

**MODELLING HUMAN RESOURCE SYSTEMS AND ORGANISATIONAL
EFFECTIVENESS: AN EMPIRICAL STUDY**

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Abstract

Human resource systems have assumed extensive importance in recent years in the wake of globally competitive scenario. Each firm is seeking to transform into a globally adoptive organization by instilling flexibility, efficiency, altruism and transparency into its globally networked talents, processes and partnerships. The human resource organization is confronted with a responsibility to integrate, anticipate and build a futuristic organization. In this regard, human resource systems management has to proactively seek to build corporate wide initiatives that transcend borders and nationalities. Human Resource systems is responsible for developing various other systems which deal with the people, their problems, organizational dynamics and various related matters. On the other hand, organizational effectiveness is the degree to which an organization realizes its goals and is seen in terms of the sustainable development of the organization. The present research study is an empirical approach to study the impact of human resource systems on organizational effectiveness. For developing research framework, a number of variables have been identified on the basis of review of literature. A self designed questionnaire was framed based on the factors of human resource systems and organizational effectiveness. The scope of the study extends to the telecom sector of Jammu and Kashmir where Bharat Sanchar Nigam Ltd. (BSNL) was undertaken for the study. Purposive and stratified sampling was used to draw the sample of 200. The data collected was subjected to various statistical tools. Regression analysis revealed a positive association between human resource systems and organizational effectiveness.

Key Words: Human Resource Systems, Regression analysis, Organizational Effectiveness.

PROLOGUE OF THE STUDY

Human Resource Systems have assumed considerable importance in recent years in the wake of globally competitive scenario. Each firm is seeking to transform into a globally adaptive organization by instilling flexibility, efficiency, altruism and transparency into its globally networked talents, processes and partnerships. The Human Resource organization is confronted with a responsibility to integrate, anticipate and build a futuristic organization. In this regard, Human Resource Systems Management has to proactively seek to build corporate wide initiatives that transcend borders and nationalities. The management initiatives that organizations are taking in response to the change are bringing people squarely centre stage. New configurations of the organizations that are emerging, share one common objective: “make the best possible use not only of technology, systems or capital, but also of human resources.” The transition from traditional human resource management to new peoples’ management calls for a new and crucial responsibility of identifying the organizational and individual capabilities. There is a need for greater involvement and participation of people in decision making, decentralization and delegation of power.

The success of the organizations in modern competitive world depends on the strategy they adopt, create or regenerate. The organizations should recognize human resource as a new source of core competence and manage it strategically for achieving competitive advantage. In the current competitive business environment, the need of the organizations is to adapt an integrated model of Human Resource Systems for thriving on the cutting edge competition. The concept of Human Resource System assumes that human beings are a great asset to the organization. They are not merely necessary evils to be reckoned with; in fact they can contribute a great deal to the achievement of the organizational goals. This positive view of people working in the organization as an asset with unlimited potential is the core concept of Human Resource System.

The Human Resource Systems Culture involves a shift from the old approach of control and vigilance to the new paradigm of involvement and self development and openness. As can be seen from the figure 1.1, the trend line the evolution of Human Resource Systems has taken place from production oriented model to people’s management model.

