

Users' Perspectives of Human Resource Information System (HRIS) and Its Applications in Higher Education Institutions (HEIs) of North East India

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Abstract

Taking into account the colossal mix of higher education institutions of North-Eastern Region, the present study is an attempt to explore user perspectives of HRIS by different higher educational institutes of North-East India to help the administrators acquire better understanding of the HRIS applications. A structured questionnaire was constructed based on previous studies, pre-tested, modified and distributed to 300 numbers of staff members of HEIs. The main findings of this study revealed that no significant difference exists on user perception regarding applications of HRIS on demographic variations on three focus variables (gender, cadre and qualification). However, results show that users' perception on applications, benefits and barriers of HRIS varied significantly across Higher Education Institutions. Eventually, the present study provides some insights into user perception of HRIS uses, benefits and problems in North-Eastern India's HEIs that could help Human Resource Management (HRM) practitioners to get a better understanding of HRIS applications, which in turn, may help to face the new challenges and competition, for it is necessary to use HRIS because of its global reach.

Keywords: Human Resource Management, Human Resource Information systems, HEIs, North Eastern India, User perspective.

Introduction

Information technology as a tool has considerable potential that managers can use, both generally, and in human resource functions in particular, to increase the capabilities of the organization (Tansley & Watson, 2000; Cedar, 2009). Globalization, rapid technological advancement, the move towards a knowledge-based economy and a host of other trends are changing the face of the modern organization and having a major impact on the role of the human resources (HR) department (Park et al., 2004). Successful adoption and implementation of innovations within the HR department to deal with these challenges and opportunities can be critical determinants of organizational success and such an important innovation within the human resources management (HRM) function is the use of information technology (IT), which has led to the development of computer-based human resources information systems (HRIS) (Gitari et al., 2014).

HRIS were primarily seen to support the "planning, administration, decision making, and control activities of human resource management. (Ball, 2001; Muriithi et al., 2014) and those managing the human resource functions have not ignored such potential, and subsequently widespread use of human resource information systems (HRIS) has occurred (Cedar, 2009)

However, the effectiveness and success of HRIS largely remained unexplored. Several researchers have developed conceptual models to verify the adoption of IT behavior aspects. However, the majority of these studies have failed to give a complete account of the factors underlying the adoption of IT innovation behavior in general and the adoption of Human Resource Information Systems (HRIS) in particular. (Al-dmour et al., 2013). Several studies have suggested that the users' perception plays an important role in successful adoption of information systems (Boudreau & Robey, 2005; Davis, 1989; Oyefolahan & Dominic, 2013; Richter et al., 2013; Venkatesh et al., 2003, 2007; Williams et al., 2009). Similarly, a number of studies also highlighted the role of demographic features on the success of HRIS (Haines & Petit, 1997; Bamel et al., 2014).

On one hand, the operational performance of Higher Education Institutes in India faces the challenge for improvement and on the other hand, HRIS has become the parameters that can give a competitive edge to Higher Education. However, there are very few literatures which address the integration of these in the

context of North Eastern Region of India. It is in this backdrop that the present study has been undertaken to fill few issues in this vital gap in the existing research. The structure of this paper spans literature review, review and development of hypotheses, research methods, analysis and discussion, future research directions, and implications and conclusion(s).

Literature Review

HR executives are looking to technology and the information it provides to help them drive decisions that will lead to success of the organization as a whole. (Wilcox, 1997; Snell et al., 2002) observe that HR can meet the challenge of simultaneously becoming more strategic, flexible, cost-efficient, and customer-oriented by leveraging information technology. They have pointed out that HRIS has the potential to lower administrative costs, increase productivity, speed response times, improve decision-making, and enhance customer service all at the same time. The need for cost reduction, higher quality services, and cultural change are the three main forces that have driven firms to seek IT-driven HR solutions (Yeung & Brockbank, 1995).

An HRIS can perform a number of functions from the simple storage and communication of information, to more complex transactions. As technology advances, the range of functions that an HRIS can undertake increases. Actually, HRIS is directed towards the HR department itself (Ruël et al., 2004), but the use of HRIS can provide a number of benefits not only to the HR function, but also line managers, and the wider organization (Parry, 2009). The use of HRIS has been advocated as an opportunity for human resource professionals to become strategic partners with top management. HRIS allow HR function to become more efficient and to provide better information for decision making (Beadles et al., 2005). The increased use of web technology to deliver HR will leave HR specialists more time for strategic decision making and that outsourcing of people-management activities will liberate HR specialists to perform more strategic activities (Kulik & Perry, 2008).

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

However, in the process of adopting and implementing HRIS by an organization, the effectiveness and success of HRIS largely remained in the hands of its end-users. Research on various theories and models extensively examined the users' perception, attitude, motivation, intentions and adoption of information systems and technologies and explained that users' attributes and their interaction with information system decide the success or failure of information systems and technologies implementation. (Bamel et al., 2014; Venkatesh et al., 2003; Davarpanah, 2013; Fishbein & Ajzen, 1975). According to Muriithi et al. (2014) an important aspect of using information systems are user satisfaction and decision-makers' traits that may influence the adoption and success of IT innovation. These are suggested as an indicator of IS success. Many IS empirical researchers have regarded user satisfaction as important proxy of IS success and it is the most employed measure of IS success due to its applicability and ease of use.

