# Effect of HRM practices in implementation and adoption of Human Resource Information System (HRIS) in some selected manufacturing industries of Midnapore district of West Bengal – an empirical analysis

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*Abstract: Managing the workforce of the manufacturing companies has always been a challenging and onerous task with the Human Resource (HR) department. In this platform, the department plays a strategic role in creating an employee oriented and productive workplace; advancing a positive work environment. The department maintains its efficacy through solid information system infrastructure which easily aligns with that of the business objectives. Human Resource Information System (HRIS) is a key tool that strengthens the functioning of the different HR practices in the organization and brings decisive results. The system enhances applications such as human resource planning, career- planning, training projections, monitoring employee performance, analyzing data regarding the human resource thereby making strategic reports. The growing need of reinforcing and corroborating human resource management functionalities, HRIS has been well accepted in organizations today. For the survey, primary data was collected based on convenience sample. The feedback was taken from the different HR staffs and officials of the selected manufacturing companies. Response rate turned to 92 %. Multiple regression Analysis was conducted on the proposed research model and was found that the Training and Development practices have the most significant influence in adoption of HRIS in organizations.*

*Index Choice: Human Resource (HR) department, Human Resource Information System, efficacy, strategic reports*

## I. PRELUDE

As organizations are going global and entering into a hyper – competitive era, the department of Human Resource is becoming an integral part of the strategic operations. The department of Human Resource Management is executing supplemental tasks apart from involving in personnel inflow into the organization. Today, the HR department is more into the function of people management. The enormous and strenuous function of managing the workforce requires organizing and analyzing the huge data of employees along with communicating the information. This requires new techniques and effective systems to ensure efficacy of the department. Thus institutionalization of Human Resource

Management (HRM) department and its capability of handling administrative burdens have lead to the adoption of Human Resource Information System (HRIS) in various firms (Al-Dmour, et al, 2013). Moreover, identifying the department as a 'strategic partner' has augmented the implementation and adoption of HRIS (Lengnick-Hall & Moritz, 2003). HRIS not only advances the work of the HR personnel's but also adds value to the work and the department which need to be fully utilized as it emerges as a strategic tool in bringing effectiveness of various management functions (Sadiq, et al, 2012).

## II. RESEARCH OBJECTIVE

➢ To determine the impact of HR activities towards adoption of HRIS in organizations
➢ To identify which of the HR activities affect the most towards implantation and adoption of HRIS in organizations

## III. RELATED REVIEW OF LITERATURE

Workforce planning is a salient process in an organization. A huge manpower can be well managed if the overall status of the workforce is well organized and systematized. HRIS manages the raw data and the information of the extensive employees, their current job position, shortfall of personnel, supports in administering the skill inventory of the organization which ultimately helps to design an impeccable recruitment plan (Nagendra & Deshpande, 2014). HRIS executes outstanding strategic activities such as manpower supply and forecasting, absenteeism and turnover analysis, applicant tracking which reinforces the firm to plan for their human resources in a better way (Khera & Gulati, 2012). HRIS assists the HR staffs in analyzing the different job in the organization as per the survey and develop a job description which also form the basis for job evaluation (Khashman & Khashman, 2016). HRIS plays an immense role in identifying the current personnel who would be able to cater the future needs of the organization. It also aid in identifying the prospective employee and track their way of growth and development which would assist the HR experts along with

