and do not meeting up with the set standards. This means that organizations must make themselves ready with the best tools, instruments, and application of technology.

Fatuma (2014) studied about the factors recognized that influence the proper implementation of HRIS. In a survey, participants accepted the truth that the support of top level management, effective style of communication and training, assistance of Information and Communication Technology and Human Resources, and the involvement of users makes a huge impact on the execution of Human Resource Information Systems communication between the workers and their managers must be motivated.

Chapman & Webster (2013) examined the usage of technology in hiring and selection of new candidates in the organization, and evaluation of the huge number of job applications and selection of the best out of them for the organization. The findings of the study shows three critical problems tackled by the Human Resources is playing the role of a strategic partner. The first challenge is related to the assistance and assurance from the higher level management team and the requirement of resource for the up gradation of the system. Another challenge was the management of functions related to the system and its complications. The 3rd problem is the user acceptance particularly the supervisors and workers, and the management of the transformations that occurs after the

implementation of a new system and its up gradation.

Alam et al. (2016) explored the elements that influence the decisions of management for the adoption of HRIS. The outcome of the study observed five major factors, which are a support of top management, infrastructure, perceived cost, staff capabilities, and pressure of competition. Furthermore, the most considerable dimension is technology, humans, organization, and environment. Finally, the work observed the presence of considerable differences in all the factors among different groups adopting the technology. Human Resource Information Systems is a huge investment in micro as well as medium-scale enterprise. Though, the companies must contemplate the advantages of such investment beforehand its implementation. From the perspective of employees, Human Resource Information Systems brings various financial advantages with them in an arrangement of documentation, management of leaves, payroll system, etc. Additionally, the organizational size of the organization makes a direct effect in the acceptance of Human Resource Information Systems (**Taylor & Francis, 2017**). Looking at the level of globalization, organizations are spreading the benefits of Human Resource Information Systems beyond all the boundaries. With the usage of the internet today multinational companies are jumping from their home country to another country. At present time, the internet is creating a drastic transformation to the conventional functions of Human Resource. Due to technological advancement Human Resource Information Systems have become a universal practice. Implementing Human Resource Information Systems successfully is needed for the achievement of desired outcomes. Or else, it becomes a loss of time, cost, and the efforts of the organization. Ineffectiveness of Human Resource Information Systems leads to the inefficiencies. Effective Human Resource Information Systems would lead to the achievement of a competitive edge in the industry.

(Bullmash, 2015) defines Human Resource Information Systems as an integrated structure that collects, stores, and interprets data related to Human Resource in an organization. According to the core idea of many researchers, Human Resource Information Systems is an integral system that tracks and manages the

Human Resource functions of the organization in an effective and efficient manner.

Badhurudheen (2018) concluded that internal environment elements like skills of social technology of CEO, upper grade manager's support, centralism, and the experience of Human Resource Information Systems makes a positive influence.

Aldmour, Love, and Alzubi (2013) studied about the willingness refers to the availability of resources and the capability of effective execution of Human Resource Information Systems. Further, the author also mentioned that the willingness has a considerable significance on the execution of technology in the context of an organization. Competency shows the skills, knowledge, and capabilities that are relevant to the implementation of Human Resource Information Systems. Willingness of technology refers to the effective adaptation of Information Technology and the coordination in a business organizations. Companies are likely to execute IT based technology with the usage of specific Information Technology department encompassed by a highly competent workforce. Furthermore, knowledge of Information Technology needs today's business operations. Competency and organizational readiness are considered to be crucial factors of internal environment including sub-components of corporates, technical support, structure of employees, level of education, etc.

Networking of technology usually facilitates the Human Resource Information Systems to go beyond the local where internet assists in expanding the level of Human Resource Information Systems all over the globe. With the assistance of these platform, the data of employees can be tracked by managers at any place and at any time within a few minutes. The value of management information systems got increased with the concept of global village. The major benefits of Human Resource Information Systems are attaining easy information, advantage of cost, enhancement of efficiency, and accessing better service. Likewise, improvement in data quality, systematic processing, speed, and providing trusted and desired outcome (**Anitha & Aruna, 2015**).

