

ICTMS-2013

Human Resource Information Systems (HRIS) in HR planning and development in mid to large sized organizations

Asha Nagendra ^{a*}, Mohit Deshpande ^b

^a*Symbiosis Institute of Management Studies, Symbiosis International University, Pune, India*

Abstract

The role of HRM has changed altogether from a traditional (popularly called personnel management) to a strategic one. Most medium and large scale organisations spend large amounts of money and reserves on HR software, but unfortunately many of them utilise it only for HR administrative purposes rather than for effective and efficient human resource planning (true HRP). This study aims to explore the extent of usage of a Human Resource Information System (HRIS) in mid to large sized organizations and the advantages they derive from the implementation of the same in the Human Resource Planning (HRP) sub-functions. HRIS outline the integration between Human Resource Management (HRM) and Information Technology (Gerardine deSanctis, 1986). Primary data was collected by means of questionnaires from 50 senior and junior HR executives/managers in three organizations in Pune. It was found that the greatest uses of HRIS were its contribution to the efficiency and effectiveness of HR planning through HRIS skills' inventory, HRIS training needs analysis, HRIS succession planning and HRIS labour demand and supply analysis. Results showed that identification of unfilled job positions accurately is the most frequently accepted HRIS feature. Organisations can record good HR planning efficiency and effectiveness if HRIS aligns with information system strategy and HR strategy. Organisations need to integrate HRIS functions with other business functions. The study revealed that HRIS needs to offer more intelligent capabilities to increase the effectiveness of HR planning.

© 2014 The Authors. Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).
Selection and peer-review under responsibility of the Organizing Committee of ICTMS-2013.

Keywords: Human Resources Information System; Human Resource Planning; Management Information system;

1. Introduction

Human Resource Management (HRM) in an organizational context is undergoing rapid change. There is a

* Corresponding author. Tel.: +0-000-000-0000 ; fax: +0-000-000-0000 .
E-mail address: asha.nagendra@sims.edu

paradigm shift where HRM is now moving from the 'silo' approach to an integrated approach in which the HR personnel interact on a continuous basis with project teams and line managers. The role of HRM has changed altogether from a traditional (popularly called personnel management) to a strategic one. Most medium and large scale organisations spend large amounts of money and reserves on HR software, but unfortunately many of them utilise it only for HR administrative purposes rather than for effective and efficient human resource planning (true HRP).

2. Objectives of the Study

To explore the functionality and contribution of HRIS in HRP through HR sub systems in medium and large sized organisations, the objectives of the study were:

1. To identify the contribution of HRIS recruiting subsystem to the workforce planning of an organisation
2. To investigate the contribution of HRIS subsystem to the training and development of the workforce of an organisation
3. To explore the overall contribution of HRIS to HR decision making and aligning of the HR strategy to the organization's strategy.

3. Review of Literature

Human Resource Information System (HRIS) is one of the most important Management Information Systems, which contributes to human resource administration functions of an organisation. Aptly described by Kavangah et al., (2007), HRIS is a computer system used to acquire, store, manipulate, analyse, retrieve and distribute information related to human resources. Besides hardware and software, it also includes people, forms, policies, procedures and data. Modern HRIS can help organisations by automating most HR planning functions. HRIS becomes an important strategic tool since it collects, manages and reports information for decision-making. Fully integrated organisational HRIS ought to interface with other systems enabling and enhancing the communication between departments such as payroll system with accountancy system. Since HRIS deals with employees' personal data, which is sensitive, it should ensure data security while transferring information. An HRIS is capable of identifying trends, evaluating and managing costs, comparing the organisation with other competitive organisations and issue reports. New HRIS trends seem to have an important effect on HR planning, embedding new technology with organisational goals and objectives. Enterprise Resource Planning System (ERP), when linked with the HRIS sub system, provides a distinct competitive advantage to an organisation over competitors. HRIS is classified into two types according to their usage: "unsophisticated" and "sophisticated". Payroll and benefits administration, employee absence records keeping electronically are listed as "unsophisticated". Use of IS in recruitment and selection, training and development, HR planning and performance appraisal, is classified as "sophisticated".