**Revised Manuscript Received on December 28, 2018**.
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the management of the organization to carry on the succession planning (Ankrah & Sokro, 2012). Employees need to be guided and trained to ensure overall development as they can revolutionize the business processes and stand as a competitive advantage for the firm. HRIS is a sophisticated information expert system that provides the information regarding the various training programmes conducted so far in the organization in different departments which cannot be administered solely by the HR personnel's (Muriithi, et al., 2014) and then perform a training need analysis and develop an instructional design. It would be efficacious for the HR department to track employees' training and developmental efforts through such a system (Dorel & Martinovic, 2011). Career development initiatives can be easily undertaken through HRIS by analyzing the data concerning suitability of the job and the required employees who would be able to perform it well. This would aid HR department to strike a balance and improve the potential ability of the individual employees (Panjaitan, et al, 2016). In order to derive a fair performance appraisal of the employees, HRIS has been adopted to obtain a consolidated report and conduct analysis based on their performance which would make the work uncomplicated for HR professionals to take decisions of promotion and rewards (Kundu & Kadian, 2012). The effort of employees can be improved and upgraded through this system as it helps to track the activities and performance of the employees and whether it is aligning with that of the organizational objectives (Durai, 2010). The administrative efficiency of the HR department is maintained with the support of HRIS as it helps in assessing the performance of the employees regularly and providing them feedback about their entire performance and also intimating about the future performance expectation level from them (Beulen, 2009). HRIS ameliorates the work of the HR division by strategically arranging and managing the data resource, keeping the record of salaries and managing the payroll system (Kazmi & Naaranoja, 2014). Managing the compensation work in organization like wage / salary costing, administering flexible benefits, analyzing benefits usage, vacation usage, changes in the pay structure through HRIS eases the work of the HR department (Mathis & Jackson, 2013). The arduous job of HR division in calculating the pay benefit as a percentage of the entire operating cost of the organization is made simple through HRIS. This provides quality information to the management to take prudent decisions (Rangriz, H. et al, 2011). Functioning of HRIS in the organization assists in various HR practices like salary forecasts, providing the pay budget, maintaining the pay scale history, position and grade pay of the employees (Nath & Naidu, 2015). HRIS contributes towards the HR segment of the organization by marinating the data regarding the number of union negotiations that has taken place in the company, their costs and analyzes the trend of grievance management by the HR personnel's (Kenneth & Charles, 1999). The HRIS aids the personnel department staffs in making the labor relations report of the organization thus making the work transparent and effective (Nawaz, 2014). HRIS provide the human resource professionals with information in an integrated form regarding the employee work history, attitude survey results, exit interview analysis and trend and negotiations which gives

a picture about the employee relations in the organization so that these can be utilized to resolve issues and take astute decisions (Aggarwal & Kapoor, 2012). A model of the conceptual framework of the study based on the variables which have been discussed above is depicted below:
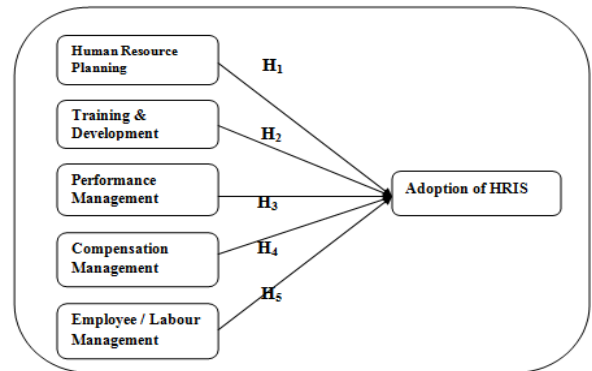


**Fig 1: Conceptual Framework**

## IV. HYPOTHESIS DEVELOPMENT

On the basis of the literature review and conceptual framework of the study, the following hypotheses can be stated:

$H_1$: There is a significant impact of Human Resource Planning practices in adoption of HRIS in organizations.

$H_2$: There is a significant impact of Training and Development practices in adoption of HRIS in organizations.

$H_3$: There is a significant impact of Performance Management practices in adoption of HRIS in organizations.

$H_4$: There is a significant impact of Compensation Management practices in adoption of HRIS in organizations.

$H_5$: There is a significant impact of Employee / Labour Management practices in adoption of HRIS in organizations.

