

Evaluating the Practices of Electronic Human Resources Management (E-HRM) as a Key Tool of Technology Driven Human Resources Management Function in Organizations-A Comparative Study in Public Sector and Private Sector Enterprises of Bangladesh

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Abstract: *Technology becomes a key wheel of today's corporations and business houses. Managing a big number of human resources in the organizations are becomes more smooth and easier through adoption of technology in human resources management functions with its outfit benefits. Big corporate has been tremendously changed their jacket through adoption of technology in their business and routine strategic management affairs. The Human Resources Management is such cluster and business partner of the organizational management where electronic human resources management called e-HRM is becomes the prime focus in new century around the globe. This study is an effort to assess gap, if any, between the current level of electronic HRM practices and desired level of electronic HRM practices in two different categories of business organizations- public sector and private sector in Bangladesh. Data was collected from the employees, HR Managers, system administration department of 120 organizations of public sector and private sector organizations of Bangladesh. Five scale Likert Questionnaire method was used to collect responses from the respondents. A current level of overall e-HRM practices index was computed by adding all the items of the questionnaire. Statistical technique mean score, t-test, Spearman's rank correlation method was used to analyses the data. Result of t-test showed both organizations differ significantly on the current level of e-HRM practices. It also an effort to depicts the effects and importance of using electronic system in core functions of human resources management particularly in Human Resources planning & budgeting, Recruitment and Selection, Training and Development, , Performance management, compensation & benefit Management, Employee file & Database in public and private sector.*

Key Terms: *Technology, e-HRM, Human Resources planning & Budgeting, recruitment and selection, training and development, performance management, compensation & benefit, employee file & database*

I. Statement of the Problems

The practice of e-HRM adhered to transform the system & technology supported by HR base in organizations. In course of time, Human Resources Management becomes an important and key elements to run organizations in Bangladesh irrespective to the nature and size of business. In recent years of global transformation, infusion of cutting edge technology in business organizations, corporation in Bangladesh have shown a tremendous growth and change in adopting newer technology to cater their business and support business partnering activities. In last few decades this changes necessities a huge demand of efficient, competent, knowledgeable, energetic and enthusiastic human resources personnel to ensure stronger strategic function for HR assumptions within the organizations. As a result, Human resources management department is no more doing a manual task; rather the invention of computer based information systems, advancement of electronic tools made the job sound and more efficient to manage the activities of the department (Masum, Bhyuian, Kabir, 2013). The utilization of e-HRM as well as its underlying technology, as a pathway to execute strategies, guidelines, practices as well as regulations pertaining to managing human resources is ought to integrate an impact on how human resource functions operating in the long run across the organizations in Bangladesh that excelled with technology.

The key emphasis of electronic Human Resource Management (e-HRM) adopted executive practices in the field of manpower handling, sourcing database management, human resources planning and recruitment control. Employee supports activities. So, e-HRM is visibly grounded as well as established on diversely rooted expectations and constructive circumstances of functional human resources process, such as reduction of training and development costs, speeding up HR planning, improving manpower quality and efficiency, maintaining e-database of employees, and having a stronger strategic partnering function for human resources management activities within organizations and stakeholders. The utilization of e-HRM as well as its underlying

technology, as a pathway to execute strategies, guidelines, practices as well as regulations pertaining to managing human resources, is ought to integrate an impact on how human resource role and functions operates within the organization to strengthen and partnering in the long run.

Likewise, e-HRM uses web-based & data archiving technology to make available human resources function more meaningful, systematic, result oriented as well cost effective towards the organizations. From this foundation e-HRM has lengthened to hold close the liberation of practically every functional HR guiding principles. They access these roles characteristically with intranet or further web technology guides and tools. The scope has been more broaden where recruitment and selection process has been outsourced through technology in Bangladesh recent years. Professional headhunting firms has opened their business window through their e-product of advertising on behalf of organization & candidate can express their interest through web portal.

