

A Comparative Study on the Usage of HRIS in the IT/ITES, Services, and Manufacturing Sectors in the Indian Scenario

* *Sanjay Srivastava*

** *Teena Bagga*

Abstract

Information systems have grown as an integral part of every business process in an organization, be it a large or small organization. Human resource information system (HRIS) forms an integration between human resource management (HRM) and information technology (IT). Its usage has aided HR to shed its administrative burden to a great extent. The primary purpose of this study is to understand the HRIS usage in various functionalities of the HR department in the Indian scenario. The data was collected through a self-administered questionnaire from 269 organizations; the respondents were IT and HR managers. The study compares the usage level of HRIS among the three major sectors in India, that is, IT/ITES, services, and manufacturing sectors. In addition, this study also explores the differences between large and SME organizations under these sectors. Independent *t*-test and ANOVA were used for drawing these comparisons. The results show the variation in the usage of HRIS features among the different groups. In addition, a massive gap was found to be evident in the usage of HRIS, which can be tapped by the HRIS software providers for business development.

Keywords: information system, human resource, human resource information system, skill-mapping, succession planning, application tracking, recruitments/job posting, goal setting & tracking, performance appraisal, training need analysis and training evaluation, compensation management

JEL Classification : C88, L86, M15, O15

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The role of information technology (IT) is constantly evolving, and it has changed considerably from the days when information technology was merely referred to as “data processing”. Today, organizations differentiate themselves from competitors by leveraging IT for their competitive advantage. These days, technology has created new alternatives for the search of information, which has influenced the way information system users make decisions. In fact, with many businesses, the survival and the ability to achieve strategic business goals are difficult without the extensive use of information technology based automated information systems. They are used almost in every functional area and business processes of an organization these days. The use of technology has reduced the amount of time the HR staff has to spend on operational activities, thus freeing up their time to spend on strategic activities to gain competitive advantage.

Human Resource Information Systems (HRIS)

The human resource information systems (HRIS) forms an integration between human resource management (HRM) and information technology (IT). Kavanagh, Gueutal, and Tannenbaum (1990) defined HRIS as a “system used to acquire, store, manipulate, analyze, retrieve, and distribute information regarding an organization's human resources. An HRIS is not simply computer hardware and associated HR-related software;

* *Professor (Organizational Behaviour) and Dean - Examination & FMS, Amity University, Amity University Campus, Noida - 201 303, Uttar Pradesh.*

** *Assistant Professor and Programme Coordinator - MBA, Amity Business School, Amity University Campus, Noida - 201 303, Uttar Pradesh. Email : tbagga@amity.edu*

it also includes people, forms, policies and procedures, and data” (p. 29). Noe Dobrea, Poulet, and Malin (2008) also described HRIS as a computer system used to acquire, store, manipulate, analyze, retrieve, and distribute information related to human resources. Hence, we can say that HRIS is a desktop software or online solution, in-house developed or outsourced application for data entry, data tracking, and data information needs of the human resources functions of a business. As in other types of information systems, an HRIS consists of a database, which contains one or more files in which the data relevant to the system is maintained, and a database management system, which provides the means by which users of the system access and utilize these data. The HRIS thus contains tools that allow users to input new data and edit existing data; in addition, such programs provide users with the opportunity to select from an array of predefined reports that may either be printed or displayed on a monitor. It supports applications such as employee selection and placement, payroll, pension and benefits management, intake and training projections, career-development, performance evaluation, and so forth.

Literature Review

Lengnick- Hall and Moritz (2003) conducted a case-based research on three companies that had adopted some form of e-HR. They characterized e-HR into three forms: publishing information, automation, and transformation. According to them, the factors that impact the organization adoptions are: Availability and accessibility of personal computers with broadband connections, the proportion of an organization's employees who are computer- and Internet -literate, and the number of human resource professionals and information technology specialists with the expertise to design and implement custom-fitted solutions for their organizations.

Beaman and Walker (2004) elucidated that because of globalization, the world has changed and so should our systems and companies. This research defined a new model for global HRIS that encompasses a new organizational structure, alternative system architecture, and distributed methods of HR service delivery. One of the key findings of the study was that technology is still a restraining factor for companies. Furthermore, to make good use of a global HRIS, activities should be divided on a function-by-function or task-by-task basis, that is, activities should be distributed across all three levels: global, regional, and local. Furthermore, pushing those functions towards global implementation that demand efficiencies and not face-time can be a suitable approach and when a function demands face-to-face responsiveness, push it towards local implementation. Likewise, decision-making should be made a part of the mainstream of the organization, and instead of making all decisions at the headquarters, involving people from across the organization by organizing annual strategic conferences, quarterly theme meetings, ad hoc development committees, Internet chat rooms, and so forth is recommended.

The study conducted by Nicholas, Christopher, and Johns (2005) gathered information regarding the implementation of an HRIS, perceived benefits, satisfaction, and its strategic impact. According to the findings, the directors surveyed were satisfied with the system, but did not see many benefits from its usage outside of its effect on information and information sharing. Part of the problem may stem from the type of organizations that were sampled. Recruiting, hiring, and training probably are handled somewhat differently for public sector employees as compared to the employees of private sector organizations, and as per them, HRIS in its current form may not yet have had much positive impact in these areas. However, it appears that there is potential for these benefits, as a large majority of the directors believed that the HRIS was not being fully utilized. The variables studied were: HR processes, time saving, cost savings, information effects, decision making, and strategic impact & HR's role.

Ngai and Wat (2006) empirically compared the differences in perception between HRIS adopters and non-adopters as well as the size of organizations in relation to the adoption of HRIS in Hong Kong based companies. In addition, they also identified the benefits that are perceived to be achievable through HRIS and the perceived barriers to the implementation of HRIS. According to their research, quick response and access to information was the greatest benefit as against enhancing competitiveness, which was perceived to be the least beneficial by HRIS adopters. The greatest barrier to the adoption of HRIS was insufficient financial support, whereas a lot of paperwork that is difficult to computerize was perceived to be the least significant barrier to implement HRIS.

