Dynamics of Human Resource Management, Organizational Learning, and Organizational Performance: An Empirical study in Engineering Sector

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The purpose of this study is to examine the relationship among Human Resource Management, Organizational Learning and Organizational Performance. A questionnaire based survey was used to collect primary data. Responses were received from 250 junior, middle and top level executives in engineering organizations. Partial least square path modeling was used for data analysis. The results show that Human Resource Management Strategies influence organizational learning which in turn enhances organizational performance. This paper is limited to Indian Managers. Therefore the influence of culture should be considered in further studies. Upcoming research can be intended for different countries in order to carry out a comparative

Introduction

The growing attention around human resource management (HRM) has caused a considerable body of empirical research to come into sight, investigating the influence of HRM practices on organizational performance. Human resource management practices have the potential to enhance organizational performance (Marchinton and Wilkinson, 2003). Researchers have identified the best human resource management practices which can be associated to organizational performance. They are high levels of teamwork, performance-related pay, decentralised decision making, comprehensive employee recruitment and selection procedures, limited status differences, extensive training, employee involvement and internal communication arrangements, internal career opportunities and broadly defined job descriptions (Jones and Wright, 1992; Arthur, 1994; Pfeffer, 1994; Jackson and Schuler, 1995; MacDuffie, 1995; Marchinton, 1995; Milgrom and Roberts, 1995; Delery and Doty, 1996; Becker and Huselid, 1998; Pfeffer, 1998; Wiesner and McDonald, 2001; Bowen et al., 2002; Guest et al., 2003; Michie and Sheehan, 2005; DeKok et al., 2006). There are mechanisms which play a very important role in strengthening the relationship between human resource management and organizational performance. Human resource management plays a vital role in companies which are directed towards learning (Cabrales et al., 2010). This study focuses on whether organizational learning acts as a mediator in the relationship between human resource management practices and organizational performance. The direct relationship between human resource management and organizational performance and human resource management and organizational learning

are also tested. The study aims to propose a model to explore the relationship between human resource management, organizational learning and organizational performance.

Research Objectives

The cardinal objective of the study is to seek empirical relationships among human resource management, organizational learning and organizational performance. However, to achieve this overall objective, following sub-objectives have been formulated:

1. Perform meta-analysis of the contemporary research and identify the variables of human resource management, organizational learning and organizational performance.

2. Develop and validate a metric to measure the above variables of study.

3. Undertake an empirical research to seek relationship between the above variables.

4. Develop an empirically validated model to fill the research gap in explaining the relationships between the above study variables.

Literature Review

Human resource management and organizational learning

Lado and Wilson (1994) define Human Resource management practices as a set of discrete yet interconnected functions, processes and activities that are directed at attracting, developing, and maintaining a firm's human resources. Human resource management plays an imperative role in facilitating organizational learning. Bhatnagar (2007)

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studied the association of organizational learning with strategic HR roles as well as the organization commitment. Cabrales et al., (2010) studied the direct relationship between human resource management and organizational learning capability. Theriou and Chatzoglou (2007) state that human resource management practices effectively act as a trigger toward effective organizational learning processes.

Thus, we hypothesize

H1. Human resource management positively influences organizational learning.

Human resource management and organizational performance

Previous research has reported positive relationship between human resource management and organizational performance. Osman et al., (2011) indicated that three main human resource management practices namely employee relations and communication, career planning and job/work design have the highest influence on organizational performance. Moideenkutty et al., (2010) examined the relationship between Human Resource Management (HRM) practices and organizational performance and indicated that organizations that implement highly selective staffing, extensive training, performance management practices and employee empowerment are likely to have higher performance.

Thus, we hypothesize:

H2. Human resource management positively influences organizational performance.

Organizational learning and organizational performance

Organizational learning is defined as a process of creation, acquisition and integration of knowledge which aims in the development of resources and capabilities that contribute to enhanced organizational performance (Lopez et al., 2005). (Milliman et al. (2002) suggest that the four principles namely goal setting, flexibility with HR requirement, providing clear guideline, creating cross culture interaction or teams can be useful to improve the performance of enterprises. Khandekar and Sharma (2005) argue that organizational learning is largely reflected through human resource management activities and is positively related to organizational performance. Jones (2000) highlights the importance of organizational learning for performance. Lopez et al. (2005) discussed that the key features of organizational learning can contribute to competitive advantage and, in turn, performance improvement.

