

A Study on Evaluation of Effectiveness of e-HRM Practices in the Manufacturing Industry

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ABSTRACT

Humans are the most important valuable resource to run a company towards its objectives. Among other resources, Human resources play a vital role in taking part in the maximum contribution to organizational performance. Every organization will have a goal to achieve and the most common goal is to earn profit and added to that to capture the market area for a long time and continuous expansion. To achieve these goals and objectives, organizations have to bring various resources like Money, Power, Raw materials, Humans, etc., All these resources will take part in the organization's performance and its effectiveness completely depends upon “how we are managing those resources?”. Management is all about getting optimized output with minimal input. How we are handling the cash? how we are handling the raw materials? will reflect in the organization's performance. Similarly, human resource has to be managed properly. In the early days, there is no representative for workers to care for them and communicate their needs to the management. The evolution of Human Resource practices like recruitment, training, and development, performance management, compensation management, etc., made some valuable measures in managing employees. As technology grows every day many transformations have occurred in various sectors and domains. In Human Resources, clerical HR practices were now replaced by the internet and it is called e-HRM practices. Manufacturing Industries are slowly transforming into e-HRM Practices and this paper focuses on evaluating its effectiveness. A questionnaire was prepared and distributed to 496 manufacturing companies in Tamil Nadu. This research found that factors measuring the effectiveness of e-HRM practices were correlated and shows its effectiveness is high. e-HRM practices create various advantages like less time-consuming, more accuracy, etc.

KeyWords: e- HRM, HRM

1. Introduction

Managing resources is one of the vital factors to get maximum output from the resource. Organizations utilize various resources as input and it does some process in turn it gets required output. Quality and quantity of output are determined by various factors. But the predominant factor which decides the output is how we are managing the resources. Money is one of the basic needed resources for an organization to run its business. There will be a manager designated to handle the cash and its related items. If there is no person to manage financial resources then the organization cannot able to track the money transaction that comes in and goes out of the organization. Machinery that is used for the manufacturing also should be utilized properly to get an optimized output. Whatever resources may be, those resources are utilized and handled by humans from various management levels.

Human resource is an inevitable resource that contributes a major part to an organization's success. Such resources must be utilized and managed effectively to get maximum output from the resource. In earlier days, employees were engaged in work for daily wages and they were instructed to complete the task by following the given instructions or training. Employees' skills are utilized only at that level. In simple, we can state those periods as employees did work for wages and no focus was shown to improve

their skills. Managers were too behind to analyze the skill possessed by the employees and were not aware of the utilization of that skills. They have no idea about how to manage the skills of an employee. Also in other parts managers faced difficulty to maintain the personal data of the employees including demographic details and past employment history.

Employees personal data, past employment history, current work detail, and performance report, Skill reports are the major data required to manage human resources effectively. By using this data a manager can take an important decision. Data contains employee personal details, past employee history which meant his past exposure, and the skill that he gained, and current work details meant his attendance, designation, department, and salary details, Performance report meant the performance of the employee for the particular period also helps to compare the past and current performance of an employee. Skill reports meant skills possessed by the employee and training undergone details and training need to be attended by an employee. In earlier days those data are recorded and maintained in a notebook and ledgers. Managers faced difficulty to review the record at the needed time. So they failed to manage the human resource properly. It reflects in the performance of an organization. Managers cannot able to find productive employees and unproductive employees due to this unmanaged data.

Recently many organizations use the technology features to manage data effectively. In turn, a new concept called e-HRM emerged and now it was effectively used by many companies. Managers need to feed the data once and for further operations and updates we can get help from the software. Various analyses can be performed using that software. Major data like employee personal data, past working experience, current working status, and skill reports can be managed and can be utilized effectively.

e-HRM is defined as the planning, implementation, and application of information technology to perform HR activities like Recruiting, Selection, Training and Development, Performance Management, and Compensation management.

This research paper focuses on the study of the effectiveness of e-HRM practices, particularly in the manufacturing company. The effectiveness of e-HRM practices was measured in the following factors: Feasibility, Data Accuracy, Time Consuming, Usage, Data Analysis, Cost reduction.

2. Literature Review

Eleanna Galanaki, Alessandra Lazazzara & Emma Parry (2018) researched a cross-national analysis of e-HRM Configurations over 5854 companies in 31 countries and found that lack of cooperation between IT and HR departments results in unsuccessful adoption of e-HRM Configurations. They also found that national policies made the organization utilize the e-HRM configurations.