However, substantial amount of research has been undertaken in an attempt to study and isolate the main factors that determine the adoption of IT innovation behavior at the level of the individual firm. Several researchers have developed conceptual models to verify the adoption of IT behavior aspects. However, the majority of these studies have failed to give a complete account of the factors particularly role of demographic characteristics and user perception regarding HRIS underlying the adoption of IT innovation behavior (Al-dmour et al., 2013). The present study focuses to address this gap.

The higher education sector in India has witnessed a tremendous increase in the number of institutions in the form of Universities & Colleges since Independence. India has one of the largest 'Higher Education Systems' in the world. Human resources management of higher education is also changing from management by hand to management by computer. Traditional HR practice is not fit for the need of the new times. So human resources management came up to adopt new technology, new management mode to show a new state to face the world with the advent of computerized HRIS. However little is known about faculty perceptions regarding HRIS applications in higher education as studies are very limited (Bamel et al., 2014). The present study is an attempt to address these gaps.

Developing Hypotheses:**Role of demographic variables:**

Researchers argue that top management support, involvement and participation of the executive or top-level management - of an innovation play a large role in adoption or early adoption of that innovation (Jarvenpaa & Ives, 1991; King & Teo, 1996; Raymond & Bergeron, 1996). A review of relevant literature has also identified other decision-makers' traits that may influence the adoption of IT innovation as well as the degree of education, designation and gender (Damanpour, 1991). Other studies also confirm the importance of demographic features such as gender (Muchiri et al., 2011; Wickramasinghe & De Zoyza, 2008), education (Igbaria et al., 1989; Igbaria & Nachman, 1990) and levels/positions (Baral & Bhargava, 2011; Kaiser & Craig, 2011; Mumford et al., 2007; Rai, 2009) on preferences. Some researchers added that demographics factors like gender, work experience (Muchiri et al., 2011) preferences, attitude and behaviors play an important role for success of HRIS. However, Bamel et al. (2014) have found that there is insignificant difference in some of the demographics' item.

Again, according to the results of Khan et al. (2017), gender and the adoption of HRIS are independent. It means that both male and female are alike and they do not differ as far as the adoption of HRIS is concerned. Similarly, Bamel et al. (2014) supported that the gender and adoption of HRIS are independent. It means that there is no association between the adoption of HRIS with the gender because both male and female have the same perception. It can vary only with the level of management as discussed above.

In view of the above literature, the following null hypothesis have been proposed on the demographic variables such as Gender, Cadre, Qualification (Al-dmour et al., 2013).

Hypothesis H₀₁: Gender wise there is no significant variation in user perspectives in the current applications of HRIS among respondents

Hypothesis H₀₂: Cadre wise there is no significant variation in user perspectives in the current applications of HRIS among respondents

Hypothesis H₀₃: Qualification wise there is no significant variation in user perspectives in the current applications of HRIS among respondents

Application of HRIS:

A number of studies have found that organization size, (Moch & Morse, 1977; Iacovou et al., 1995; Ball, 2001; Bajwa & Lewis, 2003; Zhu et al., 2003; Gibbs et al., 2004; Hausdorf & Duncan, 2004; Nagai & Wat, 2006; Florkowski & Olivas-Lujan, 2006; Lee & Xia, 2006; Teo et al., 2007) a firm's experience with technology, the type of business, and organizational ownership - are important factors in organizational IT adoption as indicted in table 2. (Iacovou et al., 1995) Moch & Morse, 1977; Iacovou et al., 1995; Ball, 2001; Panayotopoulou et al., 2007. In case of small organizations, HRIS may play an administrative role only; however, in large organizations, HRIS is often used as a strategic tool (Kovach & Cathcart, 1999). The study of Altarawneh & Al-Shqairat (2010) concluded that Jordanian universities adopted HRIS only for automation of routine work and not for strategic decision making. HRIS is still found to focus on administrative tasks such as record-keeping and payroll (Broderick & Boudreau, 1992). However, Budhwar & Boyne (2004) examined that HR practices in Indian private- and public-sector organizations are more similar. Considering that most of the HEIs is under the umbrella of MHRD and assuming that users of HRIS for these institutes carry similar view the proposed study hypothesize that

HypothesisH0₄: There is no significant variation in user perspectives in the current applications across higher education Institutions(HEIs)

HypothesisH0₅: There is no significant variation in user perspectives in the current benefits of HRIS based across higher education Institutions(HEIs)

HypothesisH0₆: There is no significant variation in user perspectives in the current barriers of HRIS based across higher education Institutions(HEIs)

Objectives of the Study

- a) To analyze the role of demographic variables in the application of HRIS in Higher Education Institutions of North East India
- b) To measure the degree of variance in the applications of HRIS across select institutions.