Pyburn (1983) is of the opinion that HRIS has become increasingly important to the successful implementation of corporate strategy. Wade and Tanriverdi (2006) also see it as a strategic organisational resource. Williams (1997) states that information system strategies could be random, inspirational or unarticulated thoughts or could be the result of careful analysis and detailed planning. However, his statement cannot be accepted as it is. The most intelligent option is to analyse the organisational long-term objectives and develop a strategy at corporate level rather than having random, inspirational or unarticulated thoughts about an HR strategy. An organisation can then align the HR strategy not only with corporate strategy but also with other strategies.

Human Resource Strategy: HR strategy aids the organisation to achieve strategic goals in the medium to long term. Thomas (1996) defined human resources strategy as a co-ordinated set of actions aimed at integrating an organisation's culture, organisation, people and systems (Figure1). He described HR strategy as the cohesion and consistency of a distinctive pattern of behaviour. Its relationship to the corporate strategy determines its effectiveness and success.

Systems can be manual as well as computerised processes used to carry out the tasks within the organisation. Human Resources Information Systems (HRIS) or Human Resources Management Systems (HRMS) play a leading role in computerised HR Systems. Therefore, HR strategy plan should not only be in line with corporative business plan but also with organisational Information Systems strategic plan.

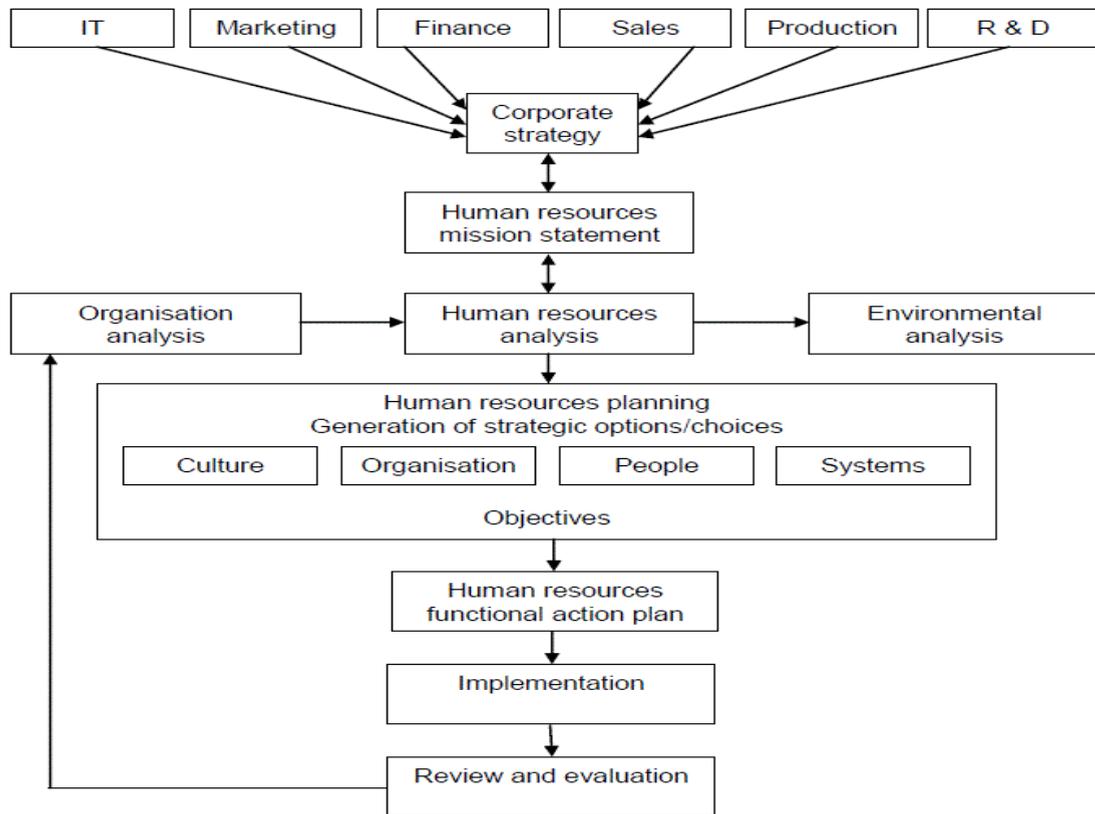


Figure 1: HR Strategy (Thomas, 1996)

Pattanayak (2000) identified four sub functions: determining the nature of the job to be filled, type of personal required, sources of recruitment and selection process. HRIS facilitates all four of those sub processes using its job analysis, skill inventory and E-recruitment features.