Presently, most public and private enterprise in Bangladesh are extensively started using technology based job positing, CV tracking and screening, online interview instead of in-person, online learning and developments course manuals, web based policy & process disclosure, online based background checking, archiving database, maintain employee history. As a result, manual paper works has been tremendously reduced Bangladesh that makes a great change slogan. So to continue the same with catering many more organization e-HRM becomes a great tool for smooth functioning of all those new efforts. Bangladesh has major labor force of the globe (Ernst & Young, & MCCI 2007) as such it requires adopting sound human resource supervision practices (Beardwell and Holden as cited in Weeratunga, 2003). The need to affirm of implementation of newfangled human resources management practices through e-HRM process for big working populations within public and private sector becomes an essential for sound, efficient human resources management functions.

II. Objectives of the Study

The study mainly aimed at finding the gap between the current practices and desired practices level of e-HRM in public and private sector enterprises in Bangladesh. It efforts to gather practical availability and uses of human resources management system and evaluating its importance as a key driver for stabilize and smoothen of human resources management functions in today's competitive edge. The specific objectives can be identified as:

- To evaluate the extent of current level of e-HRM practices in public sector organizations.
- To evaluate the extent of current level of e-HRM practices in private sector organizations.
- To compare public sector and private sector organizations with respect to current level of e-HRM practices.
- To measure the relative preference on current level of practices.
- To point some problems persisting with e-HRM practices.

Hypothesis:

Keeping the above main and specific objectives in mind following hypothesis was formulated and tested as alternative hypothesis. There will be a significant difference between public sector and private sector organizations as regards to current level of e-HRM practices as an important tool of human resources management functions.

III. Literature Review

Hossain M & Islam MS, (2015), the emerging role of e-HRM to optimize the human resources functions where it has focused the importance of using technology as "system" in human resources management functions in the light of service industry of Bangladesh. It shows the emerging role with importance and effects of using electronic system throughout the core functions of human resources management among the industry and find some thought provocation role to emerge-HRM, difference between current and expected level on some identified uses. The study further encompasses with some practical recommendation on how to use and optimize the uses of e-HRM in pragmatic and smart way through individual and collective efforts in the said industry of Bangladesh.

The uses of e-HRM solutions should lead to valuable outcomes for the organization as it decreases costs, improve communication and decrease time to accomplish human resources management functions. The last decade has seen a significant increase in the number of organizations gathering, storing and analyzing human resources data using different types of advance software on e-HRM solutions widely called HRIS is the topmost of them (Masum, Bhyuian, Kabir, 2013). Thus, it is important to find the uses & evaluation of e-HRM in different HRM functions like; selection & recruitment, training & development, payroll systems, performance management.

The utility of an HRIS is its positive impact on traditional HR processes such as recruitment, selection and training and development (Targowski & Deshpande, 2001). HRM starts off by the staffing practice because organization is nothing without its right human resources. Almost all the organization stake their stars by hiring their employees, but it is always not possible that organization get all its potential human resources from the same place (Troshani, Jerram, and Rao, 2011). Information Technology brought revolution by the discovery of web, by shifting most of manual work to computer system making things more clear, widen and effective (Wiblen, Dery, and Grant, 2010).

AKM Masum, (2015) studied the factor influencing the adaptation of e-HRM in banking industry on Bangladesh. The purpose of the study is identifying the important factors that contribute to adoption of e-HRM among banks in Bangladesh. The result shows that employee's individual attributes, top management support, compatibility, IT infrastructure and industry pressure are important factors that influencing management decision to adopt e-HRM among banks. The practical implication of the findings is discussed at the end of this paper and recommendations for further research are also addressed.

There are circumstances for combination of HR role (Ruël et al. 2004) as expected that the acceptance of e-HRM involves the construction of HR purpose. In other expression, it is accepted that the implementation of e-HRM affect the errands of stakeholders of HR role for performing HR actions. When organization has executed e-HRM, a number of HRM activities are provided throughout net based-technologies as well as turn out to be the duty of executives or employees within the process.

Further advantage of e-HRM is cost reduction (Foster, 2010). Additionally, e-HRM makes use of tools such as Internet and software which in theory should facilitate the flow of information and communication between employees. It can also provide an online selection of employee trainings and courses, present valuable data easily accessible to all staff members (Paauwe et al. 2005). Most large organizations use e-HRM systems to attract future employees (Stone & Lukaszewski 2009). Additionally, these systems are increasingly used to train employees, manage their performance and administer compensation and benefits (Gueutal & Stone 2009).