Research Methodology:

Scope of the Study:

The study conceptualizes the uses and application of HRIS in North Eastern Region of India with the main categories of higher education institutions viz., Central Universities, State Universities, Private Universities, Institutions of National Importance (i.e., NITs, IITs, and IIMs) and others.

Population:

The Universe (population) of the study comprise of 37 institutions which are functional for minimum 5 years and above in the area of higher education in North Eastern Region of India. These institutions have been categorized into four (4) strata, viz., (i) Centrally Funded Technical Institutions (First strata), (ii) Central University (Second Strata), (iii) State University (Third strata) and (iv) Private University (Fourth strata). The respondents included all Information Technology users, viz., Administrators, Office staffs, and Faculty members (Professor, Associate Professor and Assistant Professor) from these institutions. The target population for this research defined as academic and non-academic users of HRIS from the select higher education institutions of North East India.

Sample size and sampling technique:

The samples from the first stratum have been arrived at with a consideration of equal representation from all institution types (IIT, IIM, NIT, Others) which are equipped with HRIS applications. On the basis of first stratum, proportional allocations have been made for the second, third and fourth strata respectively with the sample size 25 which represent the final population figure of the study. An estimated 50 per cent sample units i.e. 15 sample units have been derived from the second, third and fourth strata respectively from the population size of 25. From each unit 15 academic users and 5 HR users are selected on the basis of convenience. A total of 300 users selected from 15 sample units.

Research Approach and Instrument:

A survey research questionnaire approach is used to collect the data for this study. Items of the questionnaire were adapted from previous research studies viz., (Ball, 2001; Ngai & Wat, 2006; Mohanty & Tripart, 2007; Altarawneh & Al-Shqairat, 2010). The questionnaire was mainly divided into two parts. The first part asked the basic information about the interviewees and their organization while the second part asked the respondents on their views on the different relevant constructs of the research such as use of HRIS application, benefit and barriers. All variables were measured with multiple questions using a five point Likert scale.

Data Analysis

For the purpose of study, a total number of 300 questionnaires were sent to fifteen institutes. The researcher has received 210 numbers of responses out of which 195 numbers of responses have been used for analysis after discarding the ambiguous responses. Before proceeding with analysis, final items of the questionnaire are considered after testing of Internal validity and reliability with Cronch alpha and Exploratory factor analysis method as suggested by several researchers. (Costell & Osborne, 2005; Field, 2009; Tabachnik & Fidell, 2001).

Demographic Statistics:

The questionnaire included demographic information needed to assess the respondents' gender, qualification, relationship status designation, age group, type of institute they were working, whether the institute has a separate HR department and their degree of IT sophistication. The respondents furnished information and the researcher used descriptive statistical analysis, such as frequencies, percentage, valid percent and cumulative percentage so as to present the data systematically and meaningfully with the aim of emphasizing the characteristics and trends of the questionnaires, while at the same time providing sufficient statistical support to the findings.

Table 4 provides us the profile of the respondents along with their demographics.

1			Frequency	Percentage
	Centrally Funded Technical Institute	Academic	40	27
		Non Academic	12	
	Central University	Academic	40	27
		Non Academic	12	
	State University	Academic	20	13
		Non Academic	6	
	Private University	Academic	50	33
		Non Academic	15	
Total			195	100
2	Institutes with Number of Employees	Less than 30	0	0
		Between 30 to 60	0	0
		More than 60	3	2
		Between 60 to 80	192	98
		Total	195	100
3	Has a separate HR department or division	Yes	149	76
		No	46	24
		Total	195	100
4	IT Sophistication	Technophobic	0	0
		Moderately Technophobic	2	1
		Cant Say	13	7
		Moderately Technosavy	58	30
		Technosavy	122	62
		Total	195	100
5	Gender	Female	37	19
		Male	158	81
		Total	195	100
6	Qualification	Postgraduate	63	32
		Doctorate	119	61
		Post Doc	13	7
		Total	195	100
7	Relationship status	Single	46	24
		Married	149	76
		Total	195	100
8	Designation	Assistant	92	47
		Associate	45	23
		Professor	13	7
		Non Academic	45	23
		Total	195	100
9	Age	21-40 years	99	51
		41-60 years	76	39
		Above 60 years	22	10
		Total	195	100

Characteristics of the Statistics:

The study, as reflected from Table 4 reveal that 51 % of the respondents were between in the age group of 21 to 40 years, 39 % of the respondents were between in the age group of 41 to 60 years and 10 % of the respondents were between in the age group above 60 years. Therefore, most of the respondents were below 60 years of age. Also, 19% of the respondents were female and 81% were male. 24% of the respondents were single and 76% of the married. Again who participated in the survey, more than 90% declared that they were techno-savy and were comfortable with computer at work. Altogether, 98% of the respondents reported that they have more than 60 people employed in the institute and 2% reported that less than 60 numbers of employees are working in the institute.

Interestingly, 32 % of them were master's degree holders, followed by 61% Ph.D. holders, and finally 7 % are post doc holders. Similarly, regarding the positions of the respondents in the various institutes, 47% were Assistant Professor, another 23% represented Associate Professor, 7% represented Professor and whiles 33% were from HR staff .Further 76% of the respondent had HR as a separate HR department or division in their institute and 24% did not have any such department.