Research Methodology For data collection, the respondents were HR managers from mid to large sized organizations in Pune as they would have the maximum knowledge about their organization's Human Resource Information Systems, as compared to the actual users or the MIS department. Questionnaires were distributed to 50 senior and junior HR executives involved in both HR planning and HRIS. The questionnaire was based on three main sections i.e., role of HRIS in recruitment and selection, role of HRIS in training and development and common role of HRIS in recruiting and training and development.

4. Results

It was seen that, even though not at the very optimum, HRIS still plays a key and important role in helping with the Human Resource Planning and the Human Resource Training and Development functions. Its diverse uses are:

- Overall HRIS Recruiting Subsystem Utilization : The overall reaction to a blanket question about HRIS utilization in planning and selection in an organization was positive. Majority of respondents agreed that the utilization of HRIS is happening at a satisfactory level in their organization for human resource planning.
- Opinions Regarding HRIS Job Analysis: Most managers' opinions about whether their HRIS identifies unfilled job positions accurately were positive. This is in sync with the general consensus that HR information systems are very good with managing and manipulating raw data and even information. Also, in a majority of organizations, the HRIS itself analyses current job positions and the employees at each of

them. In this manner, an HRIS can identify workforce shortfalls, and thus supports the development of a recruitment plan.

- **Management of Skills Inventory by HRIS in an Organization:** HRIS does job analyses accurately. Another aspect of this is that an effective system should manage the skills inventory in its entirety in the organization. A majority of managers felt that this is being performed adequately, but there are fewer managers who feel that comprehensive reporting is being done.
- **HRIS and E-Recruiting:** It was learnt that companies do not make use of the e-recruitment module/subsystem of their HRIS at all in many cases. This is especially true regarding leveraging an employee's talents in the right place at the right time. This is one aspect that the researcher feels is not getting enough attention by HRIS developers.
- **HRIS's Role In Training and Development:** Managers' opinions are not as positive when it comes to their HRIS providing an intelligent insight into their organization's training needs and evaluation. Besides, as compared with human intervention, the outcome of a training needs analysis (TNA) is not as accurate when done by the HRIS of the organization. 50% managers agreed that the accuracy of an HRIS could be improved.

