

A STUDY ON HUMAN RESOURCE DEVELOPMENT IN DYNAMIC MARKETING SYSTEMS AT BHEL, BENGALURU, INDIA.

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Abstract

Human Resources Development as a tool of internal customer development contributes to improving employees conceptual, technical and human skills. Practicing employee oriented policies such as participative management, grievance handling machinery and open communication have resulted in harmonious relations and steady increase in productivity. Keeping in view the various aspects of Human resources development such as work place relations; organizational climate based on job satisfaction, motivation and communication; working conditions; performance appraisal, training and development, an attempt has been made in the study to assess the opinion of Bharat Heavy Electricals Limited employees about HRD programmes practiced by their management in Bangalore office. Hence in this study an attempt is made to measure the HRD climate, and in particular to analyze and highlight features of HRD in BHEL, Bangalore. BHEL is often cited as an example of a successful company in the public sectors. To measure the Human Resource Development climate in BHEL, Rensis Likert's summated scaling technique was adopted. Forty-one statements were prepared from a search of literature and discussions with HRD Managers and Academic experts. To measure the level of HRD climate in BHEL, 325 Officers (executives and supervisors), were selected on non-random basis. Regarding the analysis of the data statistical tools like chi-square test, analysis of variance, "Z" test and factor analysis have been applied.

Key Words: HRD Systems, Organization, HRD Climate, Employees Efficiency, Job Satisfaction.

Introduction

Human resource development as a tool of internal customers development has become a fashionable term for even the routine personnel management functions like dealing with people in the organization right from recruitment to retirement, training, development, salary/wages administration; performance appraisal, career development, succession plans and cover all aspects relating to knowledge, skills and attitude.

Human resources development (HRD)

HRD is a part of the function of human resources management. Unless human resources are adequately trained and developed up to the required levels of proficiency requirement, they cannot be deemed to effectively manage. Thus HRD makes possible the effective management of human resources.

“Human Resource Development in the organizational context is a process by which the employees of an organization are helped in a continuous and planned way, to:

1. Acquire or sharpen capabilities required to perform various functions associated with their present or expected future roles;
2. Develop their general capabilities as individuals and discover and exploit their own inner potentials for their own and/or organizational development purposes; and Develop an organizational culture in which supervisor-subordinate relationships, teamwork, collaboration among sub-units are strong and contribute to the professional well being, motivation and pride of employees”. Success of an organization mainly depends on the quality of its manpower and its performance. It is claimed that one of the common attributes of success of an organization is Human Resource Development. Human Resources Development contributes to improving employees conceptual, technical and human skills. Practicing employee oriented policies such as participative management, grievance handling machinery and open communication have resulted in harmonious relations and steady increase in productivity.

Keeping in view the various aspects of Human resources development such as work place relations; organizational climate based on job satisfaction, motivation and communication; working conditions; performance appraisal, training and development, an attempt has been made in the study to assess the opinion of State Bank of India, Bangalore branches employees about HRD programmes practiced by their management. HRD Climate is a concept which refers to the perception of employees of

an organization about the HRD programmes of management towards workforce. Hence in this research paper is made an attempt to measure the HRD climate, and in particular to analyze and highlight features of HRD in BHEL Bangalore office. BHEL is often cited as an example of successful enterprises in the public sectors.

Research Methodology

To measure the Human Resource Development climate in BHEL, Rensis Likert's summated scaling technique was adopted. Forty-one statements were prepared from a search of literature and discussions with HRD Managers and Academic experts.

These statements were framed relating to training and development, superior-subordinate relationship, Job-satisfaction, motivation, communication and performance appraisal, to facilitate the purpose of preparing questionnaire which was administered.

A pre-test was conducted for which sixty respondents (BHEL employees) were asked to indicate their response with each statement, checking one of the following direction-intensifying descriptions using 5 point scale. The various responses are assigned scale values. In this study 5, 4, 3, 2, 1, scale values were used to measure HRD climate in BHEL. A rating of 5 indicates that the statement is ALMOST ALWAYS TRUE, a rating of 4 indicates that the statement is MOSTLY TRUE, a rating of 3 indicates that the statement is SOMETIMES TRUE, a rating of 2 indicates that the statement is RARELY TRUE, and a rating of 1 indicates that the statement is NOT AT ALL TRUE, about the HRD climate in SBI. The study was conducted during August & September 2010.