Presentation of the inference research findings:

The findings were reviewed objective wise by considering the different formulated hypotheses one after the other wherever applicable. In investigating various assertions initially normality of the data is checked via Shapiro-Wilk normality test. However the normality of the data failed for all cases even though the no of observation is 195 and this is because of the fact that most of the data was collected in 5 point Likert scale from scale 1 to scale 5. Therefore non parametric test i.e. Kruskal–Wallis Statistical at 5% significance level is used for testing hypotheses of the study.

Outcome of Hypotheses:

a) H₀₁: Gender wise there is no significant variation in user perspectives in the current applications of HRIS among respondents

In investigating this assertion, the Kruskal–Wallis Statistical test was conducted at 5% significance level to compare the means of current application of HRIS to determine if there were any significant differences among gender wise. Table 5 indicated that all modules of HRIS application such as Absence Monitoring ,Compensation Management, Discipline Procedure Employee Reward Planning, File Maintenance, Job Analysis, Leave Application Tracking Manpower planning, Performance Appraisal, Payment and Salary Administration, Promotion Management, Staffing, Training and Work Design and Grievance redressal System reported p- value of more than 0.05. Therefore, it can be concluded there is no significant difference user perspectives in the current applications of HRIS among respondents of different institutes.

Table 5 : Kruskal–Wallis - Gender Wise Current Applications of HRIS				
Sl no	HRIS Application	P-value	Working Hypothesis	Main Hypothesis
1	Absence Monitoring	0.4849	Accepted	Accepted
2	Compensation Management	0.992	Accepted	
3	Discipline Procedure	0.2349	Accepted	
4	Employee Reward Planning	0.9229	Accepted	
5	File Maintenance	0.2634	Accepted	
6	Job Analysis	0.2299	Accepted	
7	Leave Application Tracking	0.5936	Accepted	
8	Manpower planning	0.5239	Accepted	
9	Performance Appraisal	0.6737	Accepted	
10	Payment and Salary Administration	0.477	Accepted	
11	Promotion Management	0.6855	Accepted	
12	Staffing	0.6588	Accepted	

13	Training and Work Design	0.05306	Accepted	
14	Grievance redressal System	0.4355	Accepted	

b) H₀₂: Cadre wise there is no significant variation in user perspectives in the current applications of HRIS among respondents

H₀₂ purports that “Cadre wise (Assistant Professor, Associate Professor and Professor) there is no significant variation in the current application of HRIS. The outcome of Kruskal–Wallis test is shown in Table 6 . The results indicated that all the modules of HRIS reported p- value of more than 0.05 which reveals that cadre wise no significant difference user perspectives in the current applications of HRIS among respondents of different institutes. However, on the extent of HRIS use for File Maintenance reported with a p-value of 0.003918 which revealed that there is significant difference between the means.

Table 6: Kruskal–Wallis - Cadre Wise application of Current Applications of HRIS				
Sl no	HRIS Application	P-value	Working Hypothesis	Main Hypothesis
1	Absence Monitoring	0.1301	Accepted	Accepted
2	Compensation Management	0.662	Accepted	
3	Discipline Procedure	0.1674	Accepted	
4	Employee Reward Planning	0.9845	Accepted	
5	File Maintenance	0.003918	Rejected	
6	Job Analysis	0.7531	Accepted	
7	Leave Application Tracking	0.5246	Accepted	
8	Manpower planning	0.3149	Accepted	
9	Performance Appraisal	0.1475	Accepted	
10	Payment and Salary Administration	0.7885	Accepted	
11	Promotion Management	0.42	Accepted	
12	Staffing	0.1454	Accepted	
13	Training and Work Design	0.1316	Accepted	
14	Grievance redressal System	0.3934	Accepted	

c) H₀₃: Qualification wise there is no significant variation in user perspectives in the current applications of HRIS among respondents

The Kruskal–Wallis test conducted for hypothesis H₀₃, reported significant difference exist in user users perspectives in the current applications of HRIS among respondents of different institutes (Table 7) in respect of the extent of HRIS use in support of Performance Appraisal and File maintenance as p value are 0.008811 and 0.0004397 respectively. However, for all other modules of HRIS applications, no statistically significant difference is there qualification wise means as p values are more than 0.05 as indicated in Table 7.

Finally, it can be concluded that qualification wise there is no significant difference in the HRIS applications (Table 7).