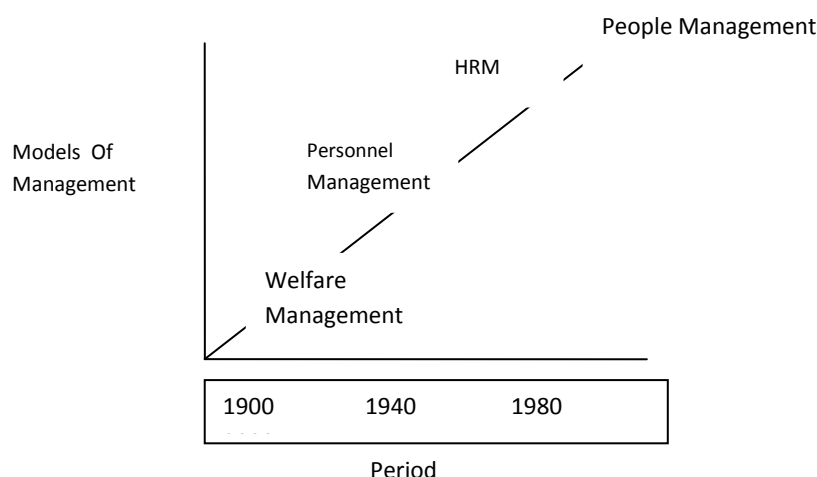


Figure 1.1: Evolution of Human Resource Systems

Source: Pareek, Udai and Rao, T.V), Designing and Managing Human Resource System, Oxford and IBH Publishing Co., New Delhi, p12-45.(hrdbook.pdf,2008).

Human Resource Management themes including “Human Capital Theory” and “Human Asset Accounting” can be found in the literature from 1970’s however, the modern view of Human Resource Management gained prominence in 1981. The Harvard School sees employees as resources and views them different from other resources. The theory suggests that the human resources cannot be managed in the same way as the other resources are managed. Here, the stress is on people as Human Resources.

The Harvard Map Outlines Four Policy Areas: A Phenomenal Example

- **Human Resource flows-** recruitment, selection, placement, promotion, appraisal and assessment, promotion, termination, etc.
- **Reward System:** pay systems, motivation, etc.
- **Employee Influence-** delegated levels of authority, responsibility and power
- **Work Systems-** definition/design of work and alignment of people

The above stated four policy areas in turn lead to the four C’s of Human Resource policies:

- Commitment
- Congruence
- Competence
- Cost effectiveness

This shows that organizations in the wake of globalization can be effective if they strategically utilize the resources for attaining effectiveness. Sparrow and Hiltrop(1994), point out a matching model of Strategic Human Resource Management originally outlined by Tichy, Fomburn and Devanna(1982) which states that-

Humans or People – as opposed to just employees- need to be managed in a way that is consistent with the broad organizational requirements such as quality or efficiency.

Personnel policies and organizational structures have to be managed in a way that is congruent with the organization's strategy. The theory further suggests that organizational effectiveness depends on a tight "fit" between human resources and business strategies. Human Resource Management Strategies are all about making business strategies work and so emphasis is placed on how to best match and develop "appropriate Human Resource Management Systems"

In contrast to this view, the Michigan theorists have a different view towards human resources. They have highlighted the following as the most important Human Resource issues to achieve such a match:

- Selection of the most suitable people to meet business needs
- Performance in the pursuit of business objectives
- Appraisal, monitoring performance and providing feedback to the organization and its employees
- Rewards for appropriate performance
- Development of the skills and knowledge required to meet business objectives.

This study is further strengthened by the New York variation on the matching model, outlined by Schuler and Jackson (1987). Influenced by the Michael Porter's generic competitive strategies (quality enhancement, innovation and cost leadership or reduction) Schuler and Jackson developed a set of "needed role behaviors" for each strategy.

Sparrow and Hiltrop (1994) stipulated a set of hypothesis about the personnel and industrial relations practices and identified the most important Human Resource Management practices about which strategic decisions had to be made. They have suggested logical alternatives that could be applied in competitive environment. According to HRD/ Organizational Alignment Model, "Human Resource Management could be seen as a menu of strategic choices to be made by Human Resource executives intended to promote the most effective role behaviors that are consistent with the organization strategy and are aligned with each other."

