Impact of Knowledge-based HRM Practices on Knowledge Management Effectiveness

An Empirical Study of Doctors' Perceptions

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Abstract - In any organization, knowledge is considered as an invaluable asset and the employees are only source of knowledge. Human Resource Management (HRM) practices are essential for attracting, developing, motivating and retaining the employees whereas Knowledge Management (KM) practices are essential for acquiring, disseminating, retaining and reusing knowledge of employees. This study explores the HRM practices that enhance knowledge flow in the organization (*'knowledge-based'* HRM practices) and the elements of KM effectiveness. The purpose of the study is to ascertain the impact of knowledge-based HRM practices on KM effectiveness of doctors. The study was conducted in hospitals where the doctors' knowledge is crucial for effective healthcare delivery. Data was collected from the doctors working in multi-specialty hospitals. The results revealed the positive relationship between knowledge-based HRM practices and KM effectiveness of doctors. It also highlighted the Mentoring and Rewards & Recognition practices for improving KM effectiveness of doctors. This study enriches the existing KM literature and enables HR Managers for contributing to the KM implementation in hospitals. The findings shed some light on linking HRM & KM in hospitals.

Keywords: Doctors, Hospitals, HRM Practices, Knowledge Management, KM Effectiveness.

I. INTRODUCTION

The role of Human Resource Management (HRM) is ever changing for enabling the organizations to achieve the sustainable competitive advantage. Lengnick-Hall & Lengnick-Hall (2003) identified the new roles of HRM in the knowledge economy as human capital steward, knowledge facilitator, relationship builder and rapid deployment specialist. Accordingly, HRM need to assume the crucial role as a *"knowledge facilitator"* for encouraging continuous learning and knowledge dissemination in the organization. It will enhance both knowledge stock and knowledge flow in the organization.

In the knowledge economy, HRM should reflect a responsibility for developing and sustaining organizational capabilities through activities that overlap with traditional business functions such as strategy formulation & implementation, finance and marketing as well as new functions such as Knowledge Management (KM) (Gloet, 2006). KM has been emerged as an indispensable management function to leverage the existing knowledge and create the new knowledge for improving organizational performance.

Knowledge is dependent on people and HRM practices as well as the creation of a learning culture are vital for managing knowledge within firms (Evans, 2003). HRM should play its role in identifying where the tacit knowledge resides and how it can be best utilized in order to achieve the company's goals. Besides that, the HRM plays a key role in assessing employees' knowledge and determining whether it brings any major benefits to the company (i.e. identification of the benefits of KM efforts) (Rosline, 2016).

HRM practices are defined as organizational activities directed at managing the pool of human resources and ensuring that the resources are employed towards the fulfilment of organizational goals (Tiwari & Saxena, 2012). However, knowledge workers need specific HRM and therefore one similar practice cannot be used for all of the employees in an organization (Shahla Sohrabi et al., 2015). Knowledge-based HRM includes those HRM practices purposefully designed to enhance knowledge processes within an organization (Aino Kianto et al., 2017).

Management Researchers have investigated the KM factors as enablers (culture, structure & information technology), processes (acquisition, dissemination, storage & application of knowledge) & performance and also the relationship among these factors. KM performance or effectiveness is considered as KM outcomes from the employees and organization. KM effectiveness is improvements in knowledge & skills, communication, collaboration, decision-making and productivity of employees. The attributes of KM effectiveness of

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employees can lead to improvements in organization performance namely learning & growth, better product or service quality, customer satisfaction and revenue growth.

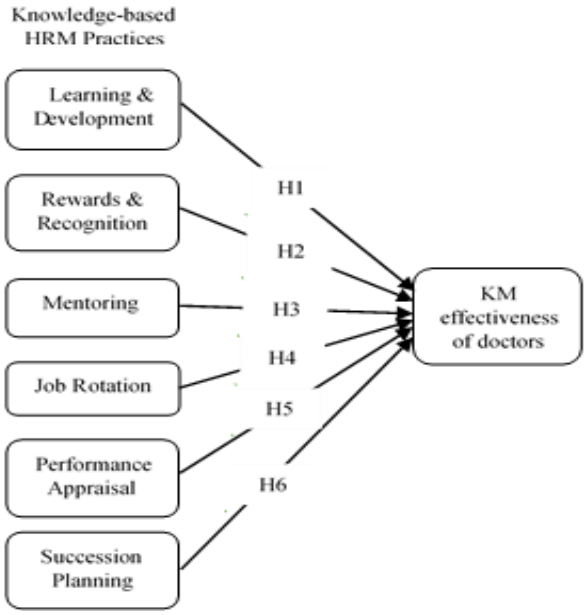
The present paper attempts to find out whether knowledge-based HRM practices can enhance KM effectiveness of doctors.