Table 7 : Kruskal–Wallis - Qualification Wise application of Current Applications of HRIS				
Sl no	HRIS Application	P-value	Working Hypothesis	Main Hypothesis
1	Absence Monitoring	0.2142	Accepted	Accepted
2	Compensation Management	0.3437	Accepted	
3	Discipline Procedure	0.06405	Accepted	
4	Employee Reward Planning	0.3492	Accepted	
5	File Maintenance	0.0004397	Rejected	

6	Job Analysis	0.9884	Accepted
7	Leave Application Tracking	0.3103	Accepted
8	Manpower planning	0.6066	Accepted
9	Performance Appraisal	0.008811	Rejected
10	Payment and Salary Administration	0.7741	Accepted
11	Promotion Management	0.3733	Accepted
12	Staffing	0.6104	Accepted
13	Training and Work Design	0.07298	Accepted
14	Grievance redressal System	0.06245	Accepted

d) H₀₄: There is no significant variation in user perspectives in the current applications across higher education Institutions(HEIs)

Table 8 indicated that there exists significant difference in the HRIS applications across higher education institutions as all working hypothesis supported the same except extent of HRIS use in Absence Monitoring. In case of Absence Monitoring, p- value is 0.3373 at 5% significant level (Table 8) and so there is no statistically significant difference across higher education institutions in respect of absence monitoring application.

Table 8 : Kruskal-Wallis - Current Applications of HRIS across HEIs				
Sl. No	HRIS Application	P-value	Working Hypothesis	Main Hypothesis
1	Absence Monitoring	0.3373	Accepted	Rejected
2	Compensation Management	<2.2 ^{e-16}	Rejected	
3	Discipline Procedure	<2.2 ^{e-16}	Rejected	
4	Employee Reward Planning	1.111 ^{e-08}	Rejected	
5	File Maintenance	1.111 ^{e-08}	Rejected	
6	Job Analysis	1.533 ^{e-13}	Rejected	
7	Leave Application Tracking	3.835 ^{e-10}	Rejected	
8	Manpower planning	3.202e-14	Rejected	
9	Performance Appraisal	< 2.2 ^{e-16}	Rejected	
10	Payment and Salary Administration	9.004 ^{e-10}	Rejected	
11	Promotion Management	< 2.2 ^{e-16}	Rejected	
12	Staffing	< 2.2 ^{e-16}	Rejected	
13	Training and Work Design	3.672 ^{e-07}	Rejected	
14	Grievance redressal System	1.164 ^{e-15}	Rejected	

e) H₀₅: There is no significant difference with respect to the users' perspective on key benefits accrued on HRIS across different institutions.

Table 9 indicated that there exist significant variations in the benefits of HRIS across higher institutions on key benefits at 5% significant level as p- values of in all cases are less than 0.05.

Table 9: Kruskal-Wallis – Benefits of HRIS across HEIs				
Sl no	Key Benefits	P-value	Working Hypothesis	Main Hypothesis
1	Reduction in paper work	1.755 ^{e-06}	Rejected	Rejected
2	Reduction in Manpower	1.739 ^{e-07}	Rejected	
3	Allowing Fewer errors	7.534 ^{e-09}	Rejected	
4	Quick Responses and Access	2.754 ^{e-05}	Rejected	

	to Information			
5	Improving Data Accuracy or Control	$< 2.2^{e-16}$	Rejected	
6	Reduction in Data Re entry	0.0007488	Rejected	
8	Helping or make more informed	0.0001684	Rejected	
9	Informal Decisions	6.792^{e-06}	Rejected	
10	Improving Employment Services	4.93^{e-11}	Rejected	

f) H_{06} :There is no significant variation in user perspectives in the barriers of HRIS based across higher education Institutions(HEIs)

Similarly, Table 10 indicated that there exists significant difference in the HRIS barriers across higher education institutions as all working hypothesis supported the same.

Table 10 : Kruskal–Wallis – Barriers of HRIS across HEIs				
Sl no	Key Barriers	P-value	Working Hypothesis	Main Hypothesis
1	Difficulty in changing organization culture	3.437^{e-12}	Rejected	Rejected
2	Lot of Paper work	$< 2.2^{e-16}$	Rejected	
3	Difficulty to computerize	$< 2.2^{e-16}$	Rejected	
4	Inadequate knowledge in implementing HRIS	$< 2.2^{e-16}$	Rejected	
5	Lack of expertise in Information Technology	$< 2.2^{e-16}$	Rejected	
6	Not perceived as an advantage of Information Technology	$< 2.2^{e-16}$	Rejected	
7	Insufficient Financial Support	$< 2.2^{e-16}$	Rejected	
8	Lack of support from top Management	$< 2.2^{e-16}$	Rejected	
9	Fearful of changing the way to do the things	2.374^{e-07}	Rejected	
10	No suitable software	$< 2.2^{e-16}$	Rejected	
11	Lack of commitment and involvement by all employees	$< 2.2^{e-16}$	Rejected	
12	Lack of Security/privacy fears	$< 2.2^{e-16}$	Rejected	
13	Staff resistance to change/culture problem	$< 2.2^{e-16}$	Rejected	

Discussion and Conclusion :

Discussion

The results of hypothesis H_{01} concerned with first objective shows that Gender wise there is no significant difference was observed in all the application of HRIS. However, outcome of hypothesis H_{02} shows that cadre wise (Assistant Professor ,Associate professor, Professor wise) significant difference is there in user perceptions, leaving one application only, i.e. File maintenance. According to the hierarchy of position occupied, the significant difference was noticed on this item. In case of hypothesis H_{03} , the hypothesis is accepted and therefore qualification wise (Post Doc, PhD and non-PhD) no significant variation observed user perception .The Post Doc, PhD and non-PhD groups have significant perception on the items. However, significant perception observed only on the items, namely, performance appraisal and file maintenance. These findings are partially similar to the finding of the study by Bamel et al. (2014) but items differ.