Model of Human Resource System

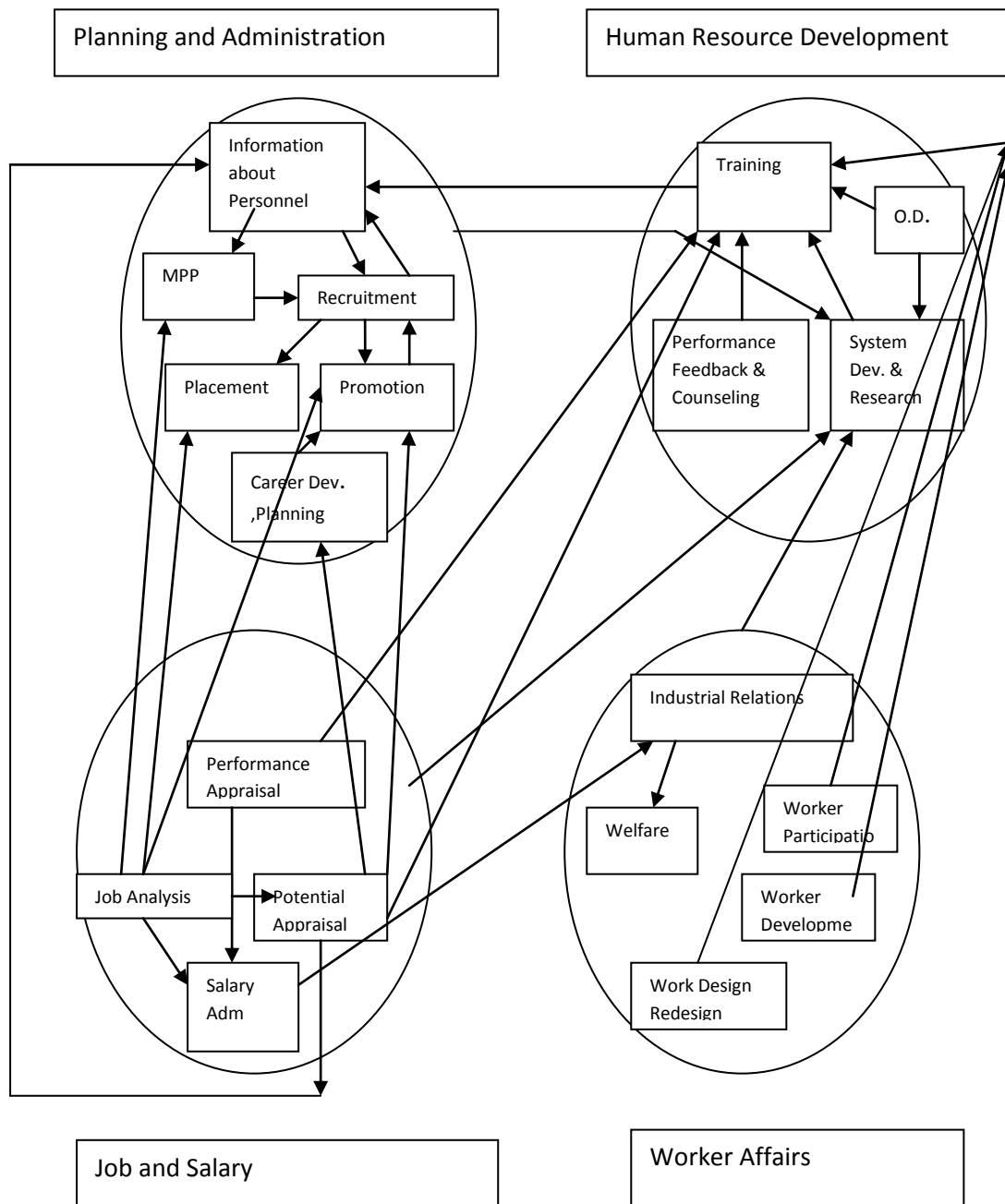


Figure 1.2 Human Resource Systems

Source: Pareek Udai, Rao T. V., Designing and Managing Human Resource Systems, 1981, Oxford and IBH , p.19

CONCEPT OF ORGANISATIONAL EFFECTIVENESS

Organizational Effectiveness is defined and conceptualized in different ways and no unanimity is found in different approaches. A large volume of literature is available on the concept and working of organizational effectiveness. Various terms are used interchangeably, such as efficiency, productivity, profitability, organizational growth to denote organizational effectiveness. Effectiveness may be defined as the degree to which an organization realizes its goals, also it can be seen in terms of the survival of the organization. An organization remains effective as long as it uses its resources in an efficient manner and continues to contribute to the large system.

Campbell (1970) has done considerable research on organizational effectiveness, has reviewed various studies and found that thirty criteria have been used to measure Organizational effectiveness. Based on these reviews, he arrived at the conclusion that:

“Since an organization can be effective or ineffective on a number of different facets that may be relatively independent of one another, Organizational effectiveness has no operational definition.”