Study's Objectives

1. To ascertain the factors that affects the effectiveness of HRIS (Human Resource Information System)
2. Knowing impact of different factors on effectiveness of HRIS (Human Resource Information System)

Research Methodology

Sample of 226 people from the HR department of different organization were surveyed to ascertain factors and their impact on effectiveness of HRIS (Human Resource Information System). A structured questionnaire and random sampling method was used to conduct the survey and collect the primary data. Factor analysis was used to analyse the data of present empirical study.

Findings

Table 1 is showing demographic details of the respondents. It is observed that total 226 people were surveyed that includes male (57.1%) and female (42.9%). The respondents are of different age groups like Below 36 yrs (34.0%), 36-43 yrs (37.2%) and rest (28.8%) are above 43 yrs of age. 22.6% of them are working as HR Director, 27.4% as HR Manager, 30.5% of the respondents are HRIS specialists and rest 19.5% are working on other positions in HR department of different organizations.

Table 1 Demographic Details

Variable	Respondent	%
Gender		
Male	129	57.1
Female	97	42.9
Total	226	100
Age		
Below 36 yrs	77	34.0
36-43 yrs	84	37.2
Above 43 yrs	65	28.8
Total	226	100
Designation		
HR Director	51	22.6
HR Manager	62	27.4
HRIS specialist	69	30.5
Others	44	19.5
Total	226	100

“Exploratory Factor Analysis”

“Table 2 KMO and Bartlett's Test”

“Kaiser-Meyer-Olkin Measure of Sampling Adequacy”		.887
“Bartlett's Test of Sphericity”	“Approx. Chi-Square”	3852.028
	“df”	190

	“Sig.”	.000
--	--------	------

In the table above (Table 2) KMO measure of sampling adequacy is found to be .887 and the value in the significant is below 0.05.

“Table 3 Total Variance Explained”

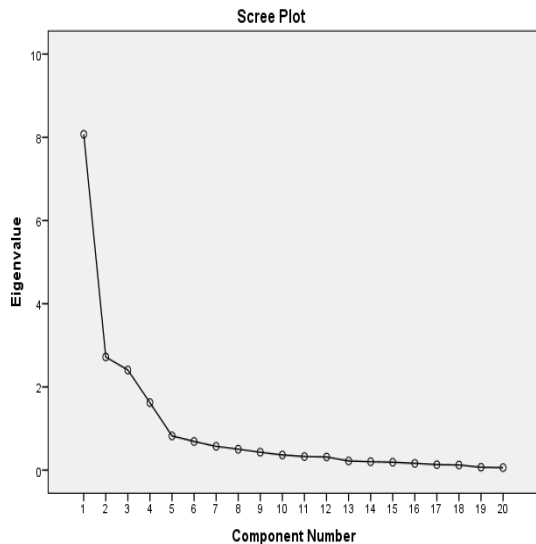
Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.073	40.366	40.366	4.501	22.506	22.506
2	2.719	13.596	53.962	3.844	19.221	41.727
3	2.406	12.032	65.993	3.461	17.305	59.032
4	1.622	8.111	74.105	3.015	15.073	74.105
5	.823	4.114	78.219			
6	.688	3.441	81.660			
7	.571	2.857	84.517			
8	.503	2.514	87.031			
9	.430	2.152	89.183			
10	.364	1.821	91.005			
11	.326	1.632	92.637			
12	.317	1.584	94.221			
13	.220	1.101	95.322			
14	.201	1.007	96.329			
15	.189	.946	97.275			
16	.163	.815	98.090			
17	.131	.654	98.744			
18	.123	.613	99.358			
19	.070	.348	99.706			

20	.059	.294	100.000			
----	------	------	---------	--	--	--

“Total Variance Explained” is demonstrated in table above (Table 3) where % of variance from factor 1-4 is shown as 22.506, 19.221, 17.305 and 15.073 percent respectively and all the four factors explain total 74.105 percent of the variance.

“Figure 1 Scree Plot”

Scree plot (Figure. 1) is graphical presentation of Eigen value found from “Total Variance Explained” (Table. 3). An elbow at 4 components is shown in scree plot which depicts that total 4 Factors have been extracted.



