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HUMAN RESOURCES INFORMATION SYSTEMS IN S.M.E.'s

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Abstract

Information Technology (IT) is a critical resource for today's businesses (Pearlson, 2009). It supports a large amount of an organization's resources such as people, money and machine. Technology facilitates employees at their workplace. Employees could focus on their time and value - added work by integrating Human Resource Information System (HRIS) into their organization's set up. The main purpose of this study was to explore the extent to which SME's have adopted human resource information systems and to examine its uses, benefits and barriers in this industry. Based on previous studies, a structured questionnaire was constructed and a pilot test was conducted. Based on the results, it was then modified to capture data of HRIS users in SME's. The main findings of this study revealed that quick response and access to information were the main benefits of HRIS implementation. Inadequate financial support, intricacies involved in changing the organization's culture and lack of assurance from top management were some of the barriers to HRIS implementation. The current study attempts to help Human Resource Management (HRM) professionals to get greater understanding of the current HRIS uses, benefits and barriers and also to help to gain some insight into the performance and applications of HRIS in SME's. This could, in turn, help in improving the effectiveness of HRIS in this industry.

Keywords: Human Resource Information Systems, HRIS Benefits, HRIS Barriers.

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1. Introduction

Human Resource Information System (HRIS) is defined as interrelated components working together to collect, process, store and disseminate information to support decision making, coordination, control, analysis and utilization of an organization's human resources management activities **(Laudon and Laudon, 1998)**. The concept has three stages of development. The first stage is mechanical processing of the routine data relating to the paper work at the operational level in the organization. The second stage of Management Information System (MIS) involves some amount of detailed investigation and flexibility in report generation. The third stage is Decision Support System which assists decisions at higher levels in the workplace. Hence HRIS is considered as a systematic procedure for collecting, storing, maintaining and recovering data required by the organizations about their human resources, personnel activities and organizational

characteristics **(Kovach et al., 2002)**. The fundamental aim of the HR system is to facilitate strategic, tactical and operational decision-making, to appraise programmes, policies, practices, to aid in daily operations, to provide information and support to the management, development and utilization of HR in an organization **(Kavanagh et al. 1990)**. Successful employees, process and technology changes that enable a new level of productivity and performance, leads to innovation. **(Pande S. & Khanna P.,2012)**. For designing any integrated solution such as HRIS, these three components play a very important role i.e. Employees, Process and Technology. **(Pande S. & Khanna P., 2012)**. Remoulding the role of HRIS not only enhances the performance of the function but it also has the capacity to transform the HR area into a repository of new wealth **(Townsend & Hendrickson 1996)**. HRIS also has a probable responsibility in decision-support and strategic maneuvering and this helps in taking informed decisions, to extract most out of human resources, to streamline HR processes and better allocated HR too (Miller 1998).

In the context of SME organizations, the use of HRIS has definitely been neglected. The application of HRIS at SME's tackles many areas as in the case of most companies and it has been applied to few of the SME's. This study attempts to achieve quite a few objectives. First, it aims to probe issues based on the uses and benefits of HRIS. Secondly, it attempts to examine the extent to which SME's have implemented such HR software. Thirdly, it aims to explore the current uses, benefits and barriers to such kind of an implementation. Fourthly, to check statistically if HRIS benefits and barriers vary in the SME industry. This study would contribute at a practical level by helping HR professionals to have knowledge of the benefits,

uses and barriers of such an implementation, so that they could manage such a system well, as and when the organization decides to opt for it. In addition, this study is expected to fill the gap in HRIS literature through an empirical survey of the implementation of the HR software at SME's where there is a requirement for supplementary research work **(Altarawneh, 2009; 2010)**.

This paper presents the results of an empirical analysis of the implementation of HRIS among some of the SME companies in Mumbai, India. The paper is structured as follows: first, a review of the benefits and potential barriers to implementing HRIS, review on the various HR functions, inputs on the objective of the study and methodology; third, presentation and analysis of the survey data; and fourth, discussion and conclusion.

2. Literature Review

Organizations are wavering in their intention to use a human resource software unless they are convinced of the potential benefits that it would bring to the workplace **(Ngai and Wat, 2006)**. The purpose of HRIS is to provide service in the form of accurate timely information to the users. There are numerous advantages to organizations in using an HRIS **(Beckers and Bsat, 2002)**. Providing a complete picture as a single, comprehensive database, this facilitates organizations to present structural connectivity across units and activities and increase the speed of information transactions **(Lengnick-Hall and Lengnick-Hall, 2006)**. The ability of the firms to harness the potential of such a software depends largely on a variety of factors such as the ability and motivation of employees in adopting such a change, such as augmented automation across and between functions **(Ngai and Wat, 2006)**. Universally, there is no standard HRIS

application for its immediate adoption since the modules for application are customized to suit every organization. The HRIS applications are able to produce more effective and faster outcomes than can be done on paper.