Thus, we hypothesize:

H3. Organizational learning positively influences organizational performance.

Figure 1. Hypothetical Research Model
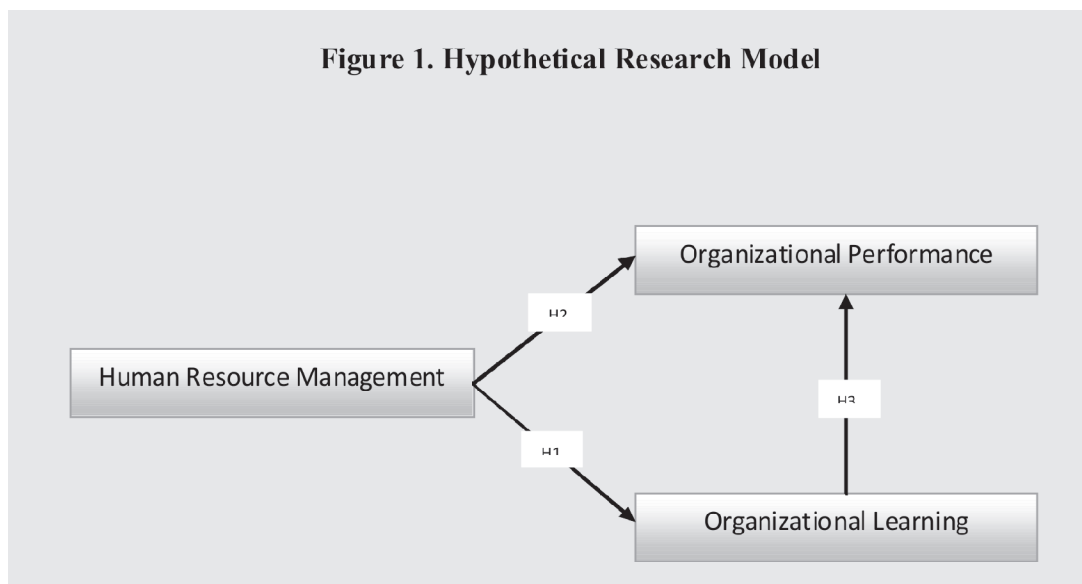
Research Methodology

A structured questionnaire, having 15 questions, was framed to collect responses. These questions were framed on a five-point Likert scale. The questionnaire consists of 4 parts: Human resource management, organizational learning, organizational performance and personal background. The industries were carefully selected from the directory of public sector, private sector, and government organizations. These included industries involved in the manufacture of automobiles, machine tools, electronics and telecommunication, chemicals, and others. A total of 625 questionnaires were distributed to different engineering industries. From these, 273 were collected; among which 250 are valid for analysis. This gives an effective response rate of 40 per cent. The respondents were contacted through the HR manager during their free timings and the purpose as well as

the importance of the research was explained, and also, the anonymity of respondents was guaranteed to ensure that there would be no bias in their response.

Sample Characteristics

The sample consisted of 150 responses from junior executives, 72 responses from mid-level executives, and 28 responses from senior executives with 72 percent male and 28 percent female employees. Majority of the respondents were engineers (54 percent), a sizable number were management executives (26 percent), and the rest were IT professionals. Experience wise about 20 percent had more than 15 years of experience, 40 percent had 10 to 15 years of experience, 15 percent had 5 to 10 years of experience and the rest had less than 5 years of experience.

Data Analysis and Results

Method

The analysis of data employed the partial least square (PLS) approach to structural equation modelling (SEM). The reason for this choice is the simple fact that partial least square path modelling (PLSPM) is an analytic technique that runs principal component analysis (PCA) and regression analysis simultaneously. Thus, PLSPM is considered to be a more efficient analytic technique than the conventional method, in which, PCA and regression analysis are performed separately. Further PLSPM successfully avoids multi-collinearity and measurement errors, while addressing the cause-effect relationships among the research constructs. There are two approaches, namely, covariance and PLS based approach. The covariance – based approach for SEM needs a larger sample (the definition of large size varies from one author to another viz. some define it as sample having more than 100 subjects and some others define it as a sample having more than 200 subjects, at least three indicators and typically requires reflective mode). PLS path modelling (PLS-PM) is generally meant as a component based approach to SEM that privileges a prediction oriented discovery process to the statistical testing of causal hypotheses. Further, PLS does not make assumptions about the population or scale of measurement and there are no distributional requirements (Fornell and Bookstein, 1982). Another benefit of PLS over other SEM techniques such as AMOS, LISREL is that it allows both formularize and reflective indicators to be used in the model (Fornell and Bookstein, 1982). Therefore, this study used PLS technique using SmartPLS® software. The PLS analysis pursued here is a two-stage approach by first assessing the measurement model (validity and reliability), and then assessing the structural model by an estimate of the paths between the latent variables in the model and its predictive power.