All aspects mentioned before sound appealing to any organization. However, prior e-HRM studies have not fully proven if these advances in HRM have had only positive effects. In some cases, it is believed that electronic systems cause negative attitudes of employees, since they lack personal communication and human interaction (Stone & Lukaszewski, 2009).

Thong (1999) pointed out that, CEO's attitude toward technology information has a great impact on the decision to IT adoption in Singapore small and medium sized enterprises (SMEs). Some researchers agreed that the IT expertise of the employees and their acquaintance with the electronic tools facilitate e-HRM adoption (Ruël, Bondarouk, & Looise, 2004; Voermans & van Veldhoven, 2007).

IV. The Scope of the study

With ongoing & rapid role of HR functions in organizations, adoption of advanced technology become a crying need now and to be onwards. Bangladesh is still far way compared to other south-Asian countries. Some organization integrated technology in limited scale where most of those are busy with record keeping of leave & attendance management, with few employee service needs, back end office administrative and supports activities that is not goes mainstream and core HR functions. More importantly, the patronization of management to invest for integrated HR software is also high concern. Definitely, e-HRM reduce bundle of papers & files, enhance HR efficiency both manned & functional, optimize costs, comply HR work process in more high voltage & finally assist in business process through functional & strategic partnering.

This study cover evaluating the practices of electronic human resources management system as technology driven integrated system among public and private sector enterprises of Bangladesh. It covers Human Resources planning & budgeting, Recruitment and Selection, Training and employee Development, Performance management, compensation & benefit Management, Employee file & database management.

V. Methodology of the Study

This study is conducted with a view to evaluate the practices of electronic human resources management as a key tool of technology driven human resources management functions in public and private sector enterprises. Accordingly questionnaire, sampling and data collection done over a period of time. Other methodology has been set as per the requisite of the study to compare and find the gap between the practices among the two sector.

a) Sample Selection

There are 120 organizations from two sector in Bangladesh have been selected on a random basis to evaluate e-HRM in practices in overall human resources management functions of the organizations and business institutions. It covers Banks & Financial Institutions, Supply chain & freight logistics, airlines,

hospitals, autonomous body, corporations, specialized body, university, manufacturing, international joint ventures, medium scale trading business.

b) Study Period and Data Collection Method

The study is conducted over a period from June 1, 2015 to February 2016. Data for the study were collected through structured questionnaire, interview with the user employee, human resources managers, administrative & establishment department and some mid-level managers of the selected sectors. Thus, the nature of the data is primary. Secondary data collected from Journal, website, article and organizational attachment in human resources department of the author.

c) Demographic Characteristics of the Respondents

A total of 120 respondents have been requested to reply through physical interview, email, 1-1 discussion interviewed. Some HR managers, executives of the sector also been interviewed for the said purpose. Out of 120 respondents 100 found male while 20 were female. Among them there were Manager/Department Head, Assistant/Associate Director, Executive/Jr. Executive, Non Manager/electronic HR system operator, personnel of Admin department, IT support departments.

d) Statistical Tools used for data collection & analysis:

The collected data were fed to the statistical software called SPSS and also MS Excel has been used to compute and analyze. Statistical tools like, Mean, t-test and spearman's *rank correlation method* were applied to evaluate current level e-HRM is practices and desired level of e-HRM practices within the said sectors and the draw the reason behind the gap between.

Questionnaire method was used to collect data from the respondents. The questionnaire was developed to measure current level of e-HRM practices followed in different business organizations in public and private sector. Each statement is rated with a five point scale i.e. strongly disagree(1), disagree(2), neither agree nor disagree(3), agree(4), and strongly agree(5). The minimum score is $1 \times 25 = 25$ and the maximum score can be $5 \times 25 = 125$. Thus, the total scores ranges from 25 to 125 points. Minimum score is $1 \times 25 = 25$ and maximum score is $5 \times 25 = 125$. For the present study, Desired Level of e-HRM Practices has been considered as $4 \times 25 = 100$ score. Excellent Level of e-HRM Practices has been considered as $5 \times 25 = 125$ score.