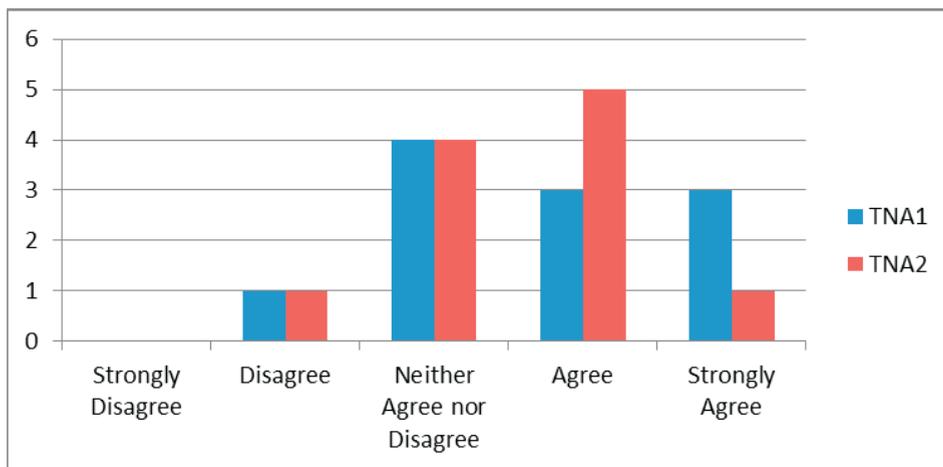


Figure 2: HRIS training needs analysis

- **HRIS and Evaluation of the Training Process:** There were a total of seven factors which were used to determine the usefulness of an HRIS to the training process in an organization. In most of these factors, managers have answered in the affirmative. This means that HRIS is definitely a useful tool to have to assist with the training process. The one area where an HRIS lacks is that it does not assist in fixing the budget of training and development programs accurately. But these opinions could be biased because there erroneous results could also be because of faulty inputs by the managers.
- **HRIS and Its Role In Succession Planning:** Since succession planning at mid-sized firms is still a relatively new concept, it was not expected that many managers would agree to the help rendered by the HRIS in this department. In fact, most managers felt that they themselves make better and faster decisions regarding successors, as compared to an automated HRIS. Once again, the data management capabilities of HRIS are brought to the fore, as it was felt that an HRIS identified specific key positions and minimized costs associated with succession planning.
- **Labour Demand & Supply and The Impact of HRIS:** Most managers could count on HRIS to do the job well. This is because, after all, this is what HRIS was built to do flawlessly. Also, forecast of human resources which are required is made that much easier with the help of an HRIS, as compared to without. The only thing that an HRIS lags behind in, is that it sometimes fails to identify human resources needed to achieve organizational goals.
- **HRIS Data Analysis And Decision-Making Capabilities:** Most managers felt that with an HRIS, they were better able to align themselves with organizational strategy and even with the organization's Information

System strategy. It was seen that managers were not of the opinion that an HRIS goes a long way in ensuring that the HR function as a whole identifies with corporate strategy.

Table 1: Responses to how HRIS supports labour demand and supply analysis

Item	% Agree
HRIS manages internal information within the organisation	63.64%
HRIS manages external information outside the organisation	72.73%
HRIS constantly analyses and match the demand for human resources	54.55%
HRIS forecasts supply of human resources	72.73%
HRIS estimates future human resources requirement of the organisation	63.64%
HRIS ensures organisation has right kind and numbers of employees at right place at right time	54.55%
HRIS identifies human resources need to achieve organisational goals	54.55%

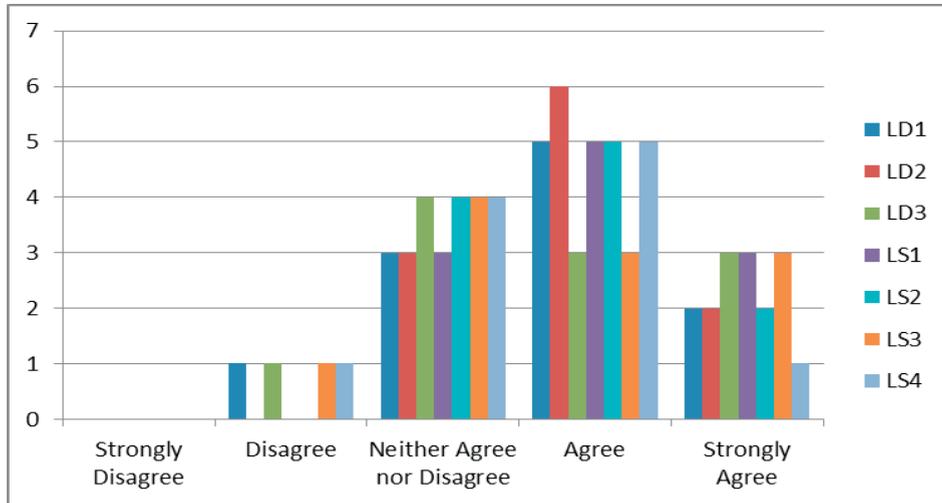


Figure 3: HRIS in labour demand and labour supply

- HRIS Decision Making and Data Analysis: HRIS decision-making process was measured using eleven factors (Table 20). All the respondents have responded to all eleven factors. Most respondents agree with the factors, where mode and median indicate four (4).