1.1. Objectives of the study

- To identify the HRM practices that increases the knowledge flow in hospitals ('knowledge-based' HRM practices).
- To find out the determinants of KM effectiveness of doctors.
- To ascertain the effects of knowledge-based HRM practices on KM effectiveness of doctors.
- To suggest the measures for sustaining knowledge-based HRM practices in hospitals.

1.2. Research Model and Hypotheses Development

Figure 1: Research Model



Source: Author

1.2.1. Learning and Development

A continuous learning system enables an organization to build new competencies and capacities among its employees and a KM system enables the organization to translate that learning into knowledge that adds value (Marsick & Watkins, 1999). Any training (especially team-based training & cross training) that emphasizes cooperation and builds relationships among employees should increase knowledge-sharing behaviour (Cabrera & Cabrera, 2005).

Hypothesis 1: There is a significant effect of learning & development on KM effectiveness of doctors.

1.2.2 Rewards and Recognition

Employees will not share hardly earned knowledge unless they are rewarded or recognized to do so. Rewarding and recognizing the knowledge sharing behaviour sends a strong signal to the employees that the organization values knowledge sharing (Cabrera & Cabrera, 2005). Psychological rewards such as a sense of belonging and sharing common values, a sense of achievement and success, a sense of competence, a sense of usefulness, a sense of respect and recognition and a sense of trust are acknowledged to be important for fostering knowledge sharing among employees (Svetlana Sajeva, 2014).

Hypothesis 2: There is a significant effect of rewards and recognition on KM effectiveness of doctors.

1.2.3 Mentoring

Mentoring is the passing of knowledge from a more-experienced individual (mentor) to a less-experienced individual (protégé) (Levinson et al., 1978). A mentor might use a variety of approaches such as coaching, training, discussion and counselling to transfer his best practices (Baastrup, 2003).

Hypothesis 3: There is a significant effect of mentoring on KM effectiveness of doctors.

1.2.4 Job Rotation

Job rotation is an effective tool to transfer the tacit knowledge within an organization and implementing job rotation provides the employees (rotators) with a real learning situation (Lu & Yang, 2015). Job rotation can also enhance the collaboration among employees in the organization.

Hypothesis 4: There is a significant effect of job rotation on KM effectiveness of doctors.

1.2.5 Performance Appraisal

Performance appraisal that has a developmental, rather than a controlling, focus will increase the willing to share ideas in organizational climates that are safe and non-judgmental. Incorporating an assessment of knowledge sharing behaviours and feedback on performing such behaviour in performance appraisal encourages knowledge sharing among employees (Cabrera & Cabrera, 2005).

Hypothesis 5: There is a significant effect of performance appraisal on KM effectiveness of doctors.

1.2.6 Succession Planning

Succession planning is the process of ensuring that qualified persons are available to assume key managerial positions once the positions are vacant (Mondy & Noe, 2005). In case of succession, the transfer of critical knowledge represents a critical aspect in view of an organization's continuity (Cabrera-Suarez et al., 2001). Senior employees possess a willingness to share and transfer knowledge to younger generations (Stevan H Appelbaum, 2012).

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Hypothesis – 6: There is a significant effect of succession planning on KM effectiveness of doctors.

II. LITERATURE REVIEW

2.1 Knowledge-based HRM practices–The literature on the relationship between HRM and KM is divided into three areas as below:

2.1.1. HRM has been examined as a mediating factor in the relationship between KM and organizational performance. Antonio Aragon Sanchez (2015) studied that KM strategies positively influence firm performance through certain high work performance practices (selective staffing, intensive training, active participation, comprehensive performance appraisal & performance-based compensation) and highlighted the mediating role of HRM in this relationship and the need to align HR practices with organizational strategies.