The said study found no significant differences between HRIS adopters and non-adopters on the perceived benefits of implementing HRIS. Also, the perception of HRIS adopters did not vary significantly with respect to company size. However, some perceived benefits and barriers did vary significantly with respect to company size.

Bradford, Sae-Won, and Sarah (2006) collected data through interviews with senior HR professionals from 19 Fortune 500 companies to examine the role of information technology (e-HR) in shaping the competency requirements of HR professionals. The data suggested that information technology has the potential to play an important role in this change process. The HR executives interviewed indicated that information technology has allowed the HR function to focus less on routine, administrative tasks, and dedicate more energy to delivering services that add value to businesses. Interviews also indicated that eHR requires HR professionals to have a sound understanding of the business and should have the ability to solve business problems in collaboration with the management. e-HR also provides specialization and expertise in functional HR delivery. Together, these competencies enable HR professionals to offer state-of-the-art services that are aligned with business needs.

Fernández-Sánchez, de Juana-Espinosa, and Valdés-Conca (2006) concluded that the use of business HRIS is in a developing and retrieval stage, but despite of that, it has a positive influence on the recruitment process. The findings clearly indicated that quite a large proportion of organizations rely on HRIS for at least one of the stages of the recruitment process. As per the authors' beliefs, HRIS adds a competitive value to the HRM department and also to the firm. However, they had reservations about HRIS giving a sustainable competitive advantage to the firm. According to Fernández-Sánchez, de Juana-Espinosa, and Valdés-Conca :

The presence of these applications is scarcer for the most complex and delayed in time tasks, such as decision making processes, because they require, in return, more complex HRIS. It was also observed that two groups of organizations lead the HRIS implementation trend: the parent companies, with regard to their subsidiaries, and the largest firms in terms of the number of employees. This seems a logical finding because their more complex structures may benefit more from the advantages of HRIS to increase the efficiency of their recruiting processes. (2006, p.6).

Wilson-Evered and Härtel (2009) conducted a survey study to assess staff's attitudes towards and participation in the implementation of HRIS applications. Researchers identified important factors associated with the implementation of new HRIS. The successful implementation of new information systems requires that, within the organizational climate, people have positive attitudes towards innovation and new ideas. Based on extensive literature review, the researchers predicted that workplace morale, workplace distress, effectiveness, change leadership, job satisfaction, participation and involvement, and confidence in technology skills will influence openness to change and innovation required for effective implementation of HRIS. However, their research findings clearly mentioned that the conditions that support successful implementation for HR staff will differ from those for line managers. The factors that influenced attitudes towards new ideas in HR/payroll staff are Morale, Leadership, and Distress, while the factors that influenced attitudes towards new ideas in line managers are Confidence in Technology, Leadership, and Job Satisfaction. All the factors with the exception of distress are positively related with attitude towards new ideas.

Absar and Mahmood (2011) studied the adoption of new HRM practices in the public and private sector organizations in Bangladesh. This study revealed significant differences in the adoption of new HRM practices between public and private sector industrial enterprises of Bangladesh. Employees in the private sector organizations appeared to be more satisfied than their counterparts in public sector organizations with organizational HRM practices. The findings revealed that the overall status of adoption of new HRM practices of the private sector industrial enterprises was significantly better than that of the public sector industrial enterprises of Bangladesh.

Akhtar, Nazir, and Irshad (n.d.) attempted to compare conventional HRM with e-HRM applications on four main HRM functional areas. The aim of the research was to help people understand e-HRM, provide new information for corporations which intend to transform conventional HRM to e-HRM to catch up with the pace of

the new era, as well as also provide information about companies providing e-HRM solutions. The findings showed the features and advantages of e-HRM and demonstrated that implementation of e-HRM indeed contributes to HRM effectiveness and corporate performance.

Suhag (2013) studied the role of IT in HRM practices by considering five factors, that is, whether HRIS is good for the organization, whether HRIS is successfully implemented in the organization, whether attendance record is accurate in HRIS, whether online communication of tasks and assignments is proper, and whether employees received prompt feedback from managers. The author concluded that the employees of the sample organization felt that HRIS was really good for the organization ; the employees responded that HRIS was implemented successfully in the organization ; the employees agreed that the maintenance of the attendance record was good in the organization ; and the employees were satisfied with the online communication of tasks and assignments. The employees also revealed that the managers provided prompt feedback to their queries. In the end, it was concluded that the application of HRIS, that is, HRM and IT in the organization was really effective, and it provided a standardized environment to the organization.

Research Methodology

Certainly, the usage of HRIS is not new in India, but the review of literature shows the dearth of HRIS research in the Indian scenario. Hence, an attempt has been made in the present study to ascertain the usage of HRIS in the Indian scenario. The primary objective of the study was to compare the usage of HRIS under three major domains - namely IT/ITES, services, and manufacturing organizations, and also to find out the possible differences in the usage levels of HRIS among SMEs and large organizations under these sectors. In order to achieve these objectives, data were collected through a self-administered questionnaire from the IT and HR managers of organizations operating in the Delhi/NCR region. An attempt was made to contact more than 350 organizations during 2011-2012. However, only 278 organizations participated in the study, and only 269 valid responses were obtained for analysis. The data were analyzed using descriptive and inferential analysis with the help of Crosstabs, *t*-test, ANOVA, and LSD Post-Hoc Test.

