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Performance Management in Digital Era: Case of Select Steel Units in India

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Abstract

In this research paper the implementation of Performance Management Systems through digital technology had been discussed. The opinion of managers in steel units in India has been collected through structured questionnaire. A comparison of performance management system before and after digitization had been made. The results of this study states that job satisfaction and performance of managers has enhanced with digital performance management system because it can be done more easily as compared to traditional performance management systems. For instance, the information across the organization can be used with digital technology and feedback can also be communicated appropriately on time to the employees to better motivate and enhance their performance. The performance management system can be integrated with other systems in the human resource information systems for higher productivity and effectiveness (131 words).

Keywords: *Performance management, human resource analytics, human resource information system, digital human resource management, online performance management.*

Introduction

In the digital era many business processes are redesigned and performance management system is not an exception. Traditionally performance management is a half yearly or yearly activity which is conducted by human resource department. The myth of performance appraisal system is to evaluate the performance for giving increments, promotions and benefits to the employee. But in reality organizations conduct performance appraisal for various reasons like evaluating the performance, motivating the employee because their work is recognized during performance appraisal and monitoring impact of external environment on the firm.

Human Resource (HR) analytics and Business Intelligence (BI) has given an opportunity to conduct performance appraisal in digital economies. The internet technology has drastically changed the business processes in the modern world. Long ago, performance management would take time and it was manual intervention where there is opportunity for bias while mentioning outcomes to the employees. But, with the digital technology the process of conducting performance management system has become faster and transparent, feedback given to the employees can be given instantly to them. In this paper the implementation of performance management systems through digital technology has been discussed. The managers' perception towards digital performance management systems has been described which would provide some inputs for managers for analyzing the performance through digital technology.

Research Objectives

- To understand digital performance management systems with regard to steel sector in India.
- To analyze the perception of managers in the steel industry towards digital performance management system.
- To describe the benefits of digital performance management system in steel sector.

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\Scope of the Study

This paper considers steel units in Indian steel industry. The managers working in various steel units across the nation are communicated online for discussing about implementation of digital performance management system. There are several areas like human resource information system (HRIS), Business Intelligence (BI) and human resource (HR) analytics, but this study is confined to digital performance management systems in steel sector. However, integration of the performance management system with the above systems would lead to effectiveness and improve productivity.

Literature Review

Mithas et al (2011) conducted a study and explained the positive impact of information technology on the overall performance of firm. Employees can enhance their efficiency when information is gathered through technology. Even human resource management department in an organization can conduct surveys through digital technology at regular intervals in unbiased manner. Modern organizations are giving importance for knowledge management and they are evaluating its impact on financial performance (Zack et al, 2009). Hence when performance management is conducted through digital mode then it creates documentation and supports knowledge management practices.

Chaffey and White (2010) explained how value of human resource management can be assessed with the support of digital technology in the modern world. The technology can be useful only when it enhances the value of the firm. In this regard, information gathered through technology supports in analyzing the performance of both organizational and at the individual level. Nudurupati et al (2016) had explained that data needs to be collected for performance management system and it has become complex and traditional methods are no more suitable. In the digital era it is important for organizations to consider data from a wide variety of stakeholders from the external economy while conducting performance management measurement for employees in the organization.

Bourne et al (2017) explained the process of performance management system from systems perspective. Through digital technology the parameters like autonomy, connectivity, emergence and diversity can be implemented which is not possible with traditional approaches of performance management. In the technologically advanced world it had become essential for human resources managers to adopt new trends like business performance analytics which is about systematic use of data and analytical methods (mathematical, econometric and statistical) for performance measurement and management (Raffoni et al, 2017).

Organizations are adopting the techniques of business intelligence for conducting corporate performance management systems (Richards et al, 2017). When digital technology is implemented in organizations it is automatically helping the human resource managers to conduct performance management in an easy way. Bondarouk and Ruel (2009) explained that challenges exist when new technology is adopted for conducting performance appraisal in organizations. However in the long term those challenges can be overcomed by customizing the processes according to the nature of business.