Maximum score and minimum score of the scale are 125 and 25 respectively. Desired level services of e-HRM practices have been calculated as 100 points (as $4 \times 25 = 100$). The score above 100 is excellent i.e. the current level of e-HRM Practices offered is excellent.

T-Test was used to observe difference of means between the public sector and private sector organizations. Spearman's rank correlation method used to correlate to show the relativity and preference of data gather from two sectors. Mean score used to compare the degree of possibility of identified statement to be evaluate between the two sectors.

VI. Findings Result and Interpretations

Tabel-1: Profile of respondent selected

Sector wise			
Serial	Sector	Number of respondent	Percentage of total
	Public	60	50
	Private	60	50
Total		120	100
Gender wise			
	Male	100	83
	Female	20	17
Total		120	100
Designation wise			
	Manager/Dept Head	35	29
	Assistant Director	25	21
	Executive/Jr. Executive	30	25
	Non Manager/system operator	30	25
Total		120	100

Table-1- Current scenario and level of overall e-HRM practices in Public and Private Sector Organizations (using Mean score & T-test).

Type of Organization	N	Mean	T-test
Public	60	74.40	3.78
Private	60	78.48	

Source: Data analysis

Current level of e-HRM practices and desired service level of e-HRM practices are compared in above table (Table-1). It shows that, both categories of organizations are in clear cut deviations between current and desired service level in course of their electronic human resources management practices. The gap was found more in the public sector as compared to the private sector organizations which is 4.08. Mean score of public sector on current level of e-HRM practices has been found to be 74.40 as against desired level 100. Similarly the mean score of private sector organizations on current level of electronic human resources practices has been found to be 78.48 as against desired level 100. Though it is statistically possible to comparing the data and showing the difference but still no mean score reach relatively closed to the desired level of 100 which could more authenticate and maximize the practices. As such it can be comment that, both sector level of e-HRM practices is still lagged behind as a whole and need to improve through necessary efforts.

Table-2: Mean Score, and t-test Score of Public and Private Sector Organizations on functional category of human resources management in two Sector (using Mean score & T-test).

Type of Organization	N	Mean	T-test
Human Resources Planning and Budgeting			
Public	60	11.93	5.81
Private	60	13.27	
Recruitment and Selection			
Public	60	14.43	4.43
Private	60	16.00	
Training and Employee Development			
Public	60	11.78	1.53
Private	60	12.32	
Performance Management			
Public	60	11.80	1.40
Private	60	12.55	
Compensation and Benefit			
Public	60	11.80	.67
Private	60	12.55	
Employee file and database			
Public	60	12.42	.75
Private	60	12.62	

Source: Data analysis

The results presented in table -2 show the t-value of public sector and private sector organizations on six core HR functions like Human Resources Planning and Budgeting, Recruitment and Selection, Training and Employee Development, Performance Management, Compensation and Benefit, Employee file and database. According to the result presented in table-2, a significant difference was observed between the two organizations on all the dimension except employee file and database recording. As such, the mean score of private sector has been found to be more than the public sector. This finding may be due to the reason that private sector gives more emphasis on electronic e-HRM practices. The reason might be expected that, private sector are more concern and enthusiastic to on board and adopt the technology driven human resources function in their organization. It is understandable that, private sector focus on cost optimization, system and process efficiency, timely performing of business partnering functions, less paper as well as manual works etc as their management objectives for securing strategic advantages. More importantly, it seems that private sector organizations believe it is important for the survival specifically in a highly competitive age and agile business environment.

There is no significance of difference between the two groups on *compensation & Benefit, Employee file and database* record management as the t-value (.67, .75) is also not significant though mean score (11.80, 12.55) (12.42, 12.62) shows the practices is higher in private sector. It seems both type of organizations are giving equal weightage on compensation & benefit, employee file & database. Compared to the compensation & benefit with employee file & database, it exhibits that, both sector has closer focus and practices on using technology driven employee file and database as an electronic software. On the other hand, compensation and benefit management is a set of manual job except the point asked in the questions statement. The in-house system is mostly uses for pay calculations, pays & allowances disbursements, pay slip. The performance appraisal done through system but the pay review and reward communication made by manual letter in different period of the year.