A total score for each respondent from all the forty-one statements was calculated using the above scoring procedure. The scores of sixty respondents were arranged in descending order. Item analysis technique was adopted to reduce from the total set of forty-one statements to twenty-five statements, a smaller one which is more consistent sub-set to be included in the final instrument (i.e.) to include only those statements that discriminate among respondents with respect to their attitude towards HRD climate in BHEL. To perform an item analysis the above sixty respondents were divided into two groups. The first group consisted of those respondents with the top 25% of the total scores (the first 15 respondents with the highest total score) and the second group

consisted of respondents those with the lowest 25% of the total scores (i.e.) the last 15 respondents with the lowest total scores. The above mentioned extreme groups were interpreted to represent the most favorable and the least favorable attitude group towards HRD climate and were used as criterion groups by which individual statements were evaluated.

The mean score for each statement for favorable attitude group and unfavorable attitude group were computed. Those statements with mean differences are zero or nearest to zero are to be considered as poor statement and are to be eliminated. For the purpose of study, statements having a difference of less than 0.4 were deleted arbitrarily.

Those statements that have difference of greater than 0.4 are the best and only those statements (25) are included for final study. The maximum score a respondent would get from all the 25 statements would be 125 and the minimum score 25, and average score is 75. To measure the level of HRD climate in BHEL, 325 Officers (executives and supervisors), were selected on non- random basis. To collect the required information, questionnaires were administered.

Distribution of Officers by their Level of Hrd Climate

The following table gives the distribution of the sample respondents (officers) by their level of HRD climate.

TABLE:1.
Distribution of Officers by their Level of Hrd Climate

HRD climate	Number of Sample respondents	Percentage
Fair	78	24
Good	114	35
Excellent	133	41
Total	325	100

Relationship Between Independent Variables and Hrd Climate in SBI

The identified variables, which might influence the level of HRD climate, are as follows: Age, Educational Qualification, Gross Salary per month (Rs.), Family Income per year (Rs.), Length of Service, Number of dependents, Cadre of employees, Department.

Significance of the relationship of all the above eight variables with the opinion of officers about HRD climate has been analyzed by applying the statistical techniques

such as 'Chi-square' test, 'Analysis of Variance' (F– test), “Z” test and Factor Analysis. To examine the relationship with the opinion of Officers about HRD climate, only the first six independent variables are considered.

1 Relationship Between Independent Variables and Hrd Climate of Officers

The sample respondents 325 are officers. The relationship between independent variables (8) and HRD climate of officers are examined.

Age and Level of Hrd Climate

Age of an employee of BHEL as a correlate of period of his service is likely to influence the HRD climate. For analyzing the extent of the relationship between age and HRD climate, the age of the Officers in SBI has been classified as follows: A: upto 40 years; B: 41-50 years; C: Above 50 years.

The following table gives clear information regarding the independent variables and the level of HRD climate of BHEL officers.

It is proposed to test the hypothesis that the officers' opinion/attitude about HRD climate in BHEL under different age groups does not differ significantly. Chi-square test was applied.

TABLE: 2
Distribution of Officers on the Level of Hrd Climate: Chi-square Test

Age group	HRD climate			Total
	Fair	Good	Excellent	
A (Young)	30 (44%)	18 (26%)	20 (30%)	68(100%)
B (Middle)	36 (23%)	62 (40%)	56 (36%)	154(100%)
C (Old)	12 (12%)	34 (33%)	57 (55%)	103(100%)
Total	78 (24%)	114 (35%)	133(41%)	325(100%)

Chi-square Value: 28.99.

Educational Qualification	HRD climate			Total
	Fair	Good	Excellent	
A	24 (49%)	14 (29%)	11 (22%)	49 (100%)
B	42 (26%)	65 (39%)	58 (35%)	165 (100%)
C	12 (11%)	35 (31%)	64 (58%)	111 (100%)
Total	78 (24%)	114 (35%)	133 (41%)	325 (100%)

Chi-square value: 35.83.

Gross Salary	HRD climate			Total
	Fair	Good	Excellent	
A	36 (21%)	62 (36%)	75 (43%)	173 (100%)
B	19 (21%)	34 (37%)	38 (42%)	91 (100%)
C	23 (38%)	18 (29%)	20 (33%)	61 (100%)
Total	78 (24%)	114 (35%)	133 (41%)	325 (100%)

Chi-square value: 7.84

Family Income	HRD climate			Total
	Fair	Good	Excellent	
A	26 (29%)	30 (33%)	34 (38%)	90 (100%)
B	42 (26%)	61 (38%)	58 (36%)	161 (100%)
C	10 (13%)	23 (31%)	41 (55%)	74 (100%)
Total	78 (24%)	114 (35%)	133 (41%)	325 (100%)

Chi-square: 10.32.