## V. RESEARCH METHODOLOGY

| Research Design | Descriptive Research with single cross sectional survey |
|---|---|
| Sources of Data | Primary data |
| Method of Data Collection | Formalized and concealed questionnaire |
| Sampling Design | Convenient Sampling |
| Sample Size | 287 |
| Sampling Elements | Male & Female, Age: 25-55 yrs, HR staffs and HR officials |
| Scaling Technique | 5 Point Likert Scale |
| Area of Research | East and West Midnapore District of West Bengal |
| Period of Study | February 2018 – May 2018 |
| Tools for Analysis | Factor Analysis (Principal Component) & Regression Analysis has been used with SPSS 21 version |

**Table: 1 Sampling and Data Collection Details**

## VI. DATA ANALYSIS AND INTERPRETATION

### Validity Testing

Evaluation of the validity of the research instrument has been done through construct validity. Construct validity has been assessed through convergent and divergent validity. Convergent validity has been indicated by observing the factor loadings which show all the correlation coefficient value of the variables for each factor is greater than 0.50 and is therefore significant. It has also been identified that there is a weak association between variables of one factor with other factors (weak correlation) which proves discriminant validity.

### Reliability Analysis

In order to check the degree of consistency between the various measurements of a variable, reliability testing is performed (Hair, et al, 2015). The coefficient alpha or Cronbach alpha, the most popular internal reliability testing method has been used. Coefficient value of 0.6 or less is considered unsatisfactory (Bajpai, 2013). Our study shows coefficient level 0.905 which is satisfactory.

| Cronbach's Alpha | N of Items |
|---|---|
| **.905** | **20** |

Total Cases: 287

**Table: 2    Reliability Statistics**

### Factor Analysis

Before conducting exploratory factor analysis, data adequacy tests on the data collected were validated based on the statistical assumptions shown below.

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | 0.891 |
|---|---|---|
| **Bartlett's Test of Sphericity** | Approx. Chi-Square | 5237.268 |
| | Df | 287 |
| | Sig. | **.000** |

**Table: 3    KMO and Bartlett's Test**

KMO measures the sampling adequacy for each variable in the model and for the complete model and indicates the proportion of variance among the variables that might be caused by underlying factors. Lower the proportion, more suitable is the data for factor analysis. Measure of Sampling Adequacy (MSA) value above 0.5 is necessary for the overall test and for each individual variable for proceeding into factor analysis. The MSA value was found to be 0.891 which shows sampling is adequate for factor analysis. Bartlett's Test of Sphericity shows the value .000 which indicates that the correlation matrix has significant correlations among the variables.

After observing the appropriateness of the data, we may proceed for factor analysis.

**Table: 4 Labeling of Factors and Overall Reliability**

| Label | | Statements | Factor Loading | Cronbach's Alpha Reliability |
|---|---|---|---|---|
| **Human Resource Planning Activities** | Q | HRIS assists in forecasting and preparing manpower requirement and manpower inventory reports respectively | **.872** | **.895** |
| | Q | Preparing job description and person specification with the support of HRIS eases the HR mangers' work of internal job matching | **.847** | |
| | Q | Absenteeism analysis and Turnover analysis can be easily done through HRIS to track the trend | **.796** | |
| | Q | HRIS identifies the vacancy, tracks the applicants and their response rate, short lists candidates along with job offer refusal analysis | **.764** | |
| **Training & Development Activities** | Q | HRIS evaluates the trainee performance report and identifies the training need | **.884** | **.887** |
| | Q | Performs cost benefit analysis of the training programme conducted | **.812** | |
| | Q | HRIS tracks and identifies the individual skill history and develops a career plan report for individual employees | **.771** | |
| | Q | Analyses and prepares the trainer / instructor feedback report | **.712** | |
| **Performance Management Activities** | Q | HRIS measures and compares the actual performance with standards | **.793** | **.912** |
| | Q | Processes the performance appraisal report of the employees and identifies where he / she is standing | **.751** | |
| | Q | Helps in tracking the activities & performance of the employees along with attitude and attendance maintenance report | **.692** | |
| **Compensation Management Activities** | Q | HRIS aids in generating on time payroll and insurance and incentive reports | **.911** | **.901** |
| | Q | Calculates the pay benefit as a percentage of the entire operating cost of the organization | **.863** | |
| | Q | Helps in administering flexible benefits given to employees and conducts benefits usage analysis | **.804** | |
| | Q | Generates the pay budget, maintains the pay scale history, position and grade pay of the employees | **.727** | |
| **Labour/ Employee Management** | Q | HRIS identifies the number of union negotiations that has taken place and their costs | **.776** | **.909** |
| | Q | Analyzes and generates the grievance handling report to find the trend | **.723** | |