Mushfiqur Rahman, Chima Mordi, Uzoechi Nwagbara (2018) researched e-HRM implementation in government organizations. Due to bureaucratic practice in public organizations, it is difficult to implement e-HRM practices as compared to a private organization. Also stated is that e-HRM is a strategic tool that encompasses seamless functionality to support organizations by reducing operating costs and continuous advancement in data management.

Naveed Iqbal, Mansoor Ahmad, Matthew MC Allen, Muhammad Mustafa Raziq (2018) found the relationship between e-HRM and labour productivity concerning commercial banks in Pakistan. They stated that there is a significant relationship between the productivity of labour and e-HRM.

Yaser M Al-Harazneh, Ismail Sila (2021) researched on finding the impact of e-HRM usage on HRM effectiveness from various perspectives of levels of managers. This research was conducted among 282 responses from the two telecommunications companies in Jordan. They found that top management support and the HRM role of the line managers positively affected behavioral intentions to e-HRM.

Robert-Christian Ziebell, Jose Albors-Garrigos, Klaus-Peter Schoeneberg, Maria Rosario Perello Marin (2019) researched e-HRM in a cloud environment implementation and its adoption. They stated that data

feeding in a cloud is very important and it holds maximum space for data inventory and also needs to have a space for cache and temporary data to process information.

Naveed Iqbal, Mansoor Ahmad, Muhammad Mustafa Raziq, Felipe Mendes Borini (2019) found that there is a positive relationship between e-HRM practices and organizational outcomes. 412 responses were collected and found that e-HRM practices create many advantages like cost reduction, and time consumption which in turn increases the organizational outcomes.

Nemanja Berber, Biljana Dordevic, Sandra Milanovic (2018) found that e-HRM is a much-required innovation that promotes, develops, and facilitates the practice of HRM, both for the HR department and managers and employees for effective performance. They also highlighted the importance of the concept of e-HRM, its most important features, advantages, and potential drawbacks. They concluded that for the new digital age implementation of e-HRM is a greater advantage for any organization.

Naveed Iqbal, Mansoor Ahmad, Matthew MC Allen (2019) researched unveiling the relationship between e-HRM, impersonal trust, and employee productivity. 700 responses were taken for analysis from the line manager position in Pakistani banks. Data were analyzed using structural equation modeling. They conclude that technology supports HR activities by enhancing Organizational trust and productivity outcomes.

3. Objectives of the study

- To identify the variables used to measure the effectiveness of e-HRM Practices in the manufacturing industry
- To identify the effectiveness of e-HRM practices in the manufacturing industry
- To find the effectiveness of e-HRM practices at various management levels in the manufacturing industry