Length of Service	HRD climate			Total
	Fair	Good	Excellent	
A	28 (52%)	16 (30%)	10 (18%)	54 (100%)
B	40 (24%)	60 (37%)	64 (39%)	164 (100%)
C	10 (9%)	38 (36%)	59 (55%)	107 (100%)
Total	78 (24%)	114 (35%)	133 (41%)	325 (100%)

Chi-square: 39.65.

Number of dependents	HRD climate			Total
	Fair	Good	Excellent	
A	35 (25%)	50 (36%)	54 (39%)	139 (100%)
B	43 (23%)	64 (34%)	79 (43%)	186 (100%)
Total	78 (24%)	114 (35%)	133 (41%)	325 (100%)

Chi-square value: 0.45.

Table 1.2 clearly indicates that in a sample of 325 officers 55% of those belonging to old age group and 36% of those belonging to middle age group felt that the HRD climate in BHEL is excellent. The calculated value of chi-square (28.99) exceeds the table value of chi-square (5.991) for 4 degrees of freedom at 5% level of significance. Hence the hypothesis is not accepted.

Average HRD Score of Officers

The average HRD score of the groups of sample officers on the basis of their independent variables with “F” and “Z” is given in the following table.

TABLE: 3
Average Hrd Score of Officers and Tests: “f”/ “z”

Age group	Average score	Sample size	F test
A	90.03	68	12.79
B	92.40	154	
C	102.33	103	
Total	95.05	325	
Edu. Qualifn	Average score	Sample size	F test
A	86.39	49	13.79
B	93.27	165	
C	101.52	111	
Total	95.05	325	
Gross Salary	Average Score	Sample size	F test
A	97.02	173	2.64
B	94.10	91	
C	90.89	61	
Total	95.05	325	
Family Income	Average Score	Sample size	F test
A	94.70	90	3.98
B	92.89	161	
C	100.18	74	
Total	95.05	325	
Length of service	Average score	Sample size	F test
A	84.89	54	12.82
B	95.12	164	
C	100.07	107	
Total	95.05	325	
Number of Dependents	Average score	Sample size	“Z” test
A	95.69	139	0.538
B	94.57	186	
Total	95.05	325	

Table 1.3 clearly indicates that the average score of the sample officers belonging to group C (102.33) is higher than the average score of group B (92.40) and group A (90.03). It is proposed to test the hypothesis that the average score of the three groups of

sample officers on the basis of their age is the same. “F” test was applied. The calculated value of “F” (12.79) exceeds the table value of “F” (4.60) for 2 & 322 degrees of freedom at 1% level of significance. Therefore the hypothesis is not accepted. There is a significant difference in the average score of the three age groups of officers.

Educational Qualification and Level of Hrd Climate

Through education, a person develops his abilities and attitudes for his social life and they make him fit for employment opportunities. Hence, it is decided to analyse the relationship between the qualification of the sample officers and their level of HRD in BHEL. Educational qualification of the sample officers is classified into three groups.

Group A: Engineering and professional courses like B.E., M.E., I.C.W.A., C.A., A.I.M.E., M.B.A., B.Tech. & M.Tech.

Group B: Diploma in Engineering.

Group C: Degree holders in Arts and Science, I.T.I. holders & Higher Secondary Course, & S. S. L. C.

The above table gives clear information regarding the educational qualification of the sample officers and their level of HRD climate. Above clearly indicates that the percentage of the sample officers in category C (58%) whose opinion about HRD climate in BHEL was excellent is higher than those of the other two groups of sample officers.

The calculated value of Chi-square (35.83) exceeds the table value (9.488) for 4 degrees of freedom at 5% level of significance. Hence the hypothesis is not accepted. Thus it is concluded that there is an association between the educational qualification and the level of HRD climate. Above table clearly indicates that the average score of the category C (101.52) is higher than the average HRD score of category B (93.27) and category A (86.39) in BHEL. It is proposed to test the hypothesis, that the average score of the three groups of officers on the basis of their educational qualification is the same. “F” test was applied. The calculated value of “F” (13.79) exceeds the table value of “F” (4.60) for 2 & 322 degrees of freedom at 1 % level of significance. Therefore the hypothesis is not accepted.