But majority of organizations are customizing the HRIS application according to the needs of the workplace. Most of the small businesses devote a great amount of time and energy to performing menial, human-related tasks. The efficiency of HRIS is that the system is able to create efficient and faster outcomes than can be done on a document. The study by **Krishnan and Singh (2006)** aimed at exploring the issues and barriers faced by nine Indian organizations in implementing and managing HRIS. The main HRIS problems were lack of knowledge about HRIS and lack of importance given to HR departments in the organizations. It also included freeing up of functional resources for attention to more strategic matters **(Gore et al., 1996)**.

It has been proved that the effective prerequisites and use of HR information can create a competitive advantage at the workplace, ensuing in a lower turnover, augmented job satisfaction and high motivation levels **(Cox & Blake 1991)**. In the good old days, the development of the HRIS, focused mainly on skill and payroll functions **(Walker 1993)** and it aimed at providing efficient access to information connecting to job content and employees. The legacy HR systems maintained personnel data about employees, organizational data, salary data and employment history data mainly for administrative and operational use **(Nankervis et al. 1996)**. As computers gradually emerged to become a way of life, it became more powerful in late 1950's and payroll and personnel systems advanced next. By the 1970's and 1980's, the increasing intricacy of payroll systems stipulated additional flexibility

in and access to information systems and this consequently led to further sophistication in various HRIS products. Nowadays, many 'off-the-shelf' software packages for HR are available in the market. These systems are used for various HR functions like record keeping for employee demographics, service status, pay and job information, dependant details, performance review, employee benefits, education and skills updation, payslip , salary status, performance bonus and incentive payouts, training and development, time and attendance etc. Exhaustive resource systems include broader functions such as applicant tracking, job profile maintenance, personality profile analysis and training management.

The review of literature shows a variance in the analysis of HRIS usage with at least two extreme uses **(Ball, 2001)**. In this regard, **Kovach and Cathcart, (1999)** and **Kovach et al. (2002)** argue that HRIS data and information could be useful for organizations which help in reducing costs and time and it could be also used for analytical decision support. **Martinsons (1994)** identified different types of HR systems use which was based on the comparative degree of complexity. He depicted this as an uncomplicated automation and he then proceeds to classify payroll, benefits administration, maintaining of employee records electronically as simple and effortless usage of HR software. He then proceeded to characterize the usage of HRIS in recruitment and selection, training and development, HR planning, performance appraisal as fairly sophisticated, as it aids in recording and analyzing the information related to both the employees and the company. It assists in documentation, such as employee handbooks, safety procedures etc **(Fletcher, 2005; and Lee, 2008)**. In many organizations, the software has been used to support daily HRM operations. **(Ball, 2001,**

Hussain et al., 2007 and Delorme and Archand, 2010). **Beckers and Bsat (2002) Kovach et al. (2002)** listed numerous administrative and strategic advantages in using HRIS. They indicated at least five reasons why organizations should use HRIS. They were:

(1) Augment competitiveness by developing and enhancing HR measures and activities.

(2) Create different types of HR-related reports.

(3) Transfer the focus from transactional processing to strategic HRM.

(4) Have a buy in from employees and make them a part of HRIS

(5) To support and reengineer the whole HRM function of organizations.

Broderick and Boudreau (1992) studied the manner in which HRIS can contribute to cost reductions, quality and customer satisfaction and innovation. **Sadri and Chatterjee (2003)** stated that when HRIS function was computerized, faster decision making occurred on the development front and also on the planning and administration of HR because such data are easier to store, update, categorize and evaluate. It can be used to maintain decision making, to appraise employees of the workplace polices or to maintain daily operating concerns **(Kundu et al., 2007)**.

HRIS Benefits

Organizations hesitate to opt for an HRIS unless they are convinced of the benefits that this would bring to their workplace **(Ngai and Wat, 2006)**. Now a days, businesses are usually geared to undertake changes provided that they see a strategic competitive advantage in doing so. Organizations have problems in implementing any new kind of technology, including HRIS, due to the lack of budget and skills. They need to be convinced of the benefits that it would bring to their organizations.

The common benefits of HRIS frequently cited in studies include improved accuracy, faster information process, higher information accuracy, provision of timely and quick access to information, improved planning and program development, enhanced employee communication and the saving of costs **(Ngai and Wat, 2006, Lederer, 1984; Tetz, 1973; Wille and Hammond, 1981)**.

Barriers to the Implementation of HRIS

Kovach and Cathcart (1999), Altarawneh (2010) indicated that the biggest barriers or obstacles to managing a HRIS include the cost of setting up a HRIS which can be high, lack of budget commitment and support from top management, problems with time management, the need to work and coordinate with other departments, lack of information technology support, lack of HR knowledge by system designers and the lack of applications / solutions for HR users, lack of sufficient capital and skills, lack of support and commitment and lack of qualified HR staff.