Table 1. Responding Organizations' Profile

Organization Profile	Frequency	%	Valid %	Cumulative %
Sector				
IT & ITES	76	28.3	28.3	28.3
Service	103	38.3	38.3	66.5
Manufacturing	90	33.5	33.5	100.0
Size				
SME	82	30.5	30.5	30.5
Large	187	69.5	69.5	100.0
No of Employees				
10-100	29	10.8	10.8	10.8
101-350	26	9.7	9.7	20.4
351-500	27	10.0	10.0	30.5
501-1000	55	20.4	20.4	50.9
1001-5000	22	8.2	8.2	59.1
5001-Above	110	40.9	40.9	100.0
Total	269	100.0	100.0	100.0

Table 2. Usage of HRIS Subsystems

HRIS Features	Organizations Using HRIS					
	IT & ITES		SERVICE		MANUFACTURING	
	SME	Large	SME	Large	SME	Large
	22	54	36	67	24	66
Employee Database	100%	100%	100%	100%	100%	100%
Human Resource Planning	16.5%	83.3%	18.3%	67.1%	21.03%	86.3%
Skill Mapping	12.3%	68.5%	10.1%	41.0%	11.6%	50.0%
Succession Planning	04.2%	66.7%	05.0%	37.3%	03.1%	48.4%
Applicant Tracking	10.9%	70.3%	02.0%	40.3%	05.3%	50.0%
Recruitment/Job posting	20.0%	79.6%	20.0%	82.0%	20.0%	74.2%
Recruitment & Selection	20.0%	79.6%	20.0%	82.0%	20.0%	74.2%
Attendance Management	60.5%	92.2%	63.5%	89.5%	64.2%	88.0%
Leaves Administration	60.5%	92.2%	54.5%	89.5%	60.0%	88.0%
Goal setting & Tracking	04.9%	79.6%	03.0%	80.6%	02.5%	43.9%
Performance Appraisal	40.9%	87.0%	30.5%	58.2%	32.0%	75.7%
Training Need Analysis	20.6%	79.6%	12.2%	73.1%	15.5%	72.7%
Training Evaluation	10.0%	75.9%	06.5%	70.1%	07.0%	70.7%
Compensation Management	70.0%	100%	68.0%	100%	67.0%	100%

Data Analysis and Findings

Efforts were made to gather data from different sets of organizations under three major domains : IT/ITES, services, and manufacturing organizations to get a better representation of the entire sector (refer to Table 1 for the details of the sample organizations). All the respondent organizations were classified under two categories according to their size, that is, SMEs and large organizations. Organizations having less than 500 of employees were categorized as SMEs and organizations having more than 500 employees were categorized as large organizations for conducting a comparative analysis.

Usage of HRIS Sub - systems : A Descriptive Analysis

Out of 269 users of HRIS, the Table 2 provides the details of the usage of various HRIS features by various organizations in the three sectors. The results show that 100% of the organizations, whether large or SMEs, were using HRIS for maintaining an employee database. It was observed that 83.3% of the large IT & ITES organizations, 86.3% of the large manufacturing organizations, and only 67.1% of the large organizations under the services sector were using HRIS for human resource planning. However, only 16.5%, 18.3%, and 21.3 % of the small organizations of IT & ITES, services, and manufacturing sectors respectively were using HRIS for human resource planning.

The skill-mapping feature was being used by a number of large IT & ITES organizations (68.5%), followed by the services sector organizations (50.1%), and large manufacturing organizations (41.0%). On the other hand, merely 12.3%, 10.1%, and 11.6 % of the small organizations of IT & ITES, services, and manufacturing sectors respectively were using HRIS for skill mapping.

Succession planning is another feature where IT & ITES organizations were leading, with 66.7% of the IT and ITES organizations using this feature, followed by 48.4% of the services sector organizations, and only 37.3% of the large manufacturing organizations were using this feature. Usage of this feature in SMEs was quite deprived, with an average of just 4% usage among the organizations of the small and medium scale sector. It is because of the entrepreneurial establishment of SMEs. It can be observed that 70.3% of the large IT & ITES organizations,

40.3% of the large manufacturing organizations, and 50 % of the large organizations under the services sector were using HRIS for application tracking, but only 10.9%, 2.0%, and 5.3% of the small organizations of the IT & ITES, services, and manufacturing sectors respectively were using this feature of HRIS. The low usage of this feature in the small organizations might be because a small number of candidates applied in these organizations, and they did not require a special software to manage the number of applicants.

It can also be inferred from the Table 2 that 79.6% of the large IT & ITES organizations, 82% of the large manufacturing organizations, and 74.2% of the large organizations under the services sector were using HRIS for recruitments/job postings. Only 10.9%, 2.0%, and 5.3% of the small organizations of the IT & ITES, services, and manufacturing sectors respectively were using HRIS for recruitments/job postings and for recruitment and selection.

Attendance management is another extensively used feature, with 92.2% of the large IT & ITES organizations, 89.5% of the large manufacturing organizations, and 88% of the large organizations under the services sector using the same. SMEs were also using HRIS for attendance management to a great extent, with 60.5%, 63.5%, and 64.2% of the small organizations of IT & ITES, services, and manufacturing sectors respectively using this application. The same pattern of usage of HRIS for leaves administration was also observed.

The findings clearly reveal that 79.6% of the large IT & ITES organizations, 80.6% of the large manufacturing organizations, and only 43.9% of the large organizations under the services sector were using HRIS for goal setting & tracking and just 4.9%, 3.0%, and 2.5% of the small organizations of IT & ITES, services, and manufacturing sectors respectively were using HRIS for the same. While using the HRIS performance appraisal feature, again, large IT and ITES organizations (87%) were the leaders followed by services (75.2%) and then manufacturing sector organizations (58.2%). A decent percentage of (40.9%, 30.5%, 32.0%) the small organizations of IT & ITES, services, and manufacturing sectors respectively were also using the HRIS for performance appraisal.

It can also be observed that 9.6% of the large IT & ITES organizations, 73.1% of the manufacturing, and 72.7% of the services sector organizations were using HRIS for training need analysis. Again, on this aspect, the SMEs were far behind the large organizations in utilizing HRIS for training need analysis and training evaluation. Apart from the employee database, the 'compensation management' feature was found to be used by 100% of the large organizations, regardless of the sector. Also, a good section (70.0%, 68.0%, 67.0%) of the IT & ITES, services, and manufacturing sector SMEs were respectively found to be using HRIS for compensation management.