Barnard (1968) views that Organization Effectiveness is the degree to which operative goals have been attained while the concept of efficiency represents the cost/benefit rate incurred in the pursuits of these goals. Thus effectiveness is related to goals which are extremely focused. Efficiency is used in engineering way and it refers to the relationship between input and output.

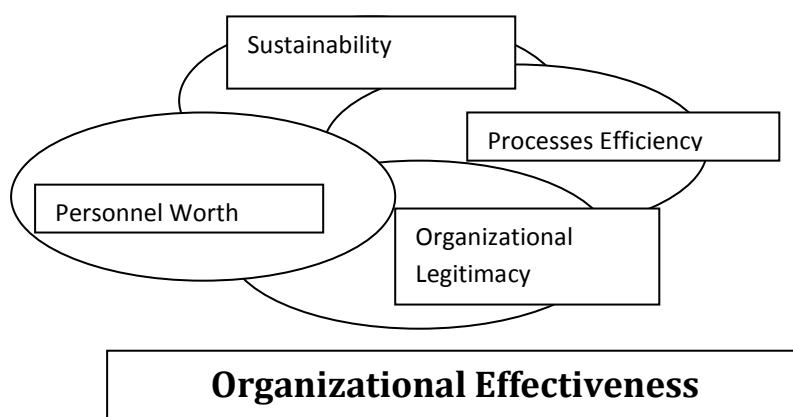


Figure 1.3: Organizational Effectiveness Model.

Source: Barnard, C. I. (1968), The functions of the Executive, Harvard University Press, Edition 30. pp 194-248.

EVIDENCES FROM THE EXISTING LITERATURE

Organizations in the industrialized nations are going through one of the toughest periods in the memory. From every quarter the watch word is effectiveness, and it is argued that an organization that is not striving to be effective faces demise. Human Resource Systems plays an important role in such effectiveness, and it is argued that the organization which is not striving to be effective faces demise (Verma, 1988, 1996). Behavior of the employees and managers is an essential part of organizational effectiveness. Bartlett and Ghoshal (1990) suggest that hr function should play a central role in Organizational Effectiveness. Steers (1977) suggests three different perspectives to guide research on organization effectiveness: Goal optimization, in which success is essentially how well the organization achieves what it sets out to achieve; the systems perspective in which success is defined in terms of how the organization adapts to the environment and a behavioral perspective, in which emphasis is on role of employee behavior in long term organizational effectiveness.. Using these perspectives, it could be argued that an effective organization is one in which the behavior of employees contributes towards the attainment of organizational goals and enables the long term adaptation of the organization to its environment.

Research on Human Resource Strategy to sustain Business Excellence (Hari Nair, 2006) shows that Human Resource stands out in three stages:

- Commencement: This ensures right person at the right place, clarity of goals and more customer focus.
- Practicing: To practice the culture of Total Peoples Management and Total Quality Management with an apparent career succession and talent management ensures involved, aggravated and enthusiastic workforce.
- Breakthrough: Manpower setting up through mechanized Human Resource Information Systems ensures systematic, speedy and much effective decision making.

A number of studies (e.g. Bowen and Ostroff, 2004; Singh, 2004; Katou and Budhwar, 2006; Dimba and K'Óbonyo, 2009) examining the effect of strategic human resource management practices on organizational performance have been conducted most especially in the developed countries.