Many changes took place in the business environment in the last few decades but many organizations are still implementing traditional performance management which is also causing dissatisfaction among the employees. Now shift is taking place in performance management system and organizations are adopting data-driven technology for better outcome of the process. The manual intervention decreases and therefore bias can be eliminated with digital performance management systems. The modern employees' especially millennial employees are more interactive with digital performance systems rather than traditional performance management system.

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Research Methodology

The primary data for this study was collected through a structured questionnaire sent over email. The questionnaire was shared with managers who are presently working in various steel units in India. The respondents have been explained about the purpose of the research. The convenient sampling had been used for this study because data can be collected only from managers currently working in steel sector with sample size of 65. The respondents were promised that identity of their company and their personal profile would not be shared with anyone. Initially they were explained through email about digital performance management system. Further, based on the responses to the emails, only if they had previous experience in conducting digital performance management systems, they were requested to participate in the survey. The respondents belong to various steel units from both public and private sectors. It would be really tough to collect the primary data because it is practically not possible to meet them in person because it would incur high costs and spend lot of time for carrying this study; also due to their hard pressed work schedules.

The measurement scale of this study consists of 12 questions including two demographic variables. The ten items of the measurement scale are mentioned in Table 2 and they are measured through Likert-type 5 point rating scale. Among the ten questions eight questions are measured where '1' stands for strongly disagree and '5' stands for 'strongly agree'. The remaining two items are measured with '1' for never and '5' for very often. The respondents were explained about the pattern of measurement scale. SPSS software 20.0 version was used for conducting data analysis. Initially the data was loaded into Ms Excel and it was migrated to SPSS software. The variables were defined in SPSS software and type of measurement scale was selected for each item. The statistical tools like descriptive statistics, frequency analysis, chi-square, correlation and regression tests have been applied through SPSS software. The three hypotheses which were formulated based on the objective of this study have been tested through statistical techniques.

Data Analysis

The total respondents for this study are 65 who are working in managerial positions in various steel companies across the country. Out of them 72.30 are male and remaining 22.70 are female employees who are working middle and above middle level management in their respective organizations as per Table 1. The experience of employees pertaining to their current work place has been collected. From the dimension of experience more than 50 percent of the respondents are having more than 6 years of experience in their present organization.

Table 1. Demographic characteristics of variables

S.No	Variable	Characteristic	Percentage
1	Gender	Male	72.30
		Female	27.70
2	Experience in present organization	Less than 3 Years	23.10
		3 to 6 Years	23.10
		7 to 9 Years	26.20
		More than 9 Years	27.60

(Source: Prepared from primary data)

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Table 2. Measurement Scale for Performance Management System

S.No	Item	Mean	S.D
1	P1. Conducting performance management system through digital mode is essential for enhancing productivity and effectiveness.	4.08	0.83
2	P2. After implementing the digital performance management system, I am feeling more satisfied with my job.	4.20	0.59
3	P3. Digital performance management system gives more accurate results than traditional performance management system.	4.46	0.50
4	P4. Digital performance management system gives assessment from various dimensions.	4.18	0.63
5	P5. Performance of employees increases with implementation of digital performance appraisal.	2.88	0.69
6	P6. Digital performance systems can be used to collect emotional data from the employees.	2.58	0.65
7	P7. Developing a process for conducting digital performance management system is an easy task.	3.48	0.50
8	P8. The feedback for employees can be easily communicated with digital performance management system and concerns be received easily.	4.60	0.49
9	P9. How often performance management system has been conducted in your organization before implementing digital performance management system?	3.08	0.71
10.	P10. How often performance management system was conducted in your organization after implementing digital performance management system?	4.05	0.64

From the viewpoint of managers in steel industry it is observed that conducting performance appraisal in digital mode is very essential and this variable is having mean value of 4.08 as per Table 2 but standard deviation (S.D) of 0.83 is also high. It means again there is deviation among the managers with regard to digital performance management systems. It is observed for P6 in the above table the mean value is 2.58 with standard deviation (S.D) is 0.65 which means emotional data cannot be collected from the employees through digital performance management system. From Table 2 it is found that mean value for P9 is 3.08 and P10 is 4.05 which can be stated that frequency of conducting performance management system had increased after adopting digital technology. As per P5 mean value which is only 2.88 with S.D of 0.69 it can be stated that implementation of digital performance management system does not influence the performance of employees.