Mean Difference Among Sectors : An Inferential Analysis

The Table 3 exhibits the results of the F test with degrees of freedom ($df = 2,266$) to show whether there is a significant difference between the mean of the three groups (IT & ITES, services, and manufacturing organizations) and the 'Sig. Pair' column identifies among which group of pairs there exists a significant difference by using :

- **Pair 1:** IT & ITES and the services sector,
- **Pair 2:** IT & ITES and the manufacturing sector,
- **Pair 3:** The services and the manufacturing sectors.

➤ **Aspect - Employee Database :** The results show that no two sectors were significantly different at the .05 level of significance as indicated by the F -test. The ratings for IT & ITES (Mean = 1.05, $SD = 0.225$), services (Mean = 1.06, $SD = 0.235$), and manufacturing sector organizations (Mean = 1.06, $SD = 0.230$) are almost the same.

➤ **Aspect - Human Resource Planning :** The results show that no two sectors were significantly different at the .05 level of significance as indicated by the F -test. The ratings for the manufacturing organizations are slightly high (Mean = 1.78, $SD = 0.832$) followed by the ratings for IT & ITES, (Mean = 1.84, $SD = 0.869$), and services sector organizations (Mean = 1.90, $SD = 0.846$).

Table 3. Significant Difference-Usage of HRIS Features

HRIS Advantage	IT & ITES		Service		Manufacturing		F-value	Sig. Pair (s)
	Mean	SD	Mean	SD	Mean	SD		
Employee Database	1.05	0.22	1.06	0.23	1.06	0.23	0.013 ^{NS}	-
HR Planning	1.84	0.86	1.90	0.84	1.78	0.83	0.525 ^{NS}	-
Skill Mapping	2.07	0.86	2.43	0.7	2.18	0.89	4.653**	1,3
Succession Planning	2.11	0.88	2.49	0.75	2.22	0.90	4.910**	1,3
Applicant Tracking	1.95	0.90	2.43	0.722	2.16	0.911	7.286**	1,3
Job posting	1.54	0.73	1.67	0.677	1.84	0.886	3.302*	2
Recruitment & Selection	1.54	0.73	1.67	0.677	1.84	0.886	3.302*	2
Attendance Mgmt.	1.09	0.29	1.00	0.00	1.02	0.14	6.210**	1,2
Leaves Administration	1.28	0.68	1.03	0.16	1.11	0.31	7.651**	1,2
Goal setting & Tracking	1.78	0.84	2.20	0.80	1.71	0.86	9.843**	1,3
Performance Appraisal	1.89	0.85	1.98	0.50	1.98	0.82	0.357 ^{NS}	-
Training Need Analysis	1.68	0.85	1.76	0.73	1.88	0.88	1.195 ^{NS}	-
Training Evaluation	1.82	0.90	2.07	0.85	1.94	0.87	1.828 ^{NS}	-
Compensation	1.58	0.69	1.55	0.50	1.61	0.64	0.214 ^{NS}	-

NS-Not Significant **-Significant at the .001 level *-Significant at the .005 level

➤ **Aspect - Skill Mapping :** The results show that the ratings for the IT & ITES (Mean =2.82, *SD* = 0.869) sector are higher than what they are for the other two sectors, that is, the manufacturing (Mean =2.18, *SD* = 0.894) and services sectors (Mean=2.43, *SD* = 0.709). The independent sample *F* - test found two pairs (IT & ITES and services sectors, and services and manufacturing sectors) to be significantly different at the .010 level of significance.

➤ **Aspect - Succession Planning :** The results show that the ratings for the IT & ITES (Mean =2.11, *SD* = 0.888) sector are higher than what they are for the other two sectors, that is, manufacturing (Mean=2.22, *SD* = 0.906) and services (Mean = 2.49, *SD* = 0.752) sectors. The independent sample *F* - test found two pairs (IT & ITES and services sectors, and services and manufacturing sectors) to be significantly different at the .010 level of significance.

➤ **Aspect - Applicant Tracking :** The results show that the ratings for the IT & ITES sector (Mean=1.95, *SD* = 0.908) are higher than what they are for the other two sectors, that is, manufacturing (Mean=2.16, *SD* = 0.911) and services (Mean = 2.43, *SD* = 0.722) sectors. The independent sample *F* - test found two pairs (IT & ITES and services sectors, and services and manufacturing sectors) to be significantly different at the .050 level of significance.

➤ **Aspect - Recruitment/Job Posting :** The results show that the ratings for the IT & ITES sector (Mean=1.54, *SD* = 0.738) are higher than what they are for the other two sectors, that is, services (Mean=1.67, *SD* = 0.677) and manufacturing sectors (Mean =1.84, *SD* = 0.886). The independent sample *F* - test found the mean for the IT & ITES sector and the manufacturing sector to be significantly different at the .050 level of significance.

➤ **Aspect - Recruitment & Selection :** The results show that the ratings for the IT & ITES sector (Mean = 1.54, *SD* = 0.738) are higher than what they are for the other two sectors, that is, services (Mean=1.67, *SD* =0.677) and manufacturing sectors (Mean=1.84, *SD* = 0.886). The independent sample *F* - test found one pair (IT & ITES and

manufacturing sectors) to be significantly different at .050 level of significance.

➤ **Aspect - Attendance Management :** The results show that the ratings for the services sector (Mean=1.00, $SD = 0.000$) are higher than what they are for the other two sectors, that is, manufacturing (Mean=1.02, $SD = 0.148$) and IT & ITES sectors (Mean=1.09, $SD = 0.291$). The independent sample F - test found two pairs to be significantly (IT & ITES and manufacturing sectors, and IT & ITES and services sectors) different at the .050 level of significance.

➤ **Aspect - Leaves Administration :** The results show that the ratings for the services (Mean = 1.03, $SD = 0.169$) sector are higher than what they are for the other two sectors, that is, manufacturing (Mean=1.11, $SD = 0.316$) and IT & ITES sectors (Mean=1.28, $SD = 0.685$). The independent sample F - test found two pairs to be significantly (IT & ITES and manufacturing sectors , and IT & ITES and services sectors) different at the .050 level of significance.