Gross Salary and Level of Hrd Climate

Salary is the compensation given by an organization to a person in return to a work done or a contribution made towards the accomplishment of organizational goals. Hence it is decided to analyse the extent of gross salary of the sample officers in relation to their level of HRD in BHEL. The sample officers were classified under three categories: A: upto Rs.10,000 (per month); B:Rs.10,001-Rs.15,000 (per month); C: Above Rs.15,000 (per month).

The above table gives clear information regarding the gross salary per month (Rs.) of the sample officers and their attitude about HRD climate. It is proposed to test the hypothesis that the officers' opinion/attitude about HRD climate under different gross salary groups does not differ significantly. Chi- square test was applied. It clearly reveals that the percentage of sample officers in category A (43%) whose opinion about HRD climate was excellent in BHEL is higher than category B (42%) and category C (33%).

The calculated value of Chi-square (7.84) does not exceed the table value (9.488) for 4 degrees of freedom at 5% level of significance. Hence, the hypothesis is accepted. Thus it is concluded that there is no association between the gross salary of officers and their level of HRD climate. Above table clearly indicates that the average score of category A (97.02) is higher than the average score of category B (94.1) and category C (90.89) in BHEL. It is proposed to test the hypothesis, that the average score of the three groups of officers on the basis of their gross salary is the same. "F" test was adopted. The calculated value of "F" (2.64) does not exceed the table value of "F" (4.60) for 2 & 322 degrees of freedom at 1% level of significance. Therefore the hypothesis is accepted. Thus there is no significant difference among the three categories of the sample officers with regard to average HRD score.

Family Income and Level of Hrd Climate

Family income plays a very important role in the growth of the family. Hence, it is decided to analyse the extent of the family income of the sample officers in relation to their level of HRD in BHEL.

The sample officers were classified under three categories: A: upto Rs.1,50,000 (per year); B:Rs.1,50,001-Rs. 2,50,000 (per year); C: Above Rs.2,50,000 (per year).It is proposed to test the hypothesis that the officers' attitude about the HRD climate under different family income groups does not differ

significantly. Chi-square test was applied. The following table gives clear information regarding the family income of the sample officers and their level of HRD climate. The Above table clearly reveals that the percentage of sample officers in category C (55%) whose opinion about HRD climate was excellent is higher than category A (38%), and category B (36%). The calculated value of Chi-square (10.32) exceeds the table value (9.488) for 4 degrees of freedom at 5% level of significance. Thus the hypothesis is not accepted. Therefore, it is proved that there is an association between the family income and the HRD level. The average HRD score of the sample officers on the basis of their family income is given in the above table. It clearly indicates that the average score of category C (100.18) is higher than the average score of category A (94.70) and category B (92.89) in BHEL. It is proposed to test the hypothesis, that the average score of the three groups of officers on the basis of their family income is the same. “F” test has been adopted. The calculated value of “F” (3.98) does not exceed the table value of “F” (4.60) for 2 & 322 degrees of freedom at 1% level of significance. Therefore the hypothesis is accepted.

Length of Service and Level of HRD Climate

Experience makes a man learn more, develop and grow in his life. Hence, it is decided to analyse the extent of the length of service of the sample officers in relation to their level of HRD. The sample officers were classified under three categories: A: upto 15 years; B: 15-25 years; C: Above 25 years. The above table gives clear information regarding the Length of Service of the sample officers and their level of HRD climate. It is proposed to test the hypothesis that the opinion/attitude about HRD climate of the three groups of the sample officers on the basis of their length of service is the same. Chi-square test was applied. It clearly reveals that the percentage of sample officers in category C (55%) whose opinion about HRD climate in BHEL was excellent is higher than category B (39%), and category A (18%). The calculated value of Chi-square (39.65) exceeds the table value of Chi-square (9.488) for 4 degrees of freedom at 5% level of significance. Thus the hypothesis is not accepted. Therefore it is concluded that there is an association between the length of service of officers and their level of HRD climate in BHEL. The average HRD score of the sample officers on the basis of length of service is given in the above table. It clearly indicates that the average score of group C (100.07) is higher than that of the other two groups. It is proposed to test the hypothesis that the average score of the three groups of the sample officers on the basis of their length of service is the same. Analysis of variance has been adopted. The calculated value of “F” (12.82) exceeds the table value (4.60) for 2 & 322 degrees of freedom at 1%

level of significance. Therefore the hypothesis is not accepted. Hence it is concluded that there