“Table 4 Factors, Factor Loading and Factor Reliability”

S. No.	Statements	Factor Loading	Factor Reliability
	IT Infrastructure		.956
1.	Good internet and networking system	.864	
2.	Proper telecommunication system enhances the effectiveness of HRIS	.863	
3.	Dedicated department to look after the IT issues in HRIS system	.857	
4.	Infrastructure capable to collect and analyse the business data using technology	.843	
5.	IT infrastructure to handle safety and privacy of the organization while working with HRIS	.801	
	Management support		.920
6.	Co-operation of top management and seniors	.887	
7.	Management support to provide training to staff	.883	
8.	Management initiative to adapt the new technology and system	.858	
9.	Committed management to implement to HRIS system	.852	
10.	Management strategies to use HRIS to make their decisions better	.639	
	Staff and their capability		.904
11.	Proper IT training is must for HRIS to work	.892	
12.	Time to time upgradation in IT skills for HRIS staff	.869	
13.	Staff’s willingness to adapt change in work flow	.860	
14.	Committed workforce to work through HRIS system	.674	
15.	Sufficient IT knowledge is essential to work with HRIS	.633	
	Expenditure and Market Competition		.789
16.	Organization ready to afford the expenses in implementation of HRIS	.790	

17.	Company's operational cost bearing capacity affects the effectiveness of HRIS	.723	
18.	Investment in HRIS implementation make the organization cost effective in future	.716	
19.	Organization's willingness to invest to get competitive advantage	.715	
20.	Operational excellence, development of new products, customer satisfaction etc. increase the effectiveness of HRIS	.678	

Development of the factors

IT Infrastructure is factor number one which includes the variables like good internet and networking system increase the effectiveness of HRIS, Proper telecommunication system enhances the effectiveness of HRIS, Dedicated department to look after the IT issues in HRIS system, Infrastructure capable to collect and analyse the business data using technology and IT infrastructure to handle safety and privacy of the organization while working with HRIS. Second factor is named as Management support which includes the variables like Co-operation of top management and seniors, Management support to provide training to staff, Management initiative to adapt the new technology and system, committed management to implement to HRIS system and Management strategies to use HRIS to make their decisions better. The third factor extracted is Staff and their capability which includes the variables like Proper IT training is must for HRIS to work, Time to time upgradation in IT skills for HRIS staff, Staff's willingness to adapt change in work flow, committed workforce to work through HRIS system and Sufficient IT knowledge is essential to work with HRIS. Fourth and the last factor is Expenditure and Market Competition which consist of variables like Organization ready to afford the expenses in implementation of HRIS, Company's operational cost bearing capacity affects the effectiveness of HRIS, Investment in HRIS implementation make the organization cost effective in future, Organization's willingness to invest to get competitive advantage and Operational excellence, development of new products, customer satisfaction etc. increase the effectiveness of HRIS.

Reliability of the factors

"Table 5 Reliability Statistics"

Cronbach's Alpha	Items
.911	20

Factor wise (1-4) reliability is shown in table 4 above as .956, .920, .904 and .789 respectively and total reliability statistics (table 5) is shown above which says that total reliability of all the 20 items is .911.

Conclusion

For the strategic contribution Human Resource Information Systems in present time has become a global Human Resource practice in the developed countries. Regardless of the fact that "Human Resource Information Systems" is an encouraging aspect and its adaption into banking and finance industries is still a challenge in developing countries. Successful adoption of Human Resource Information Systems involves manager and end user engagement. It is the responsibility of the managers to look around for the move of the competitors and the leaders of the market to get the understanding of the technological adoption that they are making in their organizations. Speedy adoption of Human Resource Information Systems would give an organization a similar competitive advantage in front of their competitors. At the present time the micro as well as medium level enterprises are rapidly adopting the Human Resource Information Systems and considering it as an investment. However, before the adoption and implementation of the technology, the organizations must consider the returns. Appropriate and proper application of Human Resource Information Systems helps companies in the achievement of their goals. Today "Human Resource Information Systems" has become an essential part of the organization.