Measurement Model

This study investigated the internal consistency of the metric and used three validity assessments viz., content validity, convergent validity, and discriminant validity, and also, the

construct reliability and goodness of fit through R-square. Considering the exploratory nature of this study, the reliability of the study in terms of internal consistency is acceptable in terms of Cronbach's Alpha (0.7 and above) (Table - 1) (Nunnally, 1978). Composite reliability values were all above the suggested value of 0.7 (Dillon-Goldstein's rho), indicating acceptable internal consistency. Content validity is mainly judgmental based on the meta-analysis of literature and discussion with the experts. In this research for each construct the relevant literature has been analyzed for its suitability and during the pilot run the content has been validated by the experts. Convergent validity is by calculating the item-to-total correlations; that is, the correlation of each item to the sum of the remaining items within a variable. Convergent validity measures the extent to which the items truly represent the intended latent construct. Convergent validity is assessed by factor loading and composite reliability measures (Hair et al, 1998). Only factor loading above 0.6 have been considered in this research (Table - 2), which are adequately high (suggested cut-off value 0.4). The composite reliability measures the extent to which items in the construct measures the latent concept. A commonly acceptable threshold value for composite reliability is 0.7 or more, although values slightly below 0.7 have been considered acceptable (Haire et al, 1998). The composite reliability in this research is above 0.7, which indicates reasonably high construct reliability. The average variance extracted (AVE) values (Table - 1), in the present research are all above the suggested values of 0.5 and the metric has relatively high discriminant validity (Fornell & Larcker, 1981). Another method used for testing the discriminant validity is, the square root of the AVE of each construct needs to be much larger, although there are no guidelines about how much larger, than any correlation between this construct and any other construct (Gefen & Straub, 2005). In this research this holds good for most of the constructs as the values are adequately large (Table - 3). Further, the highest correlation is between organizational learning and organizational performance, which is later proved by the hypothesis testing. Finally, R-square is the measure of goodness of fit, is basically one minus the square of unexplained variance. The larger the R-square value better is the fitness of the model. In the present research, R-square values for all the endogenous variables are above 0.6, which indicate that there is more than 60% of influence of exogenous variables on the endogenous variables of study.

Table 1: Reliability and internal consistency of the variables

	AVE	Composite Reliability	R Square	Cronbach's Alpha	Communality	Redundancy
Human resource management	0.8713	0.9713	0	0.963	0.8713	0
Organizational learning	0.9109	0.984	0.6005	0.9804	0.9109	0.5466
Organizational performance	0.8805	0.9671	0.8455	0.9541	0.8805	0.4196

Table 2: Factor Loadings (values below 0.6 excluded)

	Human resource management	Organizational performance	Organizational learning
Human resource management 1	0.9016		
Human resource management 2	0.9394		
Human resource management 3	0.9436		
Human resource management 4	0.9464		
Human resource management 5	0.9354		
Organizational learning 1		0.9532	
Organizational learning 2		0.9582	
Organizational learning 3		0.9693	
Organizational learning 4		0.8692	
Organizational performance 1			0.9522
Organizational performance 2			0.9524
Organizational performance 3			0.9508
Organizational performance 4			0.9555
Organizational performance 5			0.955
Organizational performance 6			0.9603