H1. There is an association between managers perception towards digital performance management system and job satisfaction.

Table 3. Correlations

		Essential	Job Satisfaction
Essential	Pearson Correlation	1	0.380**
	Sig. (2-tailed)		0.002
	N	65	65
Job Satisfaction	Pearson Correlation	0.380**	1
	Sig. (2-tailed)	0.002	
	N	65	65

**. Correlation is significant at the 0.01 level (2-tailed).

(Source: Output from SPSS)

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H1 is accepted because significant 'p' value is less than 0.05 and 'r' value is 0.380. Hence there is positive correlation between managers' job satisfaction increases with implementation of digital performance management system'.

H2. There is an association with managers' experience and their perception towards accuracy of results with digital performance management system.

Table 4. Experience with the present organization. * Accurate Results Cross tabulation

Count				
		Accurate Results		Total
		Agree	Strongly Agree	
Experience with the present organization.	Less than 3 Years	9	6	15
	3 to 6 Years	13	2	15
	7 to 9 Years	1	16	17
	Above 9 Years	12	6	18
Total		35	30	65

(Source: SPSS Output)

Table 5. Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.657[a]	3	0.000
Likelihood Ratio	27.233	3	0.000
Linear-by-Linear Association	0.964	1	0.326
N of Valid Cases	65		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.92. (Source: SPSS Output)

H2 is accepted because 'p' value in Table 5 is less than 0.05 therefore there is an association between experience of employee and their belief towards accuracy of digital performance management system. From Table 4 it is evident that employees with 7 to 9 years of experience are strongly agreeing that results of digital performance management systems will be more accurate compared to traditional performance management system.

H3. The job satisfaction is influence by perception of managers towards accurate results and feedback to employees with digital performance management systems.

Table 6. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.467	1.146		3.897	0.000
	Accurate Results	-0.289	0.151	-0.245	-1.916	0.060
	Feedback to employees	0.222	0.153	0.185	1.449	0.153

a. Dependent Variable: Job Satisfaction (Source: Output from SPSS)

H3 is rejected because 'p' value for accurate results and feedback to employees is more than 0.05 as per Table 6. Hence job satisfaction of managers does not have an association with their opinion towards the digital performance management systems.

Discussion

The managers have attained job satisfaction with the implementation of digital performance management system in the steel industry. The human resource managers and other line managers were able to assess the performance of employees instantly. Earlier human resource department was treated as cost incurring department but with digital technology it had gained more importance for saving costs to the organization. In the modern world employee retention has become important because it gives competitive advantage for

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firms. Hence digital performance management systems accurately assess the performance and helps in motivating the employees to continue to work for the organization. However, job satisfaction of managers in steel industry had helped them to give feedback to employees in a scientific way without any bias and thereby maintaining more transparency and timely redressal of concerns related to their job on hand.

Conclusion and Future Research

Organizations using digital performance management systems will be better prepared to handle present and future challenges in the most effective manner. Instantly performance of employees can be analyzed at anytime and from anywhere with digital performance management system. Modern business organizations are influenced by various factors in the external environment and it had become essential for implementing digital technology like digital performance appraisal management systems for sustaining in the business world.

The measurement scale of this study can also be used by researchers in other industries to evaluate the effectiveness of digital technology in human resource management system with specific regard to performance management system. In this study the perception of middle level and higher middle level managers has been considered from the perspective of digital performance management system. But future researchers can conduct studies to analyze the perception of employees regarding digital performance management system with some more variables relevant to that organization under study. Since human beings are not machines, performance may vary according to psychological, emotional and other variables therefore such factors need to be considered by future researchers.

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