One of the main reasons for delay in HRIS implementation in some organizations is the fear psychosis created by 'technology' and 'IT' in the minds of the management. The relationship between HRIS usage and organizational size has been recognized by quite a few researchers. **Ball (2001)** emphasizes the low-level usage of an HRIS system as output, both by HR practitioners and by organizational size. **Thaler Carter (1998)** indicated that there are two primary differences between small and large organizations acquiring HRIS i.e. cost factor and risk factor. They emphasized that small organizations do not need complex sophisticated HR systems and may not be able to afford such systems in comparison to larger organizations. Smaller organizations are prone to risk in a greater way and may find it relatively

difficult to absorb downtime, training required, time and problems related with adopting new HR software **(Ball, 2001)**. Most of the barriers above can be mitigated when evangelists exist in the organization as they not only possess the requisite expertise to ensure smooth adoption of the open source HRIS application but also can work in conjunction with an external consultant. **(S. Pande & N. Gomes,2013)**

Human Resource – Functions

According to **Patchett (1983)**, some of the activities under HR are manpower planning, payroll, labour control, safety management, industrial relations and compensation and benefits.

Manpower Development and Planning: A manpower planning exercise is done to maintain satisfactory HR standards both in quality and quantity. This is done in order to maximize the performance and well being of existing HR and to anticipate potential HR surpluses / deficits and identify problems, if any. The key stages comprise of: (1) assessment of current manpower (2) assessment of external factors (3) establishment of training and development policy and (4) forecasting labour supply and demand **(Pettman & Tavernier 1984; Storey & Sisson 1993).**

*Payroll Processing***:** The payroll system consists of information relating to the employee remuneration and payment details, employee deductions of claims and leave, if any **(Walker 1993)**.Payroll system capabilities include the provision of a variety of printed documents (e.g. pay stubs reports, third party reports, etc.). It also serves as a support for necessary MIS reports and administrative analyses. Organizations are making headway towards the integration of payroll systems with other HR functions and these are, by and large, driven by government rules and regulations of that particular country and in addition, with the increasing complexity of a whole lot of benefits **(Nankervis et al. 1996)**.

Labour Control: Labour control enables the organization to optimize labour output on an hourly basis **(Moore 1988)**. Factors likely to influence labour control, would include the impact of employment changes on labour, labour turnover, accidents and unsafe working conditions. Labour proceedings provide critical accounting information for payroll such as time and attendance leave, allowances, overtime and its allowances, labour costing and rosters for schedules too **(Mincks & Johnston1998)**. Labour records and reports also enable one to keep track of the workers' productivity, in terms of output per unit of labour.

*Safety Management***:** Organizations with a poor safety record, gradually become less competitive because of increased amounts of premium on account of insurance decline in employee morale, increased costs and loss of profits **(Mincks & Johnston1998)**.Sufficient records and dissemination of information to employees regarding the company's policies and procedures on safety, accident prevention, substance abuse, hazardous materials, accident reporting and investigation are some of the key information requirements.

Industrial Relations: Inadequately supervised labor force can bring about adverse effects on organizational operations. They include inefficiency, low productivity, low employee morale and high absenteeism through covert clashes and disagreements at the workplace or overt differences resulting in loss of valuable working time through lockouts, strikes, go slow etc **(Nankervis et al.1996)**. The management of industrial relations generally requires information concerning wages, working hours and working conditions.

3. Statement of the Problem

Nowadays, there is strong competition in the area of HRIS. The aim of this paper is to find out what will be the uses, benefits and barriers of an HR software in SMEs' and to find out if SME's are using HRIS for the day to day HR - related work.

4. Need for the Study

The need of this study is find out what will be the uses, benefits and barriers of an HR software in SMEs in an Indian scenario and to find out if SME's are using HRIS for the day to day HR related work

5. Objectives

1. To explore the issues surrounding the uses and benefits of HRIS.

2. To examine the extent to which SME's have adopted HRIS.

3. To explore the current uses , benefits and barriers to HRIS implementation at SME's.

4. To examine whether or not HRIS benefits and barriers vary among SME's .

6. Hypotheses

Based on the above objectives, the following hypotheses were formulated.

1. (Ho1)-There is no significant difference in the perception of companies regarding HRIS applications.

2. (Ho2)-There is no significant difference regarding the benefits achieved through the adoption of HRIS.

3. (Ho3)-There is no significant difference in the perception of the respondents regarding HRIS application.

4. (Ho4)-There is no significant difference in the perception of the respondents regarding barriers for the adoption of HRIS.