➤ **Aspect - Goal Setting & Tracking :** The results show that the ratings for the manufacturing (Mean=1.71, $SD = 0.864$) sector are higher than what they are for the other two sectors, that is, IT & ITES (Mean=1.78, $SD = 0.842$) and services sectors (Mean = 2.20, $SD = 0.809$). The independent sample F - test found two pairs to be significantly (IT & ITES and manufacturing sectors, and IT & ITES and services sectors) different at the .050 level of significance.

➤ **Aspect - Performance Appraisal :** The results show that (as indicated by the F -test) no two sectors are significantly different at the .050 level of significance . The ratings for the IT & ITES sector are the highest (Mean=1.89, $SD = 0.858$) followed by the services (Mean=1.98, $SD = 0.505$) and manufacturing sectors (Mean=1.98, $SD = 0.357$).

➤ **Aspect -Training Need Analysis :** The results show that no two sectors are significantly different at the .050 level of significance, as indicated by the F -test. The ratings for the IT & ITES sector are the highest (Mean=1.68, $SD = 0.852$) followed by the manufacturing (Mean = 1.76, $SD = 0.734$) and services sectors (Mean = 1.88, $SD = 0.885$).

➤ **Aspect - Training Evaluation :** The results show that no two sectors are significantly different at the .050 level, as indicated by the F -test. The ratings for the IT & ITES sector are the highest (Mean=1.82, $SD = 0.905$) followed by the services (Mean=1.94, $SD = 0.875$) and manufacturing sectors (Mean = 2.07, $SD = 0.855$).

➤ **Aspect: Compensation Management :** The result shows that no two sectors are significantly different at the .050 level, as indicated by the F -test. The ratings for the manufacturing sector are the highest (Mean=1.55, $SD = 0.500$) followed by the IT & ITES (Mean=1.58, $SD = 0.698$) and services sectors (Mean=1.61, $SD = 0.648$).

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Mean Difference Among the SMEs and the Large IT & ITES Organizations

The Table 4 exhibits the results of the t - test to show whether there is a significant difference between the means of the SMEs and the large IT&ITES organizations.

➤ **Aspect - Employee Database :** There is a significant difference in the mean score between the SMEs ($M = 1.18$, $SD = 0.395$) and the large IT & ITES organizations ($M = 1.65$, $SD = 0.756$) (conditions; $t(75) = 3.418$, $p = 0.001$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for maintaining the employees' database.

Table 4. Significant Difference-Usage of HRIS Features by SMEs and Large Organizations Under the IT & ITES Sector

HRIS Advantage	SME		Large		t - value	Sig.
	Mean	SD	Mean	SD		
Employee Database	1.18	0.395	1.00	0.000	3.418	0.001**
Human Resource Planning	2.32	0.945	1.65	0.756	3.253	0.002*
Skill Mapping	2.64	0.492	1.83	0.885	4.001	0.000**
Succession Planning	2.73	0.456	1.85	0.899	4.335	0.000**
Applicant Tracking	2.59	0.503	1.69	0.907	4.402	0.000**
Job posting	1.59	0.503	1.52	0.818	0.385	0.701 ^{NS}
Recruitment & Selection	1.59	0.503	1.52	0.818	0.385	0.701 ^{NS}
Attendance Management	1.00	0.000	1.13	0.339	-1.786	0.078 ^{NS}
Leaves Administration	1.91	1.019	1.02	0.136	6.343	0.000**
Goal setting & Tracking	2.59	0.503	1.44	0.718	6.824	0.000**
Performance Appraisal	2.59	0.503	1.61	0.811	5.259	0.000**
Training Need Analysis	2.00	0.873	1.56	0.816	2.110	0.038*
Training Evaluation	2.36	0.790	1.59	0.858	3.632	0.001**
Compensation Management	2.23	0.752	1.31	0.469	6.400	0.000**

NS-Not Significant **-Significant at the .01 level *-Significant at the .05 level

➤ **Aspect - Human Resource Planning :** There is a significant difference in the mean score between the SMEs ($M=2.32$, $SD=0.945$) and the large IT & ITES organizations ($M=1.00$, $SD=0.000$) (conditions; $t(75)=3.253$, $p=0.002$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for human resource planning.

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➤ **Aspect - Skill Mapping :** There is a significant difference in the mean score between the SMEs ($M=2.64$, $SD=0.492$) and the large IT & ITES organizations ($M=1.83$, $SD=0.885$) (conditions; $t(75)=4.001$, $p=0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for carrying out skill mapping.

➤ **Aspect - Succession Planning :** There is a significant difference in the mean score between the SMEs ($M=2.73$, $SD=0.456$) and the large IT & ITES organizations ($M=1.85$, $SD=0.899$) (conditions; $t(75)=4.335$, $p=0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for carrying out succession planning.

➤ **Aspect - Applicant Tracking :** There is a significant difference in the mean score between the SMEs ($M=2.59$, $SD=0.503$) and the large IT & ITES organizations ($M=1.69$, $SD=0.907$) (conditions; $t(75)=4.402$, $p=0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for tracking applicants.

➤ **Aspect - Recruitment/Job Posting :** There is no significant difference in the mean score between the SMEs ($M=1.59$, $SD=0.503$) and the large IT & ITES organizations ($M=1.52$, $SD=0.818$) (conditions; $t(75)=0.385$, $p=0.701$). These results suggest that there was no difference in the extent of usage of HRIS for recruitment/job posting by both - the large IT & ITES and SME organizations.

➤ **Aspect - Recruitment & Selection :** There is no significant difference in the mean score between the SMEs ($M = 1.59$, $SD = 0.503$) and the large IT & ITES organizations ($M = 1.52$, $SD = 0.818$) (conditions; $t(75) = 0.385$, $p = 0.701$). These results suggest that there was no difference in the extent of usage of HRIS for recruitment and job selection by both - the large IT & ITES and SME organizations.