Table 3: Correlations between the variables

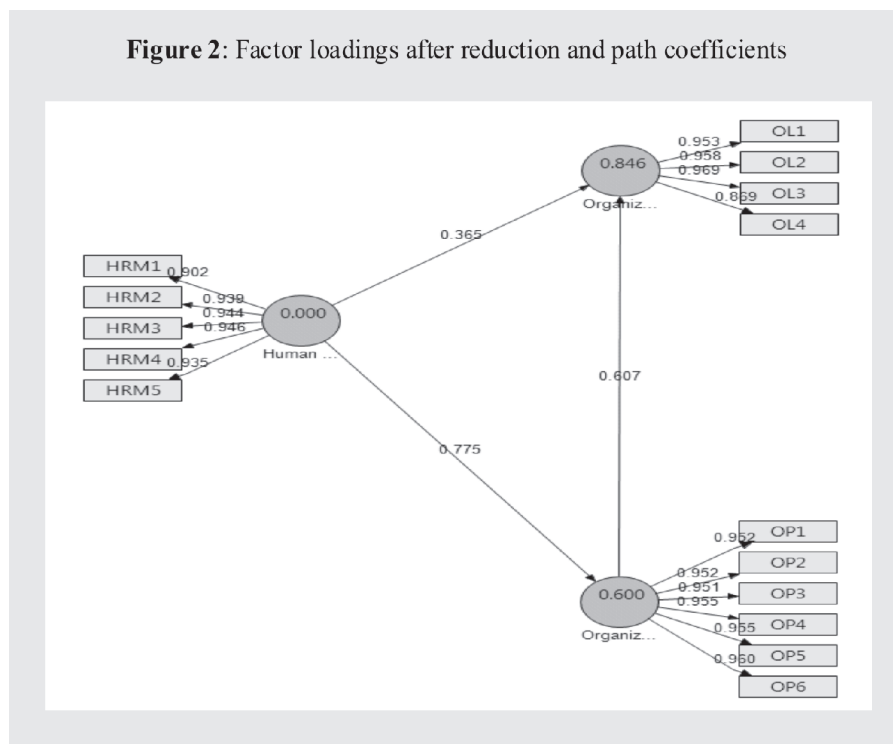|	Human resource management	Organizational learning	Organizational performance
Human resource management	1		
Organizational learning	0.7749	1	
Organizational performance	0.8357	0.8901	1

Alpha Level = 0.05

Structural Model

Results from the structural model, as hypothesized, showed that human resource management was positively related to organizational learning, with a path coefficient of 0.775, which supports the first hypothesis. This means, if human resource management is increased by say 1 unit, the organizational learning will improve by 0.775 units. Further, as expected, human resource management was also positively associated with organizational performance, with a path coefficient of 0.365, a finding that supports the second hypothesis. As anticipated through theoretical study, the organizational learning was positively correlated with organizational performance with a path coefficient of 0.607 thus supporting the third hypothesis. R-square measures the capacity of the manifest variables to describe the related latent variables and it is expected to be higher than 0.60 for each manifest variable (Zaim et al., 2007). Incidentally, the two latent variables namely Human Resource Management and Organizational Learning explained nearly 85 percent of the variance of organizational performance. Human resource management accounted for about 60 percent of variance of organizational learning (Figure - 2). Hence, the model adequately explains the interrelationships between the variables of study.

Figure 2: Factor loadings after reduction and path coefficients

The path coefficients basically show the strength of association between the latent variables of study and hypothesis testing basically performed based on the t-statistic. The t-values and the structural model with the t-values are given in table - 4 and figure - 3. Hence, it is clear that the following hypotheses stand supported.
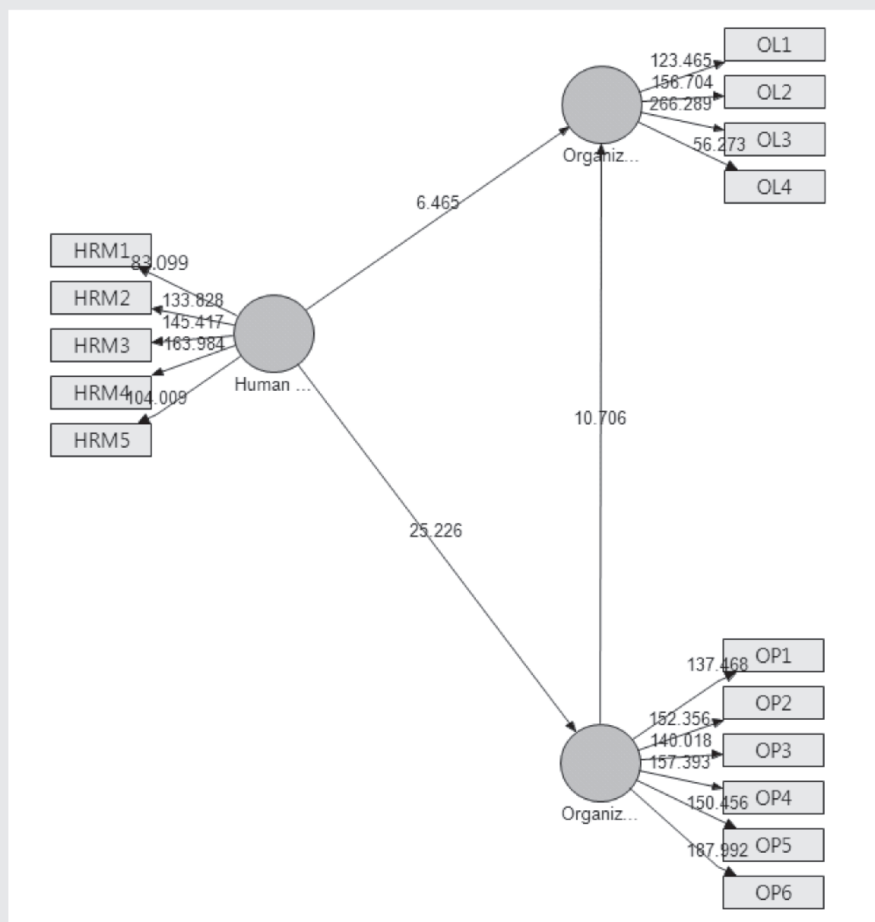
H1: Human resource management positively influences organizational learning.