Table-3: Measuring relativity and preference of data on uses of E-HRM in two sectors through Spearman’s rank correlation methods:

Types of HR activity performed by using electronic HRM	Ranked by respondent, R1 (Public sector)	Ranked by Respondent, R2 (Private Sector)	D= R1-R2	D ²
There is uses of integrated electronic tools/System for human resources planning	2	3	1	1
Human resources budget in exhibits through HR system for managers	2	3	1	1
Managers submit human resources need for budget through intra HR system	1	2	1	1
Budget versus actual recruitment are available in HR system to use by Managers and HR dept.	3	2	-1	1
Every recruitment process started through e-requisition	2	1	-1	1
Organization have own online job portal	3	2	-1	1
Organization have internal server connected with HR system to track CV by HR & functional Heads	1	2	1	1
Disqualified CV can be systematically denied	2	1	-1	1
Candidate can apply through HR system	3	2	-1	1
Managers can submit employee training need through HR system	3	4	1	1
Training needs assessment done by HR system	2	1	-1	1
Training data are recorded in each employee history is visible by all	1	2	1	1
There is online training manual, course in system	3	4	1	1
Employee can score self by HR system	2	1	-1	1
Manager & employee can jointly review & discuss on performance	2	3	1	1
Performance reward and development areas are available in HR system	5	4	-1	1
Employee can see yearly performance review result	4	3	-1	1
Compensation data are available in system	3	2	-1	1
Employee provided pay slip & certificate through HR system	2	3	1	1
Annual pay review are systematically adjusted through HR system	3	2	-1	1
Salary and allowances are paid by system	2	1	-1	1
Employee history are maintained through HR system	2	3	1	1
Employee has access on the system through ID	2	4	2	4
Confidentiality is maintained through admin restriction	2	3	1	1
Employee address, joining dates, total tenure are maintained through	3	2	-1	1
N=25	60	60	0	ΣD ² =28

$$R = 1 - \frac{6 * 28}{N (N^2 - 1)}$$

$$R = 1 - \frac{6 * 28}{25 (25^2 - 1)}$$

$$= .98$$

Above table-3, relative preference input by respondent in the statement has been arrayed accordingly. Relative preference of data has computed as per Spearman’s rank correlation methods. According, the computed value recorded to .98. It meant that the relative preference of respondent of both public and private sector in question of using and adopting electronic human resources management to manage a technology driven HR functions in organizations is preferable for technical, strategic, support and day to day human resources management functions efficiently, smoothly and assertively.

✦ List of electronic HRM system available and used by different organization for technology driven functions:

Last few years, firms are using different types of e-HRM solutions. The cost of e-HRM is still high and most cases the system and software is customized. Some organizations are outsourcing the software instead of buying by their own cost. We have gather below types of e-HRM solutions available currently.

Name of system/Software	Areas of functions/activity
WORKDAY	Integrated ERP also used for financial management. It covers recruitment, selection, pay roll, separations, employee information, compensations
ORACLE- HRMS	Integrated for Oracle recruitment, Oracle Self-Service Human Resources, Payroll, HR Intelligence, Oracle Learning Management, Oracle Time and Labour.
SAP HR-ERP	Human Capital Management (HCM) for Business, All-in-One: Rapid HR
HRIS	Limited and customized for leave, attendance, holiday, all hourly allowances
Abra Suite	Exclusively for payroll management.
ABS	General Information, Wages information, emergency information, Reminders, Evaluators, Documents and photos, Separation information.