➤ **Aspect - Attendance Management :** There is a significant difference in the mean score between the SMEs ($M = 1.00$, $SD = 0.000$) and the large IT & ITES organizations ($M = 1.13$, $SD = 0.339$) (conditions; $t(75) = -1.786$, $p = 0.078$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for attendance management.

➤ **Aspect - Leaves Administration :** There is a significant difference in the mean score between the SMEs ($M = 1.91$, $SD = 1.019$) and the large IT & ITES organizations ($M = 1.02$, $SD = 0.136$) (conditions; $t(75) = 6.343$, $p = 0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for leaves administration.

➤ **Aspect - Goal Setting & Tracking :** There is a significant difference in the mean score between the SMEs ($M = 2.59$, $SD = 0.503$) and the large IT & ITES organizations ($M = 1.44$, $SD = 0.718$) (conditions; $t(75) = 6.824$, $p = 0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for goal setting and tracking.

➤ **Aspect - Performance Appraisal :** There is a significant difference in the mean score between the SMEs ($M = 2.59$, $SD = 0.503$) and the large IT & ITES organizations ($M = 1.61$, $SD = 0.811$) (conditions; $t(75) = 5.259$, $p = 0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for performance appraisal.

➤ **Aspect - Training Need Analysis :** There is a significant difference in the mean score between the SMEs ($M = 2.00$, $SD = 0.873$) and the large IT & ITES organizations ($M = 1.56$, $SD = 0.816$) (conditions; $t(75) = 2.110$, $p = 0.038$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for training need analysis.

➤ **Aspect - Training Evaluation :** There is a significant difference in the mean score between the SMEs ($M = 2.36$, $SD = 0.790$) and the large IT & ITES organizations ($M = 1.59$, $SD = 0.858$) (conditions; $t(75) = 3.632$, $p = 0.001$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for training evaluation.

➤ **Aspect - Compensation Management :** There is a significant difference in the mean score between the SMEs ($M = 2.23$, $SD = 0.752$) and the large IT & ITES organizations ($M = 1.31$, $SD = 0.469$) (conditions; $t(75) = 6.400$, $p = 0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for compensation management.

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Mean Difference Among the SMEs and the Large Services Organizations

The Table 5 exhibits the results of the t - test to show whether there is a significant difference in the mean score between the SMEs and the large service organizations.

➤ **Aspect - Employee Database :** There is no significant difference in the mean score between the SMEs ($M = 1.11$, $SD = 0.319$) and the large service organizations ($M = 1.03$, $SD = 0.171$) (conditions; $t(102) = 1.686$, $p = 0.095$). These results suggest that there was no difference in the extent of usage of HRIS for maintaining

Table 5. Significant Difference-Usage of HRIS Features by SMEs and Large Organizations Under the Services Sector

HRIS Advantage	SME		Large		t - value	Sig.
	Mean	SD	Mean	SD		
Employee Database	1.11	0.319	1.03	0.171	1.686	0.095 ^{NS}
Human Resource Planning	2.31	0.822	1.69	0.783	3.761	0.000**
Skill Mapping	2.50	0.507	2.39	0.797	0.763	0.447 ^{NS}
Succession Planning	2.56	0.695	2.45	0.784	0.692	0.491 ^{NS}
Applicant Tracking	2.50	0.507	2.39	0.816	0.748	0.456 ^{NS}
Job posting	1.39	0.494	1.82	0.716	-3.226	0.002**
Recruitment & Selection	1.39	0.494	1.82	0.716	-3.226	0.002**
Attendance Management	1.00	0.000	1.00	0.000	---	---
Leaves Administration	1.00	0.000	1.04	0.208	-1.286	0.201 ^{NS}
Goal setting & Tracking	2.50	0.507	2.04	0.895	2.815	0.006**
Performance Appraisal	2.00	0.000	1.97	0.627	0.285	0.776 ^{NS}
Training Need Analysis	1.64	0.487	1.82	0.833	-1.203	0.232 ^{NS}
Training Evaluation	2.47	0.696	1.85	0.857	3.735	0.000**
Compensation Management	1.39	0.494	1.64	0.483	-2.513	0.014*

NS-Not Significant **-Significant at the .01 level *-Significant at the .05 level

employees' database by both - the SMEs and the large service organizations.

➤ **Aspect - Human Resource Planning :** There is a significant difference in the mean score between the SMEs ($M=2.31$, $SD = 0.822$) and the large service organizations ($M=1.69$, $SD = 0.783$) (conditions; $t(102)=3.761$, $p = 0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for human resource planning.

➤ **Aspect - Skill Mapping :** There is no significant difference in the mean score between the SMEs ($M = 2.50$, $SD = 0.507$) and the large service organizations ($M = 2.39$, $SD = 0.797$) (conditions; $t(102) = 0.763$, $p = 0.447$). These results suggest that there was no difference in the extent of usage of HRIS for skill mapping by both - the SMEs and the large service organizations.

➤ **Aspect - Succession Planning :** There is no significant difference in the mean score between the SMEs ($M=2.56$, $SD = 0.695$) and the large service organizations ($M=2.45$, $SD = 0.784$) (conditions; $t(102) = 0.692$, $p = 0.491$). These results suggest that there was no difference in the extent of usage of HRIS for succession planning by both - the SMEs and the large service organizations.

➤ **Aspect - Applicant Tracking :** There is no significant difference in the mean score between the SMEs ($M=2.50$, $SD = 0.507$) and the large service organizations ($M = 2.39$, $SD = 0.816$) (conditions; $t(102)= 0.748$, $p = 0.456$). These results suggest that there was no difference in the extent of usage of HRIS for applicant tracking by both - the SMEs and the large service organizations.

➤ **Aspect - Recruitment/Job Posting :** There is a significant difference in the mean score between the SMEs ($M=1.39$, $SD = 0.494$) and the large service organizations ($M=1.82$, $SD = 0.716$) (conditions; $t(102)= -3.226$, $p = 0.002$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for recruitment/ job posting.