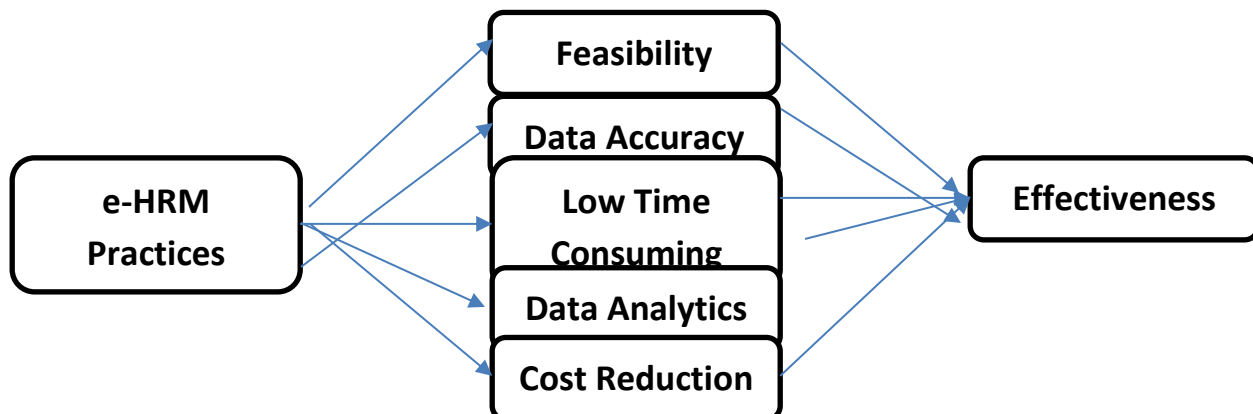
4. Research Question

1. What is the effectiveness of e-HRM practices in the manufacturing industry?

5. RESEARCH METHODOLOGY

The convenience sampling method is utilized in this study. Questionnaires have been created to investigate the effectiveness of e-HRM practices in the manufacturing industry. Questionnaires were distributed to 496 mid-sized manufacturing companies in India and were collected online. A total of 496 completed responses were received. These responses have been taken as the sample for the research to measure the effectiveness of e-HRM practices in the manufacturing industry.

6. RESEARCH FRAMEWORK



7. RELIABILITY OF THE RESEARCH INSTRUMENT

Table 1- Final Reliability and Validity for research instrument

| Construct | Cronbach's alpha |
|--------------------|------------------|
| Ease of use | 0.764 |
| Data Accuracy | 0.814 |
| Low Time Consuming | 0.765 |
| Data Analytics | 0.787 |
| Cost Reduction | 0.836 |

Following the completion of the data collection, the researcher conducted a reliability test. Table 1 shows that the final Cronbach's Alpha values are greater than 0.7, indicating that the variables employed to measure the construct are reliable.

8. DATA ANALYSIS & RESULTS

8.1 Confirmation of Factors of work from Home

To confirm the variables used to measure the effectiveness of e-HRM practises, a 9-item scale was Factor analysed using the Principal Component method with Varimax rotation on employee perceptions to establish the strength of the factor analysis solution, which is important in establishing the reliability and validity of the obtained reduction.

Table 2 – Results of Factor Extraction for work from home

| S. No. | Factor Name & Items | Factor loadings | Eigen Value | Variance in % | Communalities (h ²) |
|--------------------|--|-----------------|--------------|---------------|---------------------------------|
| Ease of use | | | | | |
| 1 | It is easy to feed employees data in e-HRM software | 0.918 | 7.072 | 54.200 | 0.615 |
| 2 | I can able to fix the problem myself if occurred in e-HRM software | 0.869 | | | 0.732 |
| 3 | It is easy to fetch the report as per the requirement | 0.675 | | | 0.874 |
| Usage | | | | | |
| 4 | E-Recruitment, E-training and Development, etc., can be perform well | 0.867 | 2.354 | 14.715 | 0.871 |
| 5 | It helps to make an important decision | 0.826 | | | 0.784 |

| | | | | | |
|---------------------------|---|-------|--------------|--------------|-------|
| 6 | It helps to compare any period report with current period | 0.789 | | | 0.898 |
| Low Time Consuming | | | | | |
| 7 | It helps me to fetch the report in short period of time | 0.911 | 1.474 | 9.212 | 0.714 |
| 8 | I can able to fetch any period of data and any type of data in short period of time | 0.874 | | | 0.770 |
| 9 | It reduces work time as all the activities performed with the help of IT | 0.883 | | | 0.782 |
| Data Analytics | | | | | |
| 10 | I can able to analyze the data in various dimensions | 0.871 | 1.416 | 8.853 | 0.850 |
| 11 | e-HRM practices helps me to take an important decision | 0.813 | | | 0.858 |
| 12 | Duplicate Data can be easily find out | 0.841 | | | 0.754 |
| Cost reduction | | | | | |
| 13 | e-HRM practices reduced the operation cost | 0.956 | 1.414 | 9.148 | 0.781 |
| 14 | e-HRM implementation and execution is worth of money spend by an organization | 0.824 | | | 0.814 |
| 15 | It reduces the work load of a manager | 0.811 | | | 0.792 |

Further, in order to assess the appropriateness of the data for factor analysis, the communalities (h^2) from table 3 is evaluated and it ranges from 0.615 to 0.898 that shows a relatively high level. It meant that factor analysis extracted a good amount of variance in the statements. The Eigen values range from 1.416 to 7.072 which are more than one show that the data sets are appropriate.

From the table 3, it was found that five variable solutions explain 54.20% cumulative variance, which is higher than 50%. Ease of use explains maximum variance 54.200% followed by employee Usage explains 14.715% and Low time consuming explain 9.212% variance, and data analytics explains 8.853% variance, and Cost reduction explains 9.148% variance respectively. It means that factor analysis has extracted a good amount of variance in the items. All items were found highly loaded under four variables, which helps to measure effectiveness of e-HRM practices.