7. Methodology

This section includes sample selection, data collection, period of study and tools used. There is not much research done on the use and effectiveness of HRIS at SME's. As it was difficult to obtain the exact number of SME's, the Researcher randomly selected eight of them, which had a total employee strength of 2,200 employees. A purposive random sample was used. For the purpose of this study, only junior and mid level managers were considered. The duration of the study was from August 2013 to December 2013.

Based on the review of literature, a self-administered structured questionnaire **(Ngai and Wat (2006)** and **Ball (2001)** was used. The 4-point and 5-point scales, used for the questionnaire, were also pilot-tested by some of the academicians **(Ron, 1991)**. The reliability of the questions was tested. The Cronbach's Alpha test was used for reliability. The Cronbach Alpha's value of HRIS application, containing 15 questions, was 0.953, clearly indicating that the questions were highly reliable, followed by the adoption of HRIS Cronbach alpha for 11 questions at a value of 0.963 and finally, for 10 questions at 0.896. Based on the recommendations received, a modified questionnaire was developed and then administered to the sample respondents.

8. Procedure

Questionnaires were administered to 540 employees from various SME's. Employees from supervisory grade, junior and middle level management were considered. Effective response rate was 70 percent, as the Researcher received 380 completed questionnaires.

9. Results

Table-1 represents the profile of the sample. Of the 380 users who participated in

the survey, 85 percent indicated that they employed a computer and other devices for HR - related activities during regular work hours and even beyond on a daily basis. Interestingly, six percent of them were doctorates, 51 percent of them possessed master's degree, followed by 26 percent of them possessed bachelors degree, and 16 percent had passed diploma and XII. With regard to experience, 47 percent of respondents had put in less than three years of experience, followed by 32 percent of respondents having 3 year plus to 6 years of experience, 14 percent of sample had between 7 years plus – 10 years of experience and seven percent had experience in the range of 10 years plus to 14 years. 85 percent of respondents reported that there was a separate HR department, and 15 percent reported that they did not have a separate HR department. 24 percent of respondents reported that less than 3 people in the HR department and 76 percent reported that 3-8 people were working in HR department.

Table-2 indicates the major HRIS activities. Mean scores and standard deviations were calculated for each activity. It is clear from Table-2 that HRIS was used in most of the organizations to evaluate compensation management, benefit allocation, performance appraisal, leave application tracking, daily activity reports, reward management, training and development, salary payments and advances, personal details updation , absence monitoring and work design. It is clearly indicated by the mean scores, varying from 2.1 to 3.4 for these activities.

Table-3 indicates that the major benefit obtained through the adoption of HRIS was standardizing the procedures, quick response time and access to information, reduction in paperwork, HR manpower reduction , improved

data accuracy, reduction in errors, streamlined HR processes, greater information accuracy, improved planning and program development, enhanced employee communication and cost savings. The mean was clearly indicated by the mean scores, varying from 2.05 to 2.28, and the standard deviation scores were also calculated.

Table-4 indicates the barriers to the adoption of HRIS. Mean scores and standard deviations were calculated for each barrier. It is clear from Table-4 that the barriers were lack of commitment and involvement of all employees, lack of budget , high cost of setting up and maintaining an HRIS, lack of support and commitment from Senior Management, too much of paper work to automate, lack of IT support and expertise, lack of staff, difficulties in changing the organization culture, lack of sufficient capital and skills , lack of qualified HR staff, lack of cooperation with other departments and lack of HR knowledge by system designers. It is clearly indicated by the mean score variation from 2.30 to 2.95, for these barriers.

One of the objectives of the research was to study the differences among SME's in terms of perceived HRIS applications, benefits and barriers. To assess the same, one-way analysis of variance (ANOVA) was applied to compare the means of perceived HRIS applications, benefits and barriers to determine if there were any significant differences among various SME's.

Table-5 indicates that there were no significant differences among various SME's with regard to the benefits resulting from the use of HRIS, with the exception of improved data accuracy, reduction in errors and greater information accuracy. Hence the alternate hypothesis is accepted.

Table-6 indicates that there were no significant differences among various SME's with regard to the barriers that resulted from HRIS, with the exception of lack of qualified HR staff and lack of HR knowledge by system designers. Hence the alternate hypothesis is accepted.

Krushal-Wallis Test and Monto Carlo techniques are non-parametric tests which are alternative to the one-way analysis of variance, to identify the differences among the observations. These tests use the ranks of observations, with the assumption that the observations are on an interval scale. The realization that this could be applied to any permutation test, on any dataset, was an important breakthrough in the area of applied statistics. The earliest known reference to this approach is **Dwass (1957)**. This type of permutation test is known under various names: approximate permutation test, Monto Carlo permutation tests or random permutation tests. They are non parametric tests and alternative to ANOVA, and they aim to test the differences between several independent groups.