Table 2 : Responses to how HRIS helps in decision-making

Item	% Agree
HRIS provides an opportunity to become a strategic partner with top management	45.45%
Role of HRIS aligns with the organisation’s HR strategy	72.73%
Role of HRIS aligns with the organisation’s Information System strategy	54.55%
HRIS has improved the quality of my decisions	54.55%
Because of HRIS, I can better set my HR decision-making priorities better	45.45%
Through HRIS, more relevant information has become available to me for decision-making	45.45%
Through HRIS, the speed at which I analyse decisions has increased	63.64%
HRIS focuses on decisions made at a higher level by senior management and executives	54.55%
Future supply and demand of labour can be forecast using what-If analysis function of HRIS.	54.55%
HRIS simulation models support HR decision making.	54.55%
Goal-seeking method empowers HRIS decision making.	54.55%

6. Conclusion

Most organisations have e-recruiting facility but they do not use it fully since they have more faith in

traditional methods of recruiting. HRIS e-recruiting facility is used by only a minority of senior HR executives to recruit employees. Lack of top management support, funds, HR knowledge of system designers and HR solutions, are the main factors keeping organisations away from HRIS. Of all the HRIS subsystems used for recruitment and planning and training and development, the maximum and most useful contributions made by an HRIS system was when an HRIS is used to supplement the already existing functions in a positive manner. The results also show that identification of unfilled job positions accurately is the most frequently accepted HRIS feature. There is a high positive relation between HRIS job analysis and the effectiveness of HR planning. Most organisations observed the HRIS contribution to efficiency of HR planning through HRIS skill inventory, HRIS TNA, HRIS training program evaluation, HRIS succession planning, HRIS labour demand and supply analysis and decision-making. This study highlighted the need to offer more intelligent capabilities of HRIS to increase the effectiveness of HR planning.

Findings suggest that there is evidence linking HRIS recruiting subsystem to the workforce planning of mid to large sized organizations. It was found that higher usage of the training and development function of HRIS resulted in better training needs analysis and better predictability. However, it was seen that HRIS rarely helps in either predicting accurately or reducing the costs associated traditionally with the entire training process.

The study revealed that the relationship between increased usage of HRIS results in an increase in both effectiveness and efficiency of the organization. Therefore, the overall contribution of HRIS to the recruitment and planning functions, as well as to training is beyond doubt.

7. Recommendations

Research findings clearly show that senior HR executives are well aware that they can increase the efficiency of HR planning through HRIS, saving time and cost. Organisations should identify the strategic value and competitive advantage that they can gain through HRIS in HR planning. Contradicting situations need to be documented and discussed with the vendors. For example, even though most senior HR executives believe that managers find HRIS detailed training plan relevant to their needs, not many (senior HR executives) are convinced that employees find HRIS training programs relevant to their (employees') needs. Organisations should come to an agreement with the vendor on HRIS features when they invest on HRIS. Required subsystems need to be planned and ordered beforehand to avoid malfunctions due to incompatible infrastructure and higher upgrading cost. Organisations would record good HR planning efficiency and effectiveness if HRIS aligns with information system strategy and HR strategy. Organisations need to integrate HRIS functions with other business functions.

References

- Alvarez-Suescun, Emilio (2007) "Testing resource-based propositions about IS sourcing decisions". *Industrial Management and Data Systems*. 107 (6), 762-779. Full-text [online]. Emerald [Accessed on 21st January 2013].
- Al-Khayyat, Ridha (1998) "Training and development needs assessment: a practical model for partner institutes". *European Industrial Training*. 22(1), 18-27. Full-text [online]. Emerald [Accessed on 14th January 2013].
- Ball, K. S. (2001) "The use of human resource information systems: a survey. *Personnel Review*". 30, 677-693. Full-text [online]. Emerald [Accessed on 21st January 2013].
- Beadles, Nicholas, Lowery, Christopher M. and Johns, Kim (2005) "The Impact of Human Resource Information Systems: An Exploratory Study in the Public Sector". 5(4), 39-46. [Online], Available from www.iima.org/CIIMA/11%205.4_Beadles_39-46.pdf [Accessed on 29th December 2010].
- Beulen, Erik (2009) "The contribution of a global service provider's Human Resources Information System (HRIS) to staff retention in emerging markets: Comparing issues and implications in six developing countries". *Human Resources Information System*. 22(3), 270-288. Full-text [online]. Emerald [Accessed on 16th December 2012].
- Collier, Paul and Dixon, Rob (1995) "The evaluation and audit of management information systems". *Managerial Auditing*. 10(7), 25-32. Full-text [online]. Emerald [Accessed on 16th December 2012].
- Dessler, Gary (2005) *Human Resource Management: Strategic Human Resource Management and the HR Scorecard*, 10th edition. India, Prentice Hall.
- Lokhandwala, Shafiq (2009) "Making Tough (But Smart) Decisions In An Economic Downturn". 200. Brickstone Sq. Suite 303, Andover, MA 01810, 978-296-6600. [Online], Available from <http://www.hrmarketer.com/.../whitepaper.php?id=4868> [Accessed on 27th December 2010].
- Martin, Graeme and Reddington, Martin (2009) "Reconceptualising absorptive capacity to explain the e-enablement of the HR function (e-HR) in organizations". *Employee Relations*. 31(5), 515-537, Full-text [online]. Emerald [Accessed on 21st December 2012].
- McLeod, Raymond Jr. and Anctis, Gerardine DeS (1995) "A Resource-Flow Model Of The Human Resource Information System". *Information Technology Management*. 6(3). 20th December 2010. Available from: <http://jitm.ubalt.edu/VI-3/article1.pdf> [Accessed 20th December 2012].
- McLeod, R. and Schell, G. P. (1998) *Management Information Systems: Human Resource Information Systems*. 10th edition. India, Prentice-Hall Publishers.