2.1.2. KM has been examined as a mediating factor in the relationship between HRM and organizational performance. Chung-Jen Chen (2009) confirmed that strategic HR practices (staffing, training, participation, performance appraisal and compensation) are positively related to KM capacity (acquisition, sharing and application of knowledge) which, in turn, has a positive effect on innovation performance (administrative innovation and technical innovation). Tan. C.L. et al. (2011) examined the mediating effect of KM effectiveness on the relationship between HRM practices (performance appraisal, career management, training, reward system and recruitment) and organizational innovation (product innovation, process innovation and administrative innovation). The study concluded that the KM effectiveness possesses a mediating role in organizational innovation through training and performance appraisal. Similarly, Gonul Kaya Ozbag (2013) confirmed that HRM capabilities are positively related to KM capability which turns into innovation. HRM capabilities have both direct and indirect effect mediated by KM capabilities on innovation.

2.1.3. Few studies focused on the direct relationship between HRM and KM as discussed below:

Yahya Sallah et al., (2002) explored the association between HRM (training, decision making, performance appraisal, compensation & reward) and KM (acquisition, documentation, transfer, creation & application of knowledge). The study found that the design of a compensation and reward system should be on promoting group performance, knowledge sharing and innovative thinking. The performance appraisal must be the base of evaluation of employee's KM practices and an input for directing KM efforts.

Tatiana Andreeva et al., (2012) examined the link between KM practices, firm competitiveness and financial performance. KM practices consisting of HRM and information communication technology (ICT). The study revealed that HRM and ICT practices for managing knowledge are strongly correlated and have a statistically significant influence on both financial performance and competitiveness of the firm. The study also revealed that ICT practices improve financial performance only when they are coupled with HRM practices.

Prieto Isbael et al. (2010) examined the relationship between HRM practices and KM by examining the way in which HRM practices expected to impact on employees' abilities, motivation and opportunity to engage in KM, do it by enabling knowledge sharing & maintaining and knowledge creation within organizations. The study revealed that HRM practices aimed to motivate and give opportunity to behave as requested significantly affect knowledge sharing & maintaining. Knowledge sharing & maintaining is shown to partially mediate the relationship between HRM practices and knowledge creation.

Bader Yousef Obeidat et al., (2014) investigated the relationship between HRM practices (recruitment methods, training & development, performance appraisals and reward systems) and organizational commitment (affective commitment, continuance commitment & normative commitment), on the one hand, and their relationship with KM process (knowledge acquisition, knowledge distribution, knowledge interpretation & organizational memory), on the other hand. The study revealed that HRM practices have a significant influence on organizational commitment. The study did not find a direct relationship between HRM practices and KM process. However, casual links were founded between HRM practices and organizational commitment, on the one hand, and organizational commitment and KM processes, on the other hand.

Lin (2007) empirically demonstrated that motivational factors such as reciprocal benefits, knowledge self-efficacy, and enjoyment in helping others were significantly associated with employee knowledge sharing attitudes and intentions. However, expected organizational rewards did not significantly influ- ence employee attitudes and behavior intentions regarding knowledge sharing.

2.2. KM effectiveness – The literature on the KM effectiveness is divided into two areas as below:

2.2.1. KM effectiveness of employees – KM effectiveness is useful KM outcomes such as improved communication, enhanced collaboration, improved employee skills, better decision-making and improved productivity. Improved communication leads to improved learning, greater awareness of mission critical information and transformation of individual knowledge to organizational knowledge and vice versa. Enhanced collaboration are translated into improving business processes, systems and team performance. In turn, these successes will result in increased innovation, and better decision making. Improved productivity will lead to efficiency gains,

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improved employee satisfactions and morale (Anantatmula, 2007). Other KM outcomes are better customer handing, sharing best practices, new or better ways of working, improved adaptation capability and faster response to key business issues (KPMG, 1991).

2.2.2. KM effectiveness of organization –The key factors that affect effectiveness of KM are business strategy, knowledge on knowledge, integration of vision and organization, leadership, a systematic knowledge process, a well-developed knowledge infrastructure and an adequate level of measurability of knowledge (Skyrme, 2000). KM effectiveness is the combined effectiveness of the KM processes (knowledge acquisition, knowledge creation, knowledge storage and knowledge utilization). The success of KM effectiveness is linked with the result of organizational performance in terms of three aspects – efficiency, adaptability and innovativeness (Somnuk Aujirapongpan, 2010). The attributes of KM effectiveness can lead to improvements in performance such as customer satisfaction through better product or service quality. This is possible due to a learning environment, employee development, effective communication tools and knowledge sharing (Anantatmula, 2007).