Table-7, indicates that there was significant variation in the perception of respondents towards HRIS application. But the null hypothesis states that there is no significant variation in the perception of the respondents regarding HRIS application which was clearly indicated in the compensation related areas such as compensation management, reward management, salary payments, advances and deduction. The same fact was also indicated by the Chi square and Monto Carlo technique. Hence the alternative hypothesis is accepted.

From **Table-8**, it is clear that there were significant differences among the SME's with respect to benefits of HRIS adoption on areas like improved data accuracy, reduction in errors and greater information accuracy. In other words, there was significant variation in the perception of respondents towards the benefits achievable through the adoption of HRIS. But the null hypothesis states that there is no significant variation in the perception of respondents regarding the benefits achievable through the adoption of HRIS. Majority of applications like standardizing policies and procedures, quick response times and access to information, reduction in paperwork, HR manpower reduction, streamlining HR processes, improved planning and program development, enhanced employee communication and cost savings, indicate that there was no significant variation in the perception of respondents regarding the benefits achievable through the adoption of HRIS. The same fact was also indicated by the Chi-Square and Monto Carlo technique. Hence the alternative hypothesis is accepted.

From **Table-9**, it is clear that there was significant variation in the perception of respondents towards the barriers to HRIS adoption. But the null hypothesis states that there is no significant variation in the perception of respondents regarding the barriers to the adoption of HRIS. The same fact was also indicated by the Chi-Square and Monto Carlo technique. Hence the alternative hypothesis is accepted.

10. Discussion

The main purpose of the study was to explore the extent to which the SME industry has adopted HRIS and to examine the uses, benefits, applications and barriers in this industry due to the implementation of HRIS. The results presented in **Table-1,** indicate that technology users, who apply HRIS in SME's, are highly educated employees with majority of employees having three years of experience. All the

companies i.e. eight of the SME's, had an HR / personnel department. It was found that the size of the HR/personnel departments varied from small to medium size. As the organizations increased in size, HRM functions should slowly be developed into more complex and sophisticated systems. Based on the review of previous research work, it was found that HRIS is used for the computerization of various HRM activities rather than for decision-support (Ball, 2001; Kovach and Cathcart, 1999; Kovach et al., 2002; Ngai and Wat, 2006; Hussain et al., 2007; Delorme and Arcand, 2010).

Table-2 highlights the fact that majority of employees used HRIS for some simple routine administrative purposes. The data reveal that there was no actual utilization of HRIS which could actually help in cost savings and increase the level of competitiveness too. **Ball (2001)** and **Ngai and Wat (2006)** stressed that HRIS should not only be designed to automate HR tasks but also to gain administrative advantage. It should also be used in other areas like decision making which provides strategic advantages for companies. The findings regarding HRIS usage profiles, highlight the fact that though companies invested in HRIS, the current usage of HRIS was mostly in the area of compensation and for some simple routine administrative purposes. Majority of participants indicated that such systems were adopted for general employment information such as leave management, absence monitoring and payroll services. This means that there was no actual utilization of HRIS software which could aid in cost savings, growing competitiveness and shifting the role of the HR function from a transactional role base to more of a strategic one.

Table-3 statistically presents major benefits of implementation such as standardizing policies and procedures, quick response time, access to information and reduction in paper work. Enhanced employee communication and cost savings were other apparent benefits. However, the responses reflected only the personal opinions of the sample on HRIS benefits and not the actual achievable HRIS at their workplace. **Table-4** explains that some of the barriers to the implementation of HRIS were lack of commitment and lack of involvement of all employees, difficulty in changing the organization culture and high cost of setting up and maintaining an HRIS system. This could be explained by the fact that most SME's confront financial crisis, probably due to global recession and hence they face shortage of money to be allocated for design and developing such a system. In any industry, in order to promote the smooth adoption of HRIS, it is essential first to ensure the financial and non-financial support to set up HRIS and then one also needs a management commitment, dedication and responsibility to ensure a complete adoption of such a system. Moreover, the sustenance of top management is one of the most crucial and critical factors for successful implementation **(Kovach and Cathcart, 1999)**. The main responsibility lies with the top management for providing sufficient financial support and adequate resources for building a successful HRIS. Lack of financial support and adequate resources would predictably lead to failure. It also requires a sizeable budget to implement and maintain the HRIS. If the top management fails to understand what benefits this system brings to the organization, they will not be willing to allocate valuable resources, time and efforts for implementation **(Ngai and Wat, 2006)**.

Table-5 reveals that there were no significant differences among various SME's with regard to the benefits due to HRIS, with the exception of improved data accuracy, reduction in errors and greater information accuracy. Hence the alternate hypothesis is

accepted. However, it is important to mention that the responses on the perceived HRIS benefits reflected the participants' personal opinion and not the actual achievable benefits of HRIS at their workplace.