- Morley, Michael J., Gunnigle, Patrick, O'Sullivan, Michelle and Collings, David G. (2006) "New directions in the roles and responsibilities of the HRM function". *Personnel Review*. 35(6), 609-617. Full-text [online]. Emerald [Accessed on 12th January 2013].
- Ngai, E.W.T. and Wat F.K.T. (2006) "Human resource information systems: a review and empirical analysis". *Human Resource Information Systems*. 35(3), 297-314. Full-text [online]. Emerald [Accessed on 21st January 2013].
- Panayotopoulou, Leda, Vakola, Maria and Galanaki, Eleanna (2005) "E-HR adoption and the role of HRM: evidence from Greece". *Personnel Review*. 36(2), 277-294. Full-text [online]. Emerald [Accessed on 13th January 2013].
- Pyburn, Philip J. (1983) "Linking the MIS Plan with Corporate Strategy: An Exploratory Study". *MIS Quarterly*. 1-13. Full-text [online]. Academic Search Premier, EBSCOhost [Accessed on 12th January 2010].
- Suescun, Emilio (2007) "Testing resource-based propositions about IS sourcing decisions". *Industrial Management and Data Systems*. 107 (6), 762-779. Full-text [online]. Emerald [Accessed on 21st January 2013].
- Ruel, Huub J.M., Bondarouk, Tanya V. and Velde, Mandy Van der (2007) "The contribution of e-HRM to HRM effectiveness: Results from a quantitative study in a Dutch Ministry". *Employee Relations*. 29(3), 280-219. Full-text [online]. Emerald [Accessed on 21st January 2010].
- Sekaran, Uma (2003) *Research Methods for Business, A skill Building Approach*, 4th edition, John Wiley: India.
- Tansley, Carole, Newell, Sue and Williams, Hazel (2001) "Effecting HRM-style practices through an integrated human resource information system: An e-greenfield site?". *Personnel Review*. 30(3), 351-370. Full-text [online]. Emerald [Accessed on 22nd December 2012].
- Tansley, Carole and Newell, Sue (2006) "Project social capital, leadership and trust: A study of human resource information systems development". *Managerial Psychology*. 22(4), 350-365. Full-text [online]. Emerald [Accessed:13th Jan 2013].
- Tanriverdi, Hüseyin (2006) "Performance Effects of Information Technology Synergies In Multibusiness Firms". *MIS Quarterly*. 30(1), 57-77. Full-text [online]. Academic Search Premier, EBSCOhost [Accessed on 12th January 2013].
- Teo, Thompson S.H., Lim, Ghee Soon and Fedric, Sherin Ann (2007) "The adoption and diffusion of human resources information systems in Singapore". *Human Resources*. 45, 44-62. Full-text [online]. SAGE [Accessed on 20th December 2012].
- Thomas, Mark A. (1996) "What is a human resources strategy?". *Healthy Manpower Management*. 22(2), 4-11. Full-text [online]. Emerald [Accessed on 6th Jan 2013].
- Yadapadithaya, P.S. (2001) "Evaluating corporate training and development: an Indian experience. *Training and Development*". 5(4), 261-273. Blackwell Publishers [Accessed on 5th December 2010].