Considering that majority of the working hypotheses of H_{01} , H_{02} , H_{03} are accepted , on the whole it can be concluded that , no significant difference exist on applications of HRIS on demographic/demographic variations on three focus variables (gender, cadre and qualification). Therefore ,the role of demographics whether the gender ,cadre ,qualification perception are same or differ about the adoption of HRIS, the result of demographics has proved that no significant difference among HEIs and the result is contrary to the

findings of the study (Khan et al., 2017) which shows there was significant difference among demographic variables. The reason is nature of work culture and work assignment i.e. teaching and research in HEIs and most of the institutes are involved with similar kind of job.

These findings are contrary to prior studies from Igbaria et al. (1989) and Igbaria and Nachman (1990) but in support of findings from Kazén & Kuhl (2011) and similar to findings of the Bamel et al (2014).

The second objective of the study is to compare the user perspectives in three focus areas of HRIS (i.e. perceived applications, benefits and barriers) across different higher education institutions in three focus areas of HRIS (i.e. perceived applications, benefits and barriers.) The corresponding hypothesis show user perception on applications, benefits and barriers varied significantly among HEIs.

Interestingly, the results suggested that higher education institutes differed in HRIS application in Compensation Management, Discipline Procedure, Employee Reward Planning, Performance Appraisal, Training and Work Design and Grievance redressal System, File Maintenance, Job Analysis, Leave application Tracking, promotion Management and Staffing.

Surprisingly, absence monitoring activities of HRIS shows no significant difference in user perceives of different institutes. The study conducted by Samkarpad (2013) showed significant difference in user responses in activities of HRIS such file maintenance, absence monitoring, payment and salary administration, live application tracking, discipline and the procedures, work designing and job analysis, promotions, staffing, performance appraisal, training and development, compensation management, HR budgets and employee reward planning. Thus, user perception regarding major benefits and barriers across HEIs significantly differs. These institutes differs in size, structure and leadership and management style and so there differ in perceptions. This findings partially consistent with studies of Ngai & Wat (2006); Samkarpad (2013).

According to Ngai & Wat (2006) the statistical significance of “Quick response and access to information” and “Allowing for fewer errors” differed with the size of the company. Respondents from large and medium-sized companies perceived “Quick response and access to information” and “Allowing for fewer errors” as greater benefits than small companies when implementing HRIS. Interestingly, the perception of barriers related to “Lack of commitment from top managers”, and “Not perceived as an advantage at all” both differed significantly with the size of the company. This reflects the fact that large and medium-sized companies have more resources to implement HRIS to a greater degree than smaller companies. They obtain more advantages from implementing a HRIS. The same reason justify in user perceptions of HEIs in case of benefit and barriers of HRIS.

In fact, the size of institutes may have an impact on the achievement of a number of benefits and on the obstacles faced when implementing HRIS. Large institutes have well-established facilities such as intranets and extranets to access the required personnel information quickly and efficiently. Small institutes such as private and state generally lack the capital and technical resources to implement HRIS. A more feasible way to start may be to use prepackaged HRIS software. In order to purchase the most appropriate package, it is necessary to communicate with vendors and compare different packages to find the one that best fits the requirements of a HEI.

Conclusion

This study provides some insights into the user perspectives of HRIS by HEIs of North East India, which should help HR practitioners, acquire a better understanding of the current status, benefits, and barriers in the implementation of HRIS.

A comprehensive HRIS requires a sizeable budget to implement and maintain. If top managements do not understand how the HRIS bring the benefits to the company, they will not be willing to allocate valuable resources to the effort of implementation. Further promotional efforts as well as an action plan to demonstrate the concrete advantages of using HRIS are necessary if top management is to become aware of the benefits that can be achieved from implementing HRIS.

This study contributes to the existing body of knowledge by enhancing current understanding of HRIS which is an under-researched area. By employing the analytical tool, evidence confirms that user perceives may create many advantages and disadvantages for HEIs. The outcome of this research might help in making a proper strategy and plan for HRIS implementation. The suggestions from this piece of research might help the Indian HEIs as well as business organizations in getting the best outcome from HRIS implementation. Further research should address in adoption of HRIS which will pose some challenges to practitioners.