Table-6 explains that the greatest barriers to the implementation of HRIS were lack of commitment and lack of involvement of all employees, lack of proper budget, a lot of paperwork which is difficult to computerize and inadequate knowledge in implementing the HRIS. This could be explained by the fact that most of the organizations could not provide budgeting support due to recession. To implement HRIS, a lot needs to be done in relation to updating the past data and recruitment of people who have expertise in the HRIS area. It is necessary to set up a committee which can monitor the commitment of different SME's and this could promote the smooth adoption of HRIS.

Table-7 reveals that most of the perceived benefits and barriers varied significantly. Regardless of the varied size of the SME industry at large, there were many other classification variables that make the SME's dissimilar, such as employee strength, age, financial and non financial resources, organizational culture etc. Interestingly, the results of this study suggested that the SME's varied in the following challenges: lack of expertise in IT, inadequate knowledge in implementing the system, lack of commitment from senior managers, no suitable HRIS, complexity in changing the organization's culture and employees apprehensive of changing the manner in which they do things. It was found that they were also varied in the following benefits: improving data control, reducing data reentry and immediate use of data, allowing for fewer errors, standardizing programmes and procedures, tracking and controlling the different

HR functions. Importantly, the findings from **Table-7** suggest that SME's suffered from low financial support for HRIS since it is a costly system from lack of commitment and lack of involvement by all employees, supervisors and managers and above all, the management .

The fourth objective of the study was to compare differences among SME's in terms of HRIS perceived benefits and barriers, based on organisation size and time that HRIS was used. Surprisingly, the study found no significant differences among SME's based on the perceived benefits and barriers of implementing HRIS by the size of the SME's. Overall, it was found that most of the perceived applications, benefits and barriers varied significantly. Interestingly, the results suggested that SME's differed in the following challenges with regard to the HRIS applications: file maintenance, absence monitoring, payment and salary administration, live application tracking, discipline and procedures, work designing and job analysis, promotions, staffing, performance appraisal, training and development, compensation management, HR budgets and employee reward planning. Surprisingly, out of the 11 activities, the following five activities of HRIS showed significant difference: improving the employment services, tracking and controlling of different HR functions, helping to make more informed informal decisions, standardizing programs and procedure, and reducing the paperwork. As for the barriers to adopting the HRIS, the results suggested that SME's differed in the following challenges (**Table-9**) like insufficient financial support, difficulties in changing organizational culture, a lot of paperwork which was difficult to computerize, no suitable software, lack of support from the top management, lack of commitment and support, HRIS not being perceived as an advantage and inadequate knowledge in implementing HRIS.

11. Limitations

The Researcher felt that senior level employees could have been a part of the data collection.HR employees at all levels could have also been a part of the sample.

12. Conclusion and Suggestions

Based on the above discussion, three conclusions can be made. First, despite the investment in HRIS by SME's, it was used for HRM activities to obtain general information related to HR like budgets and application tracking and transfers. Second, in adopting the activities, the major benefit achieved was standardizing the procedures and programs. Third, it was difficult to change organizational culture. Fourthly, a lot of paperwork posed a challenge to computerization. Finally, there was inadequate knowledge in implementing HRIS. The most important observation is that lack of budget was one of the major barriers to the entire HRIS process. This lack of budgetary support was because the top management did not allocate the budget , as they did not perceive the same as important. This was also due to recession and the management did not want to incur such an expense. The present study has many implications: First, this study is useful to the administrators for planning and implementing HRIS where extensive attention needs to be given to the applications of HRIS. Second, the administrators must play a proactive role to support HRIS implementations in their organizations. Third, administrators need to be convinced by the strategic benefits of HRIS in order to get the grants. In India, shortage of high quality trained manpower is due to faulty professional education system **(Jalote, 2008)**. Academically, the present study aims at maintenance of transparency in all the activities. It is clear that the education system is currently not in the best of shape and it will require a lot

of help to improve. This study provides some insights into the implementation of HRIS at SME's., which should help the administrators acquire better understanding of the HRIS applications, benefits and barriers. In a globalized world, to face the new challenges and competition, it is necessary to use HRIS because of its global reach.

13. Scope for Further Research

It would be interesting to see if this study can be done in other sunrise industries in India and to see if the findings are similar in other industries .One could further extend the same to established companies and see the various kinds of barriers they face in implementing HRIS in SME's.