| Activities | Q | Analyses the employee work history and exit interview reports | .695 | |
|---|---|---|---|---|
| **Human Resource Information System** | Q | The HR department is assisted through this integrated system as it collects, records, stores, manages and delivers the data for human resource of the organization | .881 | .881 |
| | Q | Analyzes the information regarding the human resource of the organization to find the trend and help management to take prudent decisions | .752 | |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

**Variance Explained: 72.893**          **Regression Analysis**

| Table: 5  Model Summary[b] | | | | | |
|---|---|---|---|---|---|
| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** | **Durbin-Watson** |
| 1 | .782[a] | .612 | .601 | 1.042 | 1.865 |
| a. Predictors: (Constant), HRP, T&D, PM, CM, LM/EM | | | | | |
| b. Dependent Variable: Adoption of HRIS | | | | | |

So, here the multiple regression equation can be expressed as,

| Table: 6   Coefficients[a] | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Model** | **Unstandardized Coefficients** | | **Standardized Coefficients** | **t** | **Sig.** | **Collinearity Statistics** | |
| | **B** | **Std. Error** | **Beta** | | | **Tolerance** | **VIF** |
| (Constant) | 1.624 | .373 | | 4.351 | .000 | | |
| LM/EM | .064 | .057 | .057 | 1.119 | .004 | .949 | 1.053 |
| HRP | .049 | .049 | .051 | .997 | .020 | .946 | 1.057 |
| **T&D** | **.209** | **.062** | **.171** | **3.391** | **.001** | **.956** | **1.046** |
| PM | .163 | .051 | .159 | 3.187 | .002 | .977 | 1.023 |
| CM | .056 | .054 | .053 | 1.041 | .039 | .945 | 1.059 |
| a. Dependent Variable: Adoption of HRIS | | | | | | | |

(Model rows grouped under "1")

**Adoption of HRIS = 1.624 + .064 $X_1$ + .049 $X_2$ + .209 $X_3$ + .163 $X_4$ + .056 $X_5$**

**[Where, LM/EM = $X_1$, HRP = $X_2$, T&D = $X_3$, PM = $X_4$, CM = $X_5$]**

Linear multiple regression analysis was used to measure the relative importance of independent variables on the dependent variable. The independent variables were measured on 5 point Likert scale and regressed on dependent variable 'adoption of HRIS'. Multicollinearity was ruled out since VIF were all less than 3. After conducting regression analysis, we found out 0.782 as the correlation coefficient (R) for the model. It emphasizes the correlation between combination of independent variables and dependent variable. The coefficient of multiple determinations $R^2$ is computed as 0.612. This implies that 61% of the variation in adoption of HRIS is explained by the variation in all the independent variables in combination.

## VII.    FINDINGS

Regression analysis showed that all the research variables have a positive and significant effect in implementation and adoption of HRIS. The second hypothesis ($H_2$) examining that there is a significant impact of Training and Development

practices in adoption of HRIS in organization is accepted at 1% level of significance. It is the most significant factor and one of the HR practices which influences the adoption of HRIS the most.

## VIII.   CONCLUSION

It has been observed that most of the HR practices have an impact in implementation and adoption of HRIS in manufacturing companies of Midnapore district of West Bengal. The HR department has rated the system as an essential part that supports the organization in its competitive efforts. It adds value to the department and helps the internal operations to run smoothly. A huge transformation has been observed in human resource functionalities in these manufacturing companies after the adoption of HRIS. In this present dynamic scenario, the HR department stands as a strategic partner and sustained competitive advantage for the organization after implementation of HRIS into its practices.

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