References:

- Al-dmour, R. H., Love, S., & Al-zu, Z. M. F. (2013). Factors Influencing the Adoption of HRIS Applications: A Literature Review. *International Journal of Management & Business studies* ,3(4) 4, 9-26.
- Altarawneh, I. & Al-Shqairat, Z. (2010). Human Resource Information Systems in Jordanian Universities, *International Journal of Business and Management*, 5(10), 113-128.
- Ball, K. (2001). The use of human resource management systems: a survey. *Personnel Review*, 30(6),677-693.
- Bamel, N., Bamel, U., Sahay, V., & Thite, M. (2014). Usage, benefits and barriers of human resource information system in universities. *VINE: The Journal of Information and Knowledge Management Systems*, 44(4), 519-536.
- Beadles, N. A., Lowery, C. M., & Johns, K. (2005). The Impact of Human Resource Information Systems: An Exploratory Study in the Public Sector. *Communications of the IIMA*, 5 (4).
- Boudreau, M.-C., & Robey, D. (2005).Enacting integrated information technology: a human agency perspective. *Organization Science*,16(1), 3-18
- Broderick, R., & Boudreau, J. W. (1992). Human Resource Management, Information Technology and the Competitive Edge. *Academy of Management Executive*, 6(2), 7-17.
- Budhwar, P. S. & Boyne, G. (2004). Human resource management in the Indian public and private sectors: An empirical comparison. *International Journal of Human Resource Management*, 15(2), 346–370. <https://doi.org/10.1080/0958519032000158554>
- Cedar (2009). Human resources self-service survey. *Baltimore: Cedar Inc.*
- Costello, A.B. & Osborne, J.W. (2005). Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most From Your Analysis. *Practical Assessment, Research and Evaluation*, 10, 1-9.
- Davarpanah, A. (2013). Human Resource Information Systems (HRIS) Success Factors In A Public Higher Education Institution Context. *3rd International Conference on Research and Innovation in Information Systems – 2013 (ICRIIS'13)*, 79–84.
- Davis, F.D. (1989). Perceived Usefulness, Perceived Ease of Use and User Acceptance of information technology, *MIS Quarterly*,319-339.
- Field, A.(2009),Discovering Statistics using SPSS. Sage :London
- Florkowski, G. W.& Olivas-Luján, M. R. (2006). The diffusion of human-resource information-technology innovations in US and non-US firms. *Personnel Review*, 35(6), 684-710.
- Gibbs, J. L., & Kraemer, K. L. (2004). A Cross-Country investigation of the determinants of scope of E-commerce use: An institutional approach. *Electronic Markets*, 14(2), 124-137.
- Gitari, J., Gachunga, H., & Kathoka, C. (2014). Effects of Human Resource Information Systems on Human Resource Management Practices and Firm Performance in Listed Commercial Banks at Nairobi Securities Exchange. *European Journal of Business and Management*, 6(29), 2222–2839.

- Gürol, Y., Wolff, A. & Berkin, E. (2010). E-HRM in Turkey: A case study. In I. Lee (Ed.). *Encyclopedia of E-Business Development and Management in the Global Economy*.
- Haines, V.Y., & Petit, A. (1997). Conditions for successful human resource information system. *Human Resource Management*, 36 (2), 261-275.
- Hausdorf, P. A. & Duncan, D. (2004). Firm size and internet recruiting in Canada: A preliminary investigation. *Journal of Small Business Management*, 42(3), 325-334
- Iacovou, C. L., Benbasat, I., & Dexter, A. S. (1995). Electronic data interchange and small organizations: Adoption and impact of technology. *MIS Quarterly*, 465-485
- Igbaria, M., & Nachman, S.A. (1990), Correlates of user satisfaction with end user computing: an exploratory study. *Information and Management*, 19 (2), 73-82.
- Igbaria, M., Pavri, F.N. & Huff, S.L. (1989). Microcomputer applications: an empirical look at usage. *Information and Management*, 16 (4), 187-196
- Jarvenpaa, S. L. & Ives, B., (1991). Executive involvement and participation in the management of information technology. *MIS Quarterly*, 15(2), 205-227.
- Kaiser, R.B., & Craig, S.B. (2011). Do the behaviors related to managerial effectiveness really change with organizational level? An empirical test. *The Psychologist-Manager*, 14(2), 92-119.
- Kazén, M. & Kuhl, J. (2011). Directional discrepancy between implicit and explicit power motives is related to well-being among managers. *Motivation and Emotion*, 35(3), 317-327.
- Khan, H., Hussainy, S. K., Khan, K. & Khan, A. (2017). The applications, advantages and challenges in the implementation of HRIS in Pakistani perspective. *VINE Journal of Information and Knowledge Management Systems*, 47(1), 137–150. <https://doi.org/10.1108/VJIKMS-01-2016-0005>.
- King, W. R. & Teo, T. S. H. (1996). Key dimensions of facilitators and inhibitors for the strategic use of information technology. *Journal of Management Information Systems*, 35-53.
- Kovach, K. A. & Cathcart, C. E. (1999). Human resource information systems (HRIS): Providing business with rapid data access, information exchange, and strategic advantage. *Public Personnel Management*, 28(2), 275-282.
- Kulik, C. T. & Perry, E. L. (2008). When Less is More: The effect of devolution on HR's Strategic Role and Construed Image. *Human Resource Management*, 47(3).
- Lee, G., & Xia, W. (2006). Organizational size and IT innovation adoption: A meta-analysis. *Information & Management*, 43(8), 975-985
- Moch, M. K., & Morse, E. V. (1977). Size, centralization and organizational adoption of innovations. *American Sociological Review*, 716-725.
- Mohanty, M. & Tripathy S. K. (2007). Case Study HRIS in the Indian Scenario: A Case Study of a Large Organization. *South Asian journal of management*. 16(2), 127-168
- Muchiri, M.K., Cooksey, R.W., Milia, L.V. and Walumbwa, F.O. (2011). Gender and managerial level differences in perceptions of effective leadership. *Leadership and Organization Development Journal*, 32 (5), 462-492
- Mumford, T.V., Campion, M.A. & Morgeson, F.P. (2007). The leadership skills strataplex: leadership skill requirements across organizational levels. *Leadership Quarterly*, 18 (2), 154-166
- Muriithi G. A. J., Gachunga, H., & Kathoka M. C. (2014). Effects of Human Resource Information Systems on Human Resource Management Practices and Firm Performance in Listed Commercial Banks