➤ **Aspect - Recruitment & Selection :** There is a significant difference in the mean score between the SMEs ($M=1.39$, $SD = 0.494$) and the large service organizations ($M=1.82$, $SD = 0.716$) (conditions; $t(102) = -3.226$, $p = 0.002$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for recruitment and selection.

➤ **Aspect - Attendance Management :** Since the standard deviation is 0, no significant difference was calculated.

➤ **Aspect - Leaves Administration :** There is no significant difference in the mean score between the SMEs ($M=1.00$, $SD = 0.000$) and the large service organizations ($M=1.04$, $SD = 0.208$) (conditions; $t(102) = -1.286$, $p = 0.201$). These results suggest that there was no difference in the extent of usage of HRIS for leaves administration by both - the SMEs and the large service organizations.

➤ **Aspect - Goal Setting & Tracking :** There is a significant difference in the mean score between the SMEs ($M=2.50$, $SD = 0.507$) and the large service organizations ($M=2.04$, $SD = 0.895$) (conditions; $t(102) = 2.815$, $p = 0.006$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for goal setting and tracking.

➤ **Aspect - Performance Appraisal :** There is no significant difference in the mean score between the SMEs ($M=2.00$, $SD = 0.000$) and the large service organizations ($M=1.97$, $SD = 0.627$) (conditions; $t(102) = 2.816$, $p = 0.006$). These results suggest that there was no difference in the extent of usage of HRIS for performance appraisal by both - the SMEs and the large service organizations.

➤ **Aspect - Training Need Analysis :** There is no significant difference in the mean score between the SMEs ($M=1.64$, $SD = 0.487$) and the large service organizations ($M=1.82$, $SD = 0.833$) (conditions; $t(102) = -1.203$, $p = 0.232$). These results suggest that there was no difference in the extent of usage of HRIS for training need analysis by both - the SMEs and the large service organizations.

➤ **Aspect - Training Evaluation :** There is a significant difference in the mean score between the SMEs ($M=2.47$, $SD = 0.696$) and the large service organizations ($M=1.85$, $SD = 0.857$) (conditions; $t(102) = 3.735$, $p = 0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for training evaluation.

➤ **Aspect - Compensation Management :** There is a significant difference in the mean score between the SMEs ($M=1.39$, $SD = 0.494$) and the large service organizations ($M=1.64$, $SD = 0.483$) (conditions; $t(102) = -2.513$, $p = 0.014$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for compensation management.

Mean Difference Among the SMEs and the Large Manufacturing Organizations

The Table 6 exhibits the results of the t - test to show whether there is a significant difference in the mean score between the SMEs and the large manufacturing organizations.

➤ **Aspect - Employee Database :** There is a significant difference in the mean score between the SMEs ($M=1.17$, $SD = 0.381$) and the large manufacturing organizations ($M=1.02$, $SD = 0.123$) (conditions; $t(89) = 2.869$, $p = 0.005$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for maintaining the employees' database.

Table 6. Significant Difference - Usage of HRIS Features by SMEs and Large Organizations under the Manufacturing Sector

HRIS Advantage	SME		Large		t - value	Sig.
	Mean	SD	Mean	SD		
Employee Database	1.17	0.381	1.02	0.123	2.869	0.005**
Human Resource Planning	2.38	0.824	1.56	0.726	4.538	0.000**
Skill Mapping	2.38	0.711	2.11	0.947	1.266	0.209 ^{NS}
Succession Planning	2.50	0.722	2.11	0.948	1.812	0.073 ^{NS}
Applicant Tracking	2.38	0.711	2.08	0.966	1.386	0.169 ^{NS}
Recruitment/Job posting	2.00	1.022	1.79	0.832	1.005	0.318 ^{NS}
Recruitment & Selection	2.00	1.022	1.79	0.832	1.005	0.318 ^{NS}
Attendance Management	1.08	0.282	1.00	0.000	2.422	0.017 *
Leaves Administration	1.33	0.482	1.03	0.173	4.422	0.000 **
Goal setting & Tracking	2.04	0.806	1.59	0.859	2.237	0.028 *
Performance Appraisal	2.38	0.711	1.83	0.815	2.901	0.005 *
Training Need Analysis	2.00	1.022	1.83	0.789	0.789	0.432 ^{NS}
Training Evaluation	2.21	0.977	1.84	0.821	1.771	0.080 ^{NS}
Compensation Management	1.83	0.917	1.53	0.503	1.994	0.049 *

NS-Not Significant **-Significant at the .01 level *-Significant at the .05 level

➤ **Aspect - Human Resource Planning :** There is a significant difference in the mean score between the SMEs ($M = 2.38$, $SD = 0.824$) and the large manufacturing organizations ($M = 1.56$, $SD = 0.726$) (conditions; $t(89) = 4.538$, $p = 0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for human resource planning.

➤ **Aspect - Skill Mapping :** There is no significant difference in the mean score between the SMEs ($M = 2.38$, $SD = 0.711$) and the large manufacturing organizations ($M = 2.11$, $SD = 0.947$) (conditions; $t(89) = 1.266$, $p = 0.209$). These results suggest that there was no difference in the extent of usage of HRIS for skill mapping by both - the large manufacturing and SME organizations.

➤ **Aspect - Succession Planning :** There is no significant difference in the mean score between the SMEs ($M = 2.50$, $SD = 0.722$) and the large manufacturing organizations ($M = 2.11$, $SD = 0.948$) (conditions; $t(89) = 1.812$, $p = 0.073$). These results suggest that there was no difference in the extent of usage of HRIS for succession planning by both - the large manufacturing and SME organizations.

➤ **Aspect - Applicant Tracking :** There is no significant difference in the mean score between the SMEs ($M = 2.38$, $SD = 0.711$) and the large manufacturing organizations ($M = 2.08$, $SD = 0.966$) (conditions; $t(89) = 1.386$, $p = 0.169$). These results suggest that there was no difference in the extent of usage of HRIS for applicant tracking by both - the large manufacturing and SME organizations.