The study concludes that IT infrastructure, Management support, Staff and their capability and Expenditure and market competition are the factors that all together affects the effectiveness of HRIS (Human Resource Management System). It is also found that there is a significant impact of all the factor like IT infrastructure, Management support, Staff and

their capability and Expenditure and market competition on effectiveness of HRIS (Human Resource Information System).

References

1. Konana, P., and Balasubramanian, S. (2015). The social-economic-psychological (SEP) model of technology adoption and usage: An application to online investing, *Decision Support Systems*, 39(3), 505-524.
2. Akai, I., and Fishbein, M. (2012). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice-Hall.
3. Huang, E. (2015). The acceptance of Staff-centric websites, *The Journal of Computer Information Systems*, 45(4), 75-83.
4. Hani, Rand., Love, Steve., & M. F. Zu'bi. (2013). Factors Influencing the Adoption of HRIS Applications: A Literature Review, *International Journal of Management & Business Studies*, 3(4), 15-16
5. Khan, A. R., Hasan, N. and Rubel (2015). Factors Affecting Organizations Adopting Human Resource Information Systems: A Study in Bangladesh, *IOSR Journal of Business and Management (IOSR-JBM)*, 17(11), 45-54.
6. Rahman, M. A., Qi, Xu & Jinnah, M. S. (2016). Factors affecting the adoption of HRIS by the Bangladeshi banking and financial sector, *Cogent Business & Management*, 3:1, 1262107, DOI: 10.1080/23311975.2016.1262107
7. Igbaria, M., and Cavaye, A. (2012). Personal computing acceptance factors in small firms: A structural equation model, *MIS Quarterly*, 21(3), 279-305.
8. Kanake and Onyiego (2016). Challenges and Strategies in the Implementation of Human Resource Information Systems in Kenyan Universities, *Journal of Research on Humanities and Social Sciences*, 6(18).
9. Lee, H., Lee, Y., and Kwon, D. (2015). The intention to use computerized reservation systems: The moderating effects of organizational support and supplier incentive, *Journal of Business Research*, 58(11), 1552-1561.
10. Lee, J. (2014). Discriminant analysis of technology adoption behaviour: A case of internet technologies in small business, *Journal of Computer Information Systems*, 44(4), 57-66.
11. Fatuma, M. M. (2014). Perceived factors influencing the implementation of human resource information system at Kenya revenue authority. Unpublished MBA Report, Master in Business Administration, School of Business, University of Nairobi
12. Chapman, D.S., & Webster, J. (2013). The use of technologies in the recruiting, screening, and selection processes for job candidates, *International Journal of Selection and Assessment*, 11(2/3), 113-120.
13. Alam, M. G. R., Masum, A. K. M., Beh, L-S, Hong, C. S. (2016). Critical Factors Influencing Decision to Adopt Human Resource Information System (HRIS) in Hospitals. *PLoS ONE*, 11(8): e0160366. doi:10.1371/journal.pone.0160366
14. Taylor, & Francis. (2017). Electronic HRM four decades of research on adoption and consequences, *The International Journal of Human Resource Management*, 1-51.
15. Bullmash, J. (2015). *Human Resources Management And Technology*. Canada: pearson.
16. Badhurudheen, A. S. (2018). The impact of internal environmental factors on the level of adoption of Human Resource Information System: the case of manufacturing companies in Western Province of Sri Lanka, *Journal of Information Systems & Information Technology*, 24-32.
17. Aldmour, R. H., Love, S., & Alzubi, Z. (2013). Factors influencing the adoption of HRIS applications: a literature review, *International Journal of Management & Business Studies*, 9-26.
18. Anitha, J., & Aruna, M. (2015). Transformation towards Human Resource Information Systems, *Journal of Management and Development Studies*, 1-21.
19. Wijethilaka, R. (2016). Factors Affecting the Extent of Adoption of Human Resource Information System (HRIS) in Banking Sector in Sri Lanka, 3rd International HRM Conference (247- 254). Sri Jayewardenepura: University of Sri Jayewardenepura.
20. Noutsu, F. A., Wamba, S. F., & Kamdjoug, J. R. (2016). Exploring factors affecting the adoption of HRIS in SMEs in a Developing Country: Evidence from Cameroon, *Journal of Catholic University of Central Africa*, 1-14.