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Table-1 Profile of the Sample

1	Using computers and other devices* for HR related activities during office hours	Yes	340
		No	40
		Total	380
2	Education Levels	Std. XIIth & above	15
		Diploma Holders	45
		Bachelors Degree	100
		Masters Degree	195
		Ph.D.	25
		Total	380
3	Work Experience	Less than 3 years	180
		3 yrs plus to 6 years	120
		7years plus to 10 years	53
		10years plus to 15 years	27
		Total	380
* Other Devices - Laptops, iPads, Blackberry, Smart phones & other such devices			

Source: Primary Data

Table-2 HRIS Activities and its Usage

Rank	HR Activity	N	Mean	Standard Deviation
1	Compensation Management	380	2.1	1.23
2	Benefits Allocation	380	2.2	1.12
3	Performance Appraisals	380	2.4	0.98
4	Leave Application & Tracking	380	2.7	0.87
5	Daily Activity Reports	380	2.8	0.99
6	Reward Management	380	3.05	1.22
7	Training & Development	380	3.07	1.32
8	Salary payments, Advances & Deduction	380	3.1	1.14
9	Personal Details Updation	380	3.15	1.26
10	Absence Monitoring	380	3.2	1.32
11	Work Design	380	3.4	1.23

Source: Primary Data

Table-3 Benefits Obtained through the Adoption of HRIS

Rank	Activity	N	Mean	Standard Deviation
1	Standardizing Polices and Procedures	380	2.05	1.34
2	Quick response times and access to information	380	2.07	1.5
3	Reduction in Paperwork	380	2.08	1.43
4	HR Manpower Reduction	380	2.13	1.76
5	Improves Data Accuracy	380	2.16	1.89
6	Reduction in Errors	380	2.19	1.89
7	Streamlining HR processes	380	2.22	1.48
8	Greater information accuracy	380	2.23	1.50
9	Improved planning and program development	380	2.26.	1.49
10	Enhanced employee communication	380	2.13	1.65
11	Cost savings	380	2.28	1.56

Source: Primary Data

Table-4 Barriers to Adoption of HRIS

Rank	Activity	N	Mean	Standard Deviation
1	Lack of commitment and involvement of all employees	380	2.3	1.32
2	Lack of proper budget	380	2.3	1.34
3	Cost of setting up and maintaining an HRIS can be high	380	2.32	1.4
4	Lack of support and commitment from Senior Management	380	2.46	1.9
5	Too much of paper work makes it difficult to automate	380	2.65	1.67
6	Lack of IT support and expertise	380	2.76	1.9
7	Lack of staff	380	2.79	1.93
8	budget Difficult to change organization culture	380	2.83	1.95
9	Lack of qualified HR staff	380	2.87	1.99
10	Lack of cooperation with other departments	380	2.92	2.06
11	Lack of HR knowledge by system designers	380	2.95	2.07

Source: Primary Data

Table-5 One-Way ANOVA-Benefits obtained through the adoption of HRIS adoption Benefits

Sr. No.	Activity		Sum of Squares	df	Mean Square	F Value	Sig
1	Standardizing Policies and Procedures	Between Groups	13.23	2	4.51	3.897	0.034
		Within Groups	22.34	377	1.89		
		Total	**35.57**	**379**			
2	Quick response times and access to information	Between Groups	14.25	2	6.45	4.098	0.018
		Within Groups	23.34	377	1.45		
		Total	**37.59**	**379**			
3	Reduction in Paperwork	Between Groups	14.67	2	5.67	5.223	0.029
		Within Groups	23.76	377	1.44		
		Total	38.43	**379**			
4	HR Manpower Reduction	Between Groups	15.67	2	4.54	6.678	0.236
		Within Groups	24.45	377	1.56		
		Total	**40.12**	**379**			
5	Improves Data Accuracy	Between Groups	9.67	2	6.59	1.234	0.005
		Within Groups	24.56	377	0.096		
		Total	**34.23**	**379**			
6	Reduction in Errors	Between Groups	10.89	2	4.56	1.467	0.007
		Within Groups	26.78	377	1.54		
		Total	**37.67**	**379**			
7	Streamlining HR processes	Between Groups	11.34	2	5.69	2.67	0.074
		Within Groups	28.69	377	1.58		
		Total	**40.03**	**379**			
8	Greater information accuracy	Between Groups	11.67	2	5.73	1.69	0.005
		Within Groups	28.87	377	1.64		
		Total	**40.54**	**379**			
9	Improved planning and program development	Between Groups	11.74	2	5.78	1.73	0.018
		Within Groups	28.91	377	1.76		
		Total	**40.65**	**379**			
10	Enhanced employee communication	Between Groups	11.79	2	5.79	2.69	0.024
		Within Groups	29.13	377	1.72		
		Total	**40.92**	**379**			
11	Cost savings	Between Groups	11.85	2	5.86	2.76	0.019
		Within Groups	29.95	377	1.79		
		Total	**40.54**	**379**			