Three Archetypal HR Systems

Lepak, Bartol, and Erhardt (2005) suggested focusing on the purpose of HR systems when defining them. Compliance and commitment systems represent two widely discussed archetypes with distinct objectives. We use the term *archetype* in recognition that these are ideal systems that organizations can enact to varying degrees. In compliance systems employees are treated as externally motivated and benefiting from appreciable monitoring and control (Boxall & Macky, 2009; Walton, 1985). Well-specified rules and procedures are seen as necessary for obtaining employee adherence to organizational goals. Moreover, employees are considered an expense to be minimized by reducing direct labor costs and improving efficiency (Arthur, 1994). Organizations often depend on helping behaviors to deal with nonroutine aspects of work. Helping behavior is a robust predictor of group and organizational performance (Podsakoff, MacKenzie, Paine, & Bachrach, 2000) and has become more important in light of the movement toward greater employee involvement (e.g., Boxall & Macky, 2009), interactive work structures (e.g., Frenkel & Sanders, 2007), and human resource (HR) flexibility within organizations (e.g., Beltra´ n-Marti´ n, Roca-Puig, Escrig-Tena, & Bou- Llusar, 2008). Because helping behavior involves actions by which individuals positively affect others, much organizational research has sought to identify its immediate dispositional and situational antecedents.

Research Methodology

The objectives and the hypothesis set for the study have provided a lead for the research methodology. Every care has been taken in the selection of tools and techniques for generating and collecting the data. The scope of the study extends to the state of Jammu and Kashmir where a case of public sector organization namely Bharat Sanchar Nigam Limited (BSNL) was taken under study. The data has been collected both from primary and secondary sources. The primary data has been collected by the use of a questionnaire. A sample of 200 was selected by using purposive and stratified random sampling technique. The sample was collected from six districts of Jammu and Kashmir which includes Srinagar, Baramulla, Anantnag, Jammu, Udhampur and Kathua. The analysis of the data has been done by using various tools to assess the hypotheses laid.

Objectives of the study

1. To study the impact of human resource systems on organizational effectiveness.
2. To study whether different human resource factors impact organizational effectiveness differently.

3. To provide valuable suggestions and recommendations for enhancing organizational effectiveness through effective human resource systems.

Hypotheses of the study

1. There is a positive impact of human resource systems on organizational effectiveness.
2. Different human resource systems have different level of impact on organizational effectiveness.

Analytical Approach

Human Resource Systems consists of several interrelated components, which can be regarded as subsystems (Arthur, 1994). The four main subsystems of Human Resource systems include:

1. Job & Salary
2. Planning & Administration
3. Human Resource Development
4. Worker Affairs

Organizational effectiveness can be seen in terms of productivity, profits, market share, job satisfaction and customer satisfaction. The present study analyzes and evaluates the human resource systems and organizational effectiveness in the organization under study. To make the sample representative Stratified Random Sampling has been used.

Selection of Variables and Design of Questionnaire

The questionnaire is designed by keeping in mind the subsystems of human resource systems and the factors of organizational effectiveness. The emphasis is on the strategic human resource business approach in which questions on human resource systems were chosen on planning and management subsystems, communication, organizational culture, job and salary aspects, performance appraisal system and feeling of belongingness have been designed. Questionnaire is designed on Five point scale 1 marked for Strongly Disagree, 2 for Disagree, 3 for Neutral, 4 for Agree and 5 for Strongly Agree. The factors chosen for organizational effectiveness were : Adaptability, Flexibility, Productivity, Job satisfaction, Profitability, Acquisition of Scarce and Valued Resources, Absence of Organizational Strain, Control over external environment, Employee Development, Efficiency, Employee Retention, Growth, Integration of individual goals with organizational goals and Open Communication.

Regression Analysis has been used to examine the relation of a dependent variable (response variable) to specified independent variables (explanatory variables). The mathematical model of their relationship is derived as a regression equation.

The dependent variable is modeled as a random variable because of uncertainty as to its value, given only the value of each independent variable. A regression equation contains estimates of one or more hypothesized regression parameters (“constants”). These estimates are constructed using data for the variables, from a sample. The estimates measure the relationship between the dependent variable and each of the independent variable. They also allow estimating the value of the dependent variable for a given value of each respective independent variable.