III. RESEARCH METHODOLOGY

The study has adopted quantitative research approach. As said by Cohen and Manion (1980), quantitative research is defined as social research that employs empirical methods and empirical statements. The sampling design for the study was non-probability convenient sampling. Simple random sampling could not be adopted because of the uncertainty in obtaining permissions for the survey and also the accessibility factor. The respondents are 60 doctors working in 4 multi-specialty hospitals in Bangalore & Chennai. The criteria for identifying the multi-specialty hospital for the study was the number of beds which should be minimum 500. Doctors from various clinical speciality are included in the study. Doctors from non-clinical speciality and administrative positions are excluded for the study.

The research instrument used for the study was a five point Likert Scale questionnaire (ranging from strongly disagree-1 to strongly agree-5) which was designed with three parts – (i) demographic details of the respondent; (ii) knowledge-based HRM practices (6 items); (iii) KM effectiveness of doctors (6 items). The primary data was statistically analysed using SPSS software. Multiple regression analysis was used to analyse the primary data. The secondary data was collected from research papers.

IV. ANALYSIS AND INTERPRETATION

4.1. Reliability & validity of the Instrument:

Kaiser-Meyer-Olkin (KMO) measure the sampling adequacy for factor analysis and Barlett's Test of Sphericity measures further appropriateness of factor analysis. From table 1, KMO and Bartlett's Test value is 0.891at significant level of 0.000. The degree of common variance among the variables was high and therefore factor analysis could be conducted

Table 1. Kaiser-Meyer-Olkin (KMO) and Bartlett's Test

KMO Measure of Sampling Adequacy		0.891
Bartlett's Test of Sphericity	Approx. Chi-Square	561.432
	df	66
	Sig.	0.000

Source: primary data

From Table 2, the highest mean value is 4.43 for minimized medical errors followed by capturing & implementing best practices (4.37). The lowest mean value is 3.80 for rewards & recognition followed by succession planning (3.82). The small variation in mean score is 0.637 for capturing & implementing best practices and the high variation in the mean score is 0.999 for job rotation.

Cronbach's alpha method was used to assess the reliability of the instrument. From Table 2, Cronbach's alpha values are more than 0.8 which are acceptable (Hair et al., 2006). The measurement items were examined using exploratory factor analysis. The principal component analysis was adopted for extracting the factors and resulting into 2 factors. From table 2, all factor loadings are higher than 0.6, ranging from 0.604 to 0.936.

Table 2. Descriptive statistics, reliability and validity tests

Measurement Items	Mean	Standard Deviation	Factor Loading	Cronbach's Alpha
Knowledge-based HRM Practices -				
Learning & Development	3.92	0.979	0.739	0.900
Rewards & Recognition	3.80	0.988	0.604	
Performance Appraisal	3.98	0.948	0.658	
Mentoring	4.07	0.880	0.732	
Job Rotation	3.87	0.999	0.899	
Succession Planning	3.82	0.983	0.808	
KM effectiveness of doctors -				
Improved learning	4.35	0.659	0.801	0.881
Minimized medical errors	4.43	0.673	0.902	
Improved decision making	4.28	0.715	0.838	
Collaboration	4.17	0.763	0.779	
Capture & implementation of best practices	4.37	0.637	0.795	
Minimized cost of care	4.10	0.877	0.936	

Source: primary data

The higher values of reliability and validity shows that the measurement items in table 2 are adequate and the outcome of this analysis will be reliable and valid.

4.2. Testing of Hypotheses

Multiple Regression analysis was used to explore the effects of knowledge-based HRM practices on KM

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effectiveness of doctors. The results of multiple regression analysis are as follows:

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.717[a]	0.514	0.459	0.43091

a. Predictors: (constant), learning & development, rewards & recognition, performance appraisal, mentoring, job rotation, succession planning.
b. Dependent Variable: KM effectiveness of doctors.

Table 4. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.405	6	1.734	9.339	0.000[a]
	Residual	9.841	53	0.186		
	Total	20.246	59			

a. Predictors: (constant), learning & development, rewards & recognition, performance appraisal, mentoring, job rotation, succession planning.
b. Dependent Variable: KM effectiveness of doctors.

Table 5. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Hypothesis
		B	Std. Error	Beta			
1	(Constant)	2.307	0.296		7.801	0.000	
	Learning & Development	0.069	0.088	0.116	0.784	0.436	Not supported
	Rewards & Recognition	0.167	0.083	0.281	2.012	0.049	Supported
	Performance Appraisal	-0.035	0.098	-0.057	-0.361	0.720	Not supported
	Mentoring	0.232	0.094	0.349	2.473	0.017	Supported
	Job Rotation	-0.100	0.090	-0.171	-1.112	0.271	Not supported
	Succession Planning	0.188	0.104	0.315	1.798	0.078	Not supported

Dependent Variable: KM effectiveness of doctors.