H2: Human resource management positively influences organizational performance.

H3: Organizational learning positively influences organizational performance.

Table 4: t-statistic of the variables

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
Human resource management -> Organizational learning	0.7749	0.7736	0.0307	0.0307	25.2261
Human resource management -> Organizational performance	0.8357	0.8342	0.0251	0.0251	33.2459
Organizational learning -> Organizational performance	0.607	0.6059	0.0567	0.0567	10.7062

Figure 3: Structural Research Model with correlation and t-statistics

Discussions and Implications

This research identifies a clear path from human resource management to organizational learning, organizational learning to organizational performance and human resource management to organizational performance. The Hypotheses H1, H2 and H3 are supported. There is a necessity for organizations to efficiently and effectively administer organizational learning activities by means of putting into practice an effective human resource management system to augment organizational performance, as human resource management can influence organizational performance positively through organizational learning. As proposed by Lopez et al., (2006), human resource management plays an important role in facilitating organizational learning. It also shows that human resource management has direct and positive influence on organizational learning which is supported by a number of studies (Theriou and Chatzoglou, 2007, Bhatnagar, 2007). From the perspective of organizational learning, the study concluded that it has a positive effect on organizational performance which is supported by Khandekar and Sharma, (2005). Past research (Moideenkutty et al., 2010) is in line with the finding of the present study that human resource management influences organizational performance.

From the findings of the study it can be implied that human resource policies or activities should be constructed to facilitate the activities of organizational learning, because the positive effects on organizational performance cannot be achieved with policies or activities of human resource management alone. In order to enhance a firm's organizational learning, the top management should focus in formulating effective organizational learning policies and facilitate their implementation. It is suggested to the management of engineering organizations that they establish a reward system to motivate employees to devote their effort in organizational learning in order to enhance organizational performance. Engineering organizations can use appropriate information technology as technological-mediated learning is one of the critical factors to supporting learning activities. The top management may improve existing management systems through organizational learning practice, which ultimately increases organizational performance.

Conclusion

The findings of this study have been largely unexplored by prior researchers. The results indicate that human resource management along with effective organizational learning activities can enhance the performance of organizations to a great extent. Organizations should focus on building an effective human resource management system with appropriate organizational learning policies. Although the empirical results of the study largely support the current model, at least two limitations should be carefully considered. First, as individual respondents make available the empirical data, probable biases may perhaps exist. Second, given that the data were collected in India, the characteristics of the surveyed engineering organizations could be different from those in other countries. Therefore, the present outcomes do not necessarily represent the general case. On the other hand, it possibly will give a basic reference for the organizations sited in other countries whose environment is comparable to those in India. The issue of adequate sample size is not a major consideration in structural equation modeling, as the bootstrapping technique can address this issue to a considerable extent. The future scope of this research lies in extending the study for the other dimensions of competitive advantage, because the ultimate aim of organizational learning is to make the organization more innovative so as to ensure sustainability.

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