ANALYSIS AND INTERPRETATION

Reliability Analysis

Human Resource System

Fig.1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.961	.960	44

Organizational Effectiveness

Fig.2: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.904	.905	12

The figures 1 and 2, as given above indicates that the scale used for the factors understudy is reliable as Cronbach’s value lies above .7. A commonly accepted rule of thumb for describing internal consistency using Cronbach's alpha is as follows:

$\alpha \geq 0.9$: Excellent

$0.8 \leq \alpha < 0.9$: Good

$0.7 \leq \alpha < 0.8$: Acceptable

$0.6 \leq \alpha < 0.7$: Questionable

$0.5 \leq \alpha < 0.6$: Poor

$\alpha < 0.5$: Unacceptable

Source: *George, D., & Mallery, P. (2003). SPSS for Windows step by step: A simple guide and reference. 11.0 update (4th ed.). Boston: Allyn & Bacon.*

KMO and Bartlett's Test

For determining whether the data is appropriate for factor analysis, we first need to determine whether the sampling is adequate for analysis. This is accomplished by using KMO measure of sampling adequacy (1974). It compares the observed correlation coefficients to the partial correlation coefficients. A KMO value of .90 is best; below .50 is unacceptable.

Source: *Statistics in Criminal Justice: Analysis and interpretation (Jones & Bartlett Learning, 01-Aug-1999 - 362 pages).*

Fig 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.914
Bartlett's Test of Sphericity Approx. Chi-Square	6996.002
Df	946
Sig.	.000

Factor Analysis:

Human Resource Factors: Using Principal Component Analysis Method

This method is used to estimate the factor loadings as shown below

Rotated Component Matrix

	Component						
	1	2	3	4	5	6	7
h26	.756						
h27	.702						
h28	.700						
h34	.689						
h29	.649						
h38	.602						
h18		.765					
h19		.756					
h16		.742					
h17		.651					
h15		.630					
h14			.620				
h1			.783				
h2			.730				
h3			.701				
h5			.629				
h4			.602				

h6			.563				
h7			.537				
h8				.821			
h41			.809				
h42			.781				
h39			.707				
h40			.704				
h43			.577				
h20					.809		
h21					.729		
h31					.644		
h22					.602		
h24					.601		
h25					.729		
h23					.644		
h32						.666	
h37						.631	
h33						.530	
h36							.521
h12							.511
h13							.739
h11							.673
h30							.719
h44							.614
h35							.599
h9							.580
h10							.566

Organizational Effectiveness: Using Principal Component Analysis Method

Rotated Component Matrix ^a		
	Component	
	1	2
e8	.893	
e12	.893	
e6	.828	
e7	.803	
e5	.716	
e1	.574	

e3		.824
e2		.733
e11		.727
e4		.723
e10		.547
e9		.532

Regression Analysis

Regression analysis is used to examine the relationship of a dependent variable (response variable) to specified independent variables (explanatory variables).It is represented in the form of a mathematical equation.

Results:

Descriptive Statistics

	Mean	Std. Deviation	N
avge	3.4329	.77662	200
avgeg5	3.3736	.85686	200
avgeg6	2.9630	.70092	200
avgeg7	4.0243	.57787	200
avgeg4	3.5425	.84588	200
avgeg1	3.0150	.91275	200
avgeg2	3.6633	.87715	200
avgeg3	3.3093	1.06142	200

Stepwise Regression:

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	avgeg5	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	avgeg1	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	avgeg7	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: avge

Interpretation:

The above table depicts that stepwise regression were used for regressing dependent variable organizational effectiveness (labeled as Avge) with all independent variables of human resource systems (labeled as avgeg1, avgeg2, avgeg3, avgeg4, avgeg5, avgeg6 and avgeg7).

Fig. A: Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.895 ^a	.801	.800	.34740
2	.970 ^b	.942	.941	.18872
3	.975 ^c	.950	.949	.17509

- a. Predictors: (Constant), avgeg5
- b. Predictors: (Constant), avgeg5, avgeg1
- c. Predictors: (Constant), avgeg5, avgeg1, avgeg7
- d. Dependent Variable: avge

Interpretation:

R² denotes coefficient of determination. It is used in the context of statistical models whose main purpose is the prediction of future outcomes on the basis of other related information. It is the proportion of variability in a data set that is accounted for by the statistical model. It provides a measure of how well future outcomes are likely to be predicted by the model.

In the above figure, R Square value for model 1, 2 and 3 is .801, .942 and .949 respectively. This reveals that there is 80%, 94% and 95% coefficients of determination between dependent and independent variables.