8.2 Extent of Impact of the Factors of work from home on work life balance

The multiple regression model is carried out to measure effectiveness of e-HRM practices in Manufacturing Industry. The following hypotheses have been testing in this analysis

H1: Ease of Use has significant effect on effectiveness of e-HRM Practices

H2: Usage has significant effect on e-HRM Practices

H3: Low time consuming has significant effect on e-HRM Practices

H4: Data Analytics has significant effect on e-HRM Practices

H5: Cost Reduction has significant effect on e-HRM Practices

In this analysis, the opinion of the respondents on employee retention has been taken as dependent variable and the extracted score from factor analysis on each factor have been taken as independent variables.

Table – 3 Coefficient of determination (R^2), and Adjusted (R^2)

| R | Coefficient of determination (R^2) | Adjusted Square | R | Std. Error of the Estimate |
|-----|--|-----------------|---|----------------------------|
| .80 | .0.712 | 0.710 | | 0.646 |

From Table 3, the coefficient of determination value is 0.712 which shows that 71.2 percentages of variations were expressed by all the variables considered in the model for measuring effectiveness of e-HRM practices

Table – 4 ANOVA

| | Value of Sum of Squares | Degrees Of freedom | Mean Square | F | Sig. |
|------------|-------------------------|--------------------|-------------|-------|------|
| Regression | 109.043 | 15 | 6.878 | 9.382 | .000 |
| Residual | 124.274 | 74 | 0.733 | | |
| Total | 233.317 | 89 | | | |

From the table 4, the significance of F value is 0.000 which indicates that the model is statistically significant model at 0.05 level of significance.

Table- 5 Standardized and unstandardized regression coefficients for factors measuring e-HRM effectiveness

| | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. | Result |
|--------------------|-----------------------------|------------|---------------------------|-------|------|-------------|
| | B | Std. Error | Beta | | | |
| (constant) | 3.431 | 0.453 | 6.452 | 7.568 | 0.00 | |
| Ease of Use | 0.343 | 0.021 | 0.214 | 9.332 | .000 | H1 Accepted |
| Usage | 0.211 | 0.031 | 0.187 | 8.478 | .004 | H2 Accepted |
| Low time Consuming | 0.161 | 0.041 | 0.133 | 5.561 | .003 | H3 Accepted |
| Data Analytics | 0.265 | 0.051 | 0.468 | 6.543 | .001 | H4 Accepted |
| Cost Reduction | 0.214 | 0.035 | 0.314 | 7.511 | 0.02 | H5 Accepted |

In table 7, the significance values are less than 0.05 for all constructs. So the hypotheses formulated for the study were accepted at 95% confidence level. All the variables have positive impact on measuring effectiveness of e-HRM practices in the manufacturing industry

Multiple regressions model for study effectiveness of e-HRM Practices in the Manufacturing Industry

$$EE = 6.452 + 0.214EU + 0.187U + 0.133LT + 0.468DA + 0.314CR$$

ER represents Effectiveness of e-HRM

EU represents Ease of Use

U represents Usage

LT represents Low time Consuming

DA represents Data Analytics

CR represents Cost reduction

The beta (β) coefficients provide the relative importance. The dimension with the largest coefficient represents high contribution in effectiveness of e-HRM Practices. The next largest coefficient represents the second most influential determinant and so forth. In other words, the higher the beta co-efficient, more the contribution of its effectiveness of e-HRM Practices in the manufacturing industry. The results indicate that the “Ease of use” has the most effectiveness by having β coefficient of 0.343, and “Low time consuming” appearing to be the least important with β co-efficient of 0.161 .

Discussions and Conclusion:

The study proves that the variables considered by the researchers have significant relation on effectiveness of e-HRM practices. Managers feel that e-HRM practices reduces manager’s work load and also provides reliable report about the information required. Other factors like data analytics, time consumption, cost reduction also have considerable relationship on measuring effectiveness of e-HRM practices. In manufacturing industry effectiveness of e-HRM practices is relatively high and its scope is high regarding various practices like recruitment, selection, training and development, performance management with the help of IT support. Further research is needed to understand the other variables helps to measure the effectiveness of e-HRM practices in the manufacturing industry as well as other industry have to study.

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