Source: Primary Data

Table-6 One-Way ANOVA- Barriers to Adoption of HRIS Barriers

Sr. No.	Activity		Sum of Squares	df	Mean Square	F Value	Sig
1	Lack of commitment and involvement of all employees	Between Groups	0.78	2	0.435	0.234	0.789
		Within Groups	26.89	377	1.345		
			27.67	**379**			
2	Lack of proper budget	Between Groups	0.89	2	0.467	0.256	0.785
		Within Groups	26.79	377	1.765		
			27.68	**379**			
4	Lack of support from Senior Management	Between Groups	207.87	2	105.234	2.786	0.113
		Within Groups	29.32	377	45.987		
			237.19	**379**			
5	Too much of paper work, difficult to automate	Between Groups	1.23	2	1.896	2.675	0.043
		Within Groups	32.35	377	1.234		
			33.58	**379**			
6	Lack of IT expertise	Between Groups	1.34	2	0.098	3.877	0.657
		Within Groups	34.67	377	1.235		
			36.01	**379**			
7	Lack of staff	Between Groups	1.29	2	1.896	2.764	0.049
		Within Groups	32.39	377	1.321		
			33.68	**379**			
8	Difficult to change organization culture	Between Groups	1.33	2	1.893	2.786	0.018
		Within Groups	33.65	377	1.334		
			34.98	**379**			
9	Lack of qualified HR staff	Between Groups	1.43	2	1.898	2.798	0.005
		Within Groups	33.85	377	1.467		
			35.28	**379**			
10	Lack of cooperation with other departments	Between Groups	1.55	2	1.921	2.863	0.017
		Within Groups	33.97	377	1.523		
			35.52	**379**			
11	Lack of HR knowledge by system designers	Between Groups	1.65	2	1.967	2.921	0.005
		Within Groups	34.21	377	1.613		
			35.86	**379**			

Source: Primary Data

Table-7 Krushal-Wallis and Monto Carlo Technique for Differences Based on Samples Usage

HR Activity	Chi Square Value	df	Sig	Significance Monto Carlo Technique	Lower Bound	Upper Bound
Leave Application & Tracking	3.334	2	0.123	0.119	0.112	0.125
Daily Activity Reports	2.234	2	0.087	0.073	0.064	0.182
Work Design	4.231	2	0.309	0.332	0.326	0.345
Compensation Management	5.321	2	0.217	0.209	0.198	0.005
Benefits Allocation	1.876	2	0.076	0.065	0.057	0.279
Personal Details Updation	2.764	2	0.065	0.056	0.045	0.682
Absence Monitoring	1.567	2	0.112	0.108	0.101	0.123
Performance Appraisals	4.329	2	0.138	0.132	0.123	0.145
Reward Management	3.864	2	0.123	0.118	0.109	0.002
Training & Development	3.873	2	0.008	0.004	0.001	0.385
Salary payments, Advances & Deduction	2.864	2	0.009	0.006	0.001	0.008

Source: Primary Data

Table-8 Krushal-Wallis and Monto Carlo Technique for Benefits Based on Samples Usage

Description	Chi Square Value	df	Sig	Significance Monto Carlo Technique	Lower Bound	Upper Bound
Standardizing Policies and Procedures	6.324	2	0.234	0.228	0.222	0.234
Quick response times and access to information	3.456	2	0.098	0.090	0.092	0.108
Reduction in Paperwork	4.567	2	0.070	0.061	0.064	0.72
HR Manpower Reduction	8.907	2	0.147	0.143	0.138	0.149
Improves Data Accuracy	3.098	2	0.014	0.016	0.011	0.022
Reduction in Errors	7.987	2	0.012	0.009	0.007	0.010
Streamlining HR processes	5.986	2	0.145	0.135	0.127	0.145
Greater information accuracy	4.432	2	0.008	0.010	0.006	0.009
Improved planning and program development	6.874	2	0.325	0.297	0.289	0.308
Enhanced employee communication	7.436	2	0.254	0.247	0.242	0.257
Cost savings	2.298	2	0.012	0.006	0.004	0.008

Source: Primary Data

Table-9 Krushal -Wallis and Monto Carlo Technique for Barriers Based on Samples Usage

Description	Chi Square Value	df	Sig	Significance Monto Carlo Technique	Lower Bound	Upper Bound
Lack of commitment and involvement of all employees	0.345	2	0.234	0.243	0.222	0.234
Lack of budget	1.243	2	0.712	0.744	0.138	0.149
Difficult to change organization culture	2.400	2	0.145	0.149	0.127	0.145
Lack of support from Senior Management	6.037	2	0.165	0.176	0.242	0.257
Too much of paper work, difficult to automate	0.765	2	0.126	0.134	0.132	0.139
Lack of IT expertise	0.384	2	0.257	0.267	0.253	0.274
Lack of staff	2.346	2	0.128	0.143	0.138	0.148
Difficult to change organization culture	1.945	2	0.345	0.356	0.352	0.364
Lack of qualified HR staff	4.557	2	0.125	0.132	0.127	0.139
Lack of cooperation with other departments	3.456	2	0.167	0.173	0.168	0.179
Lack of HR knowledge by system designers	0.746	2	0.342	0.347	0.341	0.349

Source: Primary Data