Fig B: ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	96.127	1	96.127	796.499	.000 ^a
	Residual	23.896	198	.121		
	Total	120.024	199			
2	Regression	113.007	2	56.504	1586.430	.000 ^b
	Residual	7.017	197	.036		
	Total	120.024	199			
3	Regression	114.015	3	38.005	1239.727	.000 ^c
	Residual	6.009	196	.031		
	Total	120.024	199			

- a. Predictors: (Constant), avgeg5
- b. Predictors: (Constant), avgeg5, avgeg1
- c. Predictors: (Constant), avgeg5, avgeg1, avgeg7
- d. Dependent Variable: avge

Interpretation:

In the above table, the value of sig. lies below 0.05. This reveals that there is a strong positive impact of human resource systems on organizational effectiveness as the values of Pearson correlation in the model summary are 89.5%, 97% and 97.5% respectively for model 1, 2 and

Fig. C: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.697	.100		6.964	.000
	avgeg5	.811	.029	.895	28.222	.000
2	(Constant)	.424	.056		7.608	.000
	avgeg5	.512	.021	.565	24.613	.000
	avgeg1	.425	.020	.500	21.770	.000
3	(Constant)	.013	.088		.147	.003
	avgeg5	.453	.022	.499	20.674	.000
	avgeg1	.399	.019	.469	21.350	.000
	avgeg7	.172	.030	.128	5.734	.000

a. Dependent Variable: avge

Interpretation:

The above table reveals that the value of sig lies below 0.05, which means that there is a positive impact of human resource systems on organizational effectiveness.

Regression analysis also reveals different R (Pearson correlation) and R Square (coefficient of determination) values which in turn determine the different level of impact on organizational effectiveness with regard to different factors of human resource systems.

Result: Hypotheses stands accepted.

Findings, Discussion and Conclusion

Human Resource Systems have assumed considerable importance in recent years in the wake of globally competitive scenario. Each firm is seeking to transform into a globally adaptive organization by instilling flexibility, efficiency, altruism and transparency into its globally networked talents, processes and partnerships. The Human Resource organization is confronted with a responsibility to integrate, anticipate and build a futuristic organization. In this regard, Human Resource Systems Management has to proactively seek to build corporate wide initiatives that transcend borders and nationalities. The management initiatives that organizations are taking in response to the change are bringing people squarely centre stage. New configurations of the organizations that are emerging, share one common objective: “make the best possible use not only of technology, systems or capital, but also of human resources.” The transition from traditional human resource management to new peoples’ management calls for a new and crucial responsibility of identifying the organizational and individual capabilities. There is a need for greater involvement and participation of people in decision making, decentralization and delegation of power.

The success of the organizations in modern competitive world depends on the strategy they adopt, create or regenerate. The organizations should recognize human resource as a new source of core competence and manage it strategically for achieving competitive advantage. In the current competitive business environment, the need of the organizations is to adapt an integrated model of Human Resource Systems for thriving on the cutting edge competition.

There has been a growing literature in the field of organizational effectiveness. Many researchers have approached differently to this concept. The present research paper is an empirical approach towards studying the impact of human resource systems on organizational effectiveness. Various scientific tools were applied to the data so collected through questionnaire. The important findings of the study based on the statistical data are revealed that there is a strong positive impact of different human resource factors on organizational effectiveness.

The human resource factors identified were:

- Planning and management subsystems
- Communication
- Organizational culture
- Job and salary aspects
- Performance appraisal system

- Feeling of belongingness.

The factor which was studied as dependent variable in the study was organizational effectiveness which itself comprised of following variables:

- Adaptability, Flexibility
- Productivity
- Job satisfaction
- Profitability
- Acquisition of Scarce and Valued Resources
- Absence of Organizational Strain
- Control over external environment
- Employee Development
- Efficiency
- Employee Retention
- Growth
- Integration of individual goals with organizational goals
- Open Communication.

Therefore the study concludes that there is a positive impact of human resource systems on organizational effectiveness. Furthermore, different human resource systems have different level of impact on organizational effectiveness.

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