➤ **Aspect - Recruitment/Job Posting:** There is no significant difference in the mean score between the SMEs ($M = 2.00$, $SD = 1.022$) and the large manufacturing organizations ($M = 1.79$, $SD = 0.832$) (conditions; $t(89) = 1.005$, $p = 0.318$). These results suggest that there was no difference in the extent of usage of HRIS for recruitment/job posting by both - the large manufacturing and SME organizations.

➤ **Aspect - Recruitment & Selection :** There is no significant difference in the mean score between the SMEs ($M = 2.00$, $SD = 1.022$) and the large manufacturing organizations ($M = 1.79$, $SD = 0.832$) (conditions; $t(89) = 1.005$, $p = 0.318$). These results suggest that there was no difference in the extent of usage of HRIS for recruitment and selection by both - the large manufacturing and SME organizations.

➤ **Aspect - Attendance Management :** There is a significant difference in the mean score between the SMEs ($M = 1.08$, $SD = 0.282$) and the large manufacturing organizations ($M = 1.00$, $SD = 0.000$) (conditions; $t(89) = 2.422$, $p = 0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for attendance management.

➤ **Aspect - Leaves Administration :** There is a significant difference in the mean score between the SMEs ($M = 1.33$, $SD = 0.482$) and the large manufacturing organizations ($M = 1.03$, $SD = 0.173$) (conditions; $t(89) = 4.422$, $p = 0.000$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for leaves administration.

➤ **Aspect - Goal Setting & Tracking :** There is a significant difference in the mean score between the SMEs ($M = 2.04$, $SD = 0.806$) and the large manufacturing organizations ($M = 1.59$, $SD = 0.859$) (conditions; $t(89) = 2.237$, $p = 0.028$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for goal setting and tracking.

➤ **Aspect - Performance Appraisal :** There is a significant difference in the mean score between the SMEs ($M = 2.38$, $SD = 0.711$) and the large manufacturing organizations ($M = 1.83$, $SD = 0.815$) (conditions; $t(89) = 2.901$, $p = 0.005$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for performance appraisal.

➤ **Aspect - Training Need Analysis :** There is no significant difference in the mean score between the SMEs ($M = 2.00$, $SD = 1.022$) and the large manufacturing organizations ($M = 1.83$, $SD = 0.789$) (conditions; $t(89) = 0.789$, $p = 0.432$). These results suggest that there was no difference in the extent of usage of HRIS for training need analysis by both - the large manufacturing and SME organizations.

➤ **Aspect - Training Evaluation :** There is no significant difference in the mean score between the SMEs ($M = 2.21$, $SD = 0.977$) and the large manufacturing organizations ($M = 1.84$, $SD = 0.821$) (conditions; $t(89) = 1.771$, $p = 0.080$). These results suggest that there was no difference in the extent of usage of HRIS for training evaluation by both - the large manufacturing and SME organizations.

➤ **Aspect - Compensation Management :** There is a significant difference in the mean score between the SMEs ($M = 1.83$, $SD = 0.917$) and the large manufacturing organizations ($M = 1.53$, $SD = 0.917$) (conditions; $t(89) = 1.994$, $p = 0.049$). These results suggest that as compared to the SMEs, the concerned large organizations used HRIS more extensively for compensation management.

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Discussion and Implications

The findings show the fact that there was a huge difference in the usage pattern of the various HRIS features among the sample organizations. Although SMEs were using HRIS, but their usage was limited to the administrative features like attendance management, leave records, and compensation. There was a massive gap in the usage, which can be tapped by the HRIS software providers for business development. We can undoubtedly see that the large organizations' market is almost saturated in terms of acquisition of HRIS. However, it was observed that a majority of the sample organizations were not using the advanced features.

If we talk about the statistical difference among the three sectors, no significant differences were found in usage of employee database, human resource planning, performance appraisal, training need analysis, training evaluation, compensation management features ; whereas, with respect to the other features, the differences were found to be significant. It was found that the IT & ITES organizations were extensively using the various features of HRIS such as skill mapping, succession planning, applicant tracking, recruitment/jobs posting as compared to the other two sectors. Nevertheless, the services sector was found to be leading in the usage of attendance and leave administration features. Moreover, it was the manufacturing organizations which briefly used the goal setting and tracking features followed by the IT and ITES sector.

With respect to the differences among the SMEs and the large organizations (under the examined three sectors), it was found that there is a statically significant difference among the SMEs and the large IT organizations in the usage of various HRIS features except recruitment and selection features. The large IT organizations were using various HRIS features more extensively as compared to the small and medium IT organizations. The results also show that there is a statistically significant difference among the SMEs and the large service organizations in the usage of certain HRIS features such as employee database, human resource planning, recruitment & selection, goal setting & tracking, training evaluation, and compensation management. The large services organizations were using these features more than the small and medium services organizations.

On the other hand, features like skill mapping, succession planning, and applicant tracking were not extensively used by both the categories of organizations. In manufacturing organizations, a significant difference was found in the usage of some HRIS features and again, the large organizations were found to be using these features more as compared to the SMEs. Usage of features like skill mapping, applicant tracking, recruitment & selection, and training analysis & evaluation were found to be on the lower side in organizations across different sizes. This massive gap, which is evident in usage, can be tapped by the HRIS software providers for business development.

Conclusion

We can conclude that the usage pattern of HRIS fluctuates from feature to feature under the examined sectors. The results show that there is a statistically significant difference among SMEs and large service organizations in the usage of certain HRIS features. Although SMEs were using HRIS, but their usage was still limited to the administrative features like attendance management, leave records, and compensation. Large organizations, on the other hand, were using advanced features of HRIS. This massive gap in the usage can be tapped by the HRIS software providers for business development.

Limitations of the Study and Scope for Future Research

The study was conducted only in Delhi/NCR, which is an inherent limitation of the study. The study can further be extended to other geographical areas of the country to develop a better understanding of the usage level of HRIS in the Indian scenario. Also, the scope of research was limited to IT/ITES, services, and manufacturing sectors, however, the same research can be conducted in other sectors as well.

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