CORT: HRMS	Applicant tracking, Attendance tracking and calendars, Wage information, Skills tracking, Reports-to information, Status tracking, Job history tracking, Cost center tracking, Reviews and tracking, Mass update and change tools etc. (Bhuiyan & Rahman, 2014)
HRSOFT	Identify and track senior managers, Assess management skills and talents, Generate a wide range of reports, resumes, employee profiles, replacement tables and succession analysis reports, Identify individuals for promotion, skills shortages, unexpected vacancy, Discover talent deep, Competency Management, career development, align succession plans etc (Bhuiyan & Rahman, 2014)
Human Resource Microsystems	Sophisticated data collection and reporting, flexible spending accounts, compensation, employment history, time off, EEO, qualifications, Applicant/Requisition Tracking, Position Control/Succession Planning, Training Administration, Organization Charts, HRIS-Pro Net (employee/managerial self-service), HR Automation (e-Notification and e-Scheduler), and Performance Pro (performance management).
PEOPLESOFT	Enterprise e-Recruit, Enterprise Resume Processing, Enterprise Services Procurement, Workforce Planning, Warehouse
SPECTRUM HR	iVantage® and HRVantage®. iVantage is a Web-based HRIS.
VANTAGE: HRA	'Point-and-Click' report writing, internal Messaging System for leaving reminders to yourself, to someone else or to everyone using HRA - very useful for Benefit Applications, Disciplinary Actions, Special Events, Employee Summary Screen for Basic, Leave (Absenteeism) and Salary/Position History, skills & training module, Leave Tracking, (Bhuiyan & Rahman, 2014)
Others	Some firms use their own customized HRIS software like Frontiers, e-views, Biotech HRM system, PIMS, ERP solution, Basel ii, Flex cube, for HR management purposes HCM, SAP, SAM, ERP, and HRIS. Some organization has been outsourced from professional service provider and some organization has device with some limited applications.

VII. Identified Problems in e-HRM practices in public and private sector with prescriptions:

In pertinent to the objectives of the study there were some problem found on smooth practices and on board the adaptation of the e-HRM to ensure a technology driven human resources management function in organizations. Some problems are unique and some are scatter because of the types and ownership nature.

- Patronization of top management to use Technology driven overall human Resources functions.
- Less interest of the management to spend much for technological innovations to develop HR functions.
- Absence of budget to updates and upgrade human resources software and system.
- The overall input and utility originated from e-HRM functions is not clear to employee.
- Reluctance of employee to grab and adopt new system.
- The attitude of employee to cope up with changes as resistance.
- The attitude and efforts of HR department to educate employee on using technological HR system.
- Inadequate IT system.
- Inadequate IT set up and active follow up.
- Unavailability of official network/Internet connections.
- Frequent failure of weak internet connections and necessary bandwidth.
- No or poorly done needs analysis on the outcome and result towards the organizations.
- Politics / hidden agendas of some group of management in public organizations.
- Failure to involve / consult significant groups and made an implementation team.
- Lack of communication & training on e-HRM uses.
- Possibility reducing manual manned function which may reduce manpower.
- Attitude of “more file more jobs”.
- Absence of complete & fulfilled database
- The system is closed and only within office premise.
- Less aware about human resources management function among employees.
- Acceptance and cooperation by functional heads, supervisor to capitalize the outcome from e-system.

All the identified problems are self explanatory having individual and collective solutions. Respective matters have to be taken care of by the concern in order to mitigate the problems to get best outcomes from the system and benefit with the technology and focus towards the Human Resources Management functions. It must incorporate with new ideas, knowledge and thoughts from the practical corner and as per the customized needs & value of the organizations.

VIII. Concluding thoughts:

Enabling technology is a slogan in Bangladesh. The government has initiated so many extended programs to make the touch of technology in each segment as revolutionary mode. As a key segment of economy, Business is diversified where continuous change is always expected and that the reality to win the competitive edge through unique system & process. The success of business is entirely depends on integration and proper infusion of state of art technology into each system and subsystem on the functions. The hidden

benefit derived from technology is some time not seen & touched but is give reward from backend. Managing Human resources is now a day's big prospects and important task for the management as a whole. System and Technology is a great tool that can enable the life and strategy easier and closer for living managing people transition in organizations. This is the high time at the age of global transformation into technology from manual. So, human resources management functions is such a key stone in organizations which need immediate address to adopt technology as key driver to steeping ahead the functions and cater its maximum utility.

It is extracted that significant difference is prevailing between private and public sector enterprises of Bangladesh where the private sector are in significantly better position. Obviously, e-HRM is new and interesting field of study at the junction of human resource administration as well as adoption of information system through technology.

Compared to the private sector public sector need more of initiates and big plan through robust governmental initiatives in Bangladesh in technology driver e-HRM and obtain the finest benefits from the practices

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