at Nairobi Securities Exchange. *European Journal of Business and Management Online* , 6(29), 2222–2839.

- Nagai, E.W. T. & Wat, F. K. T. (2006). Human resource information systems: a review and empirical analysis, *Personnel Review*, 35(3), 297-314.
- Noor, M. M., & Razali, R. (2011). Human Resources Information Systems (HRIS) for Military Domain-A Conceptual Framework. *International Conference on Electrical Engineering and Informatics*, 17–19 July, 2011, Indonesia.
- Oyefolahan, I.O. & Dominic, P.D.D. (2013). Knowledge management systems use and competency development among knowledge workers: the role of socio-technical antecedents in developing autonomous motivation to use. *VINE*, 43(4) , 482-500.
- Panayotopoulou, L., Vakola, M., Galanaki, E., 2007. E-HR adoption and the role of HRM: evidence from Greece. *Personnel Review*, 36 (2), 277–294.
- Park, H. J., Gardner, T. M., & Wright, P. M. (2004). HR Practices or HR Capabilities: Which Matters? Insights from the Asia-Pacific Region. *Asia-Pacific Journal of Human Resources*, 42(3).
- Parry, E. (2009). The benefits of using technology in human resources management. In T. Coronas & M. Oliva (Ed.). *Encyclopedia of human resources information systems: Challenges in E-HRM* , Hershey, PA: IGI Global, 110-116
- Rai, H. (2009). Gender differences: ingratiation and leader member exchange quality. *Singapore Management Review*, 31 (1), 63-72.
- Raymond, L., & Bergeron, F. (1996). EDI success in small and medium-sized enterprises: A field study. *Journal of Organizational Computing and Electronic Commerce*, 6(2), 161-172.
- Richter, A., Stocker, A., Müller, S. and Avram, G. (2013). Knowledge management goals revisited: a cross-sectional analysis of social software adoption in corporate environments, *VINE*, 43(2), 132-148.
- Ruël, H., Bondarouk, T. & Looise, J. K. (2004). E-HRM: Innovation or Irritation. An Explorative Empirical Study in Five Large Companies on Web-based HRM. *Management Revue*, 15(3) 364–381.
- Samkarpad, S. (2013) .Status of Human Resource Information Systems (HRIS) in Universities and Affiliated Colleges in Hyderabad. *The IUP Journal of Organizational Behavior*, XII (2), 20-42
- Snell, S., Stueber, D. & Lepak, D. (2002). Virtual HR departments: Getting out of the middle. In R. L. Heneman & D. B. Greenberger (Eds.). *Human resource management in virtual organizations* . Greenwich. CT: Information Age Publishing, 81-101.
- Tabachnik, B.G. & Fidell, L.S. (2001). Using Multivariate Statistics (4th ed.). *Pearson: Needham Heights, MA*.
- Tansley, C., and Watson, T. (2000). Strategic Exchange in the Development of Human Resource Information Systems (HRIS). *New Technology, Work, and Employment*, 15, 108–122.
- Teo T.S.H., Lim G.S., & Fedric, S.A. (2007). The adoption and diffusion of human resources information systems in Singapore. *Asia Pacific Journal of Human Resources*. 45(1): 44-62.
- Venkatesh, V., Davis, F.D. and Morris, M.G. (2007). Dead or alive? The development, trajectory and future of technology adoption research. *Journal of the Association for Information Systems*, 8 (4) , 268-286.
- Venkatesh, V., Morris, M.G., Davis, G.B., & Davis, F.D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly*, 27 (3), 425-478.

- Wickramasinghe, V. & De Zoyza, N. (2008), Gender, age and marital status as predictors of managerial competency needs: empirical evidence from a Sri Lankan telecommunication service provider. *Gender in Management*, 23 (5), 337-354.
- Wilcox, J. (1997). The evolution of human resources technology. *Management Accounting*, 3-5.
- Yeung, A., & Brockbank, W. (1995). Reengineering HR through information technology. *Human Resource Planning*, 18(2), 24-37.
- Zhu, K., Xu, S., & Dedrick, J. (2003). Assessing drivers of e-business value: Results of a cross-country study. *Proceedings of the 24th International Conference on Information Systems*, 181-193.