Source: primary data.

i) As table 3 shows, R is the multiple correlation coefficient (R=0.717) between the predictors and the outcome. The high value (R=0.717) shows that there is good overall fit of the regression model. The coefficient of determination (R^2= 51.4%) shows 51% variation in the outcome is due to the predictors and confirms the effect of HRM practices on KM effectiveness of doctors. In this model, the shrinkage (R^2 - Adjusted R^2) is 5.5 (51.4 – 45.9) which suggests that if the model were derived from the population rather than a sample if would account for approximately 5.5% less variance in the outcome.

ii) The table 4 shows the ANOVA results for the model are statistically significant (p=0.000 is less than 0.05).

iii) The table 5 shows the model of relationship between HRM practices and KM effectiveness of doctors. As the t values are higher, sig values are less than 0.05, the model is a good fit. The six independent variables were expressed in terms of standardized factor scores (beta coefficients). It is observed that mentoring has a significant effect on KM effectiveness of doctors (β=0.349, t=2.473, p<0.05), followed by rewards & recognition (β=0.281, t=2.012, p<0.05) whereas other elements do not have a significant effect on KM effectiveness of doctors. Therefore, mentoring and rewards & recognition are best predictors of KM effectiveness of doctors.

V. FINDINGS AND SUGGESTIONS

The study found that there is a positive relationship between knowledge-based HRM practices and KM effectiveness of doctors. Further, Mentoring and rewards & recognition practices are best predictors for KM effectiveness of doctors. Hence, hospitals should pay attention to the following aspects:

i) To emphasize the rewards & recognition and mentoring practices –

- Reward and recognition practices will motivate the doctors to share their knowledge (both tacit and explicit) to others. Hospitals should develop a tailor-made HRM practices for balancing both monetary as well as non-monetary rewards and individual as well as team-based rewards for better results.
- Mentoring practices are considered as an effective medium for the experienced doctors to transfer their critical knowledge to the junior doctors. The high inter-personal trust in mentoring relationship can facilitate knowledge transfer. Hospitals should assign the responsibility to HRM for selecting and training mentors and also facilitating the meeting between for mentor & mentees. In order to sustain the mentoring practices, HRM should monitor and evaluate the

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effectiveness of mentoring practices, on regular basis.

ii) To implement the knowledge-based HRM practices–

In addition to the mentoring and rewards & recognition practices, hospitals should also focus on the following knowledge-based HRM practices for stimulating the KM processes (acquisition, dissemination & application of knowledge) in hospitals:

- Continuous learning & development programs for doctors will enable hospital to acquire requisite external knowledge available from other hospitals / clinical research institutions and build the knowledge stock. It will also enable hospitals to capture and implement the best practices from other hospitals.
- Evaluation of *'knowledge contribution'* as one of the key parameters in the Performance appraisal system for doctors will enhance knowledge sharing practices in hospital. The knowledge contribution can be sharing the explicit knowledge in the knowledge repository / journals or sharing the tacit knowledge in various knowledge sharing forums such as seminars, workshops, conferences, continuous medical education programmes etc.
- Regular clinical rotation of doctors will increase the knowledge flow among various clinical areas.
- Well deliberated succession planning of senior doctors will minimize the knowledge loss tend to happen in hospital due to the resignation and retirement of doctors.

The effective implementation of the above HRM practices will enhance KM effectiveness of doctors (i.e., improved learning, collaboration & decision-making, minimized medical errors, capturing & implementing best practices) and in turn improved hospital performance.

VI. CONCLUSION

As a strategic business partner, HRM should focus on its contribution towards organizational performance. Hence, HRM should assume the role as *'knowledge facilitator'* and implement *'knowledge-based'* practices for developing learning and knowledge sharing culture in the organization. The main contribution of this paper brought out the significance of knowledge-based HRM practices on enhancing KM effectiveness of doctors. This study also highlighted that the presence of mentoring and rewards & recognition practices in hospitals will improve the *'knowledge sharing'* that is the core element of KM processes. This study will hopefully add an impetus for the hospital administrators to focus on HRM and KM practices for improving KM effectiveness of doctors, especially in improved clinical decision making. This study can further be extended to explore the link between knowledge-based HRM practices and hospital performance through the mediating variable as KM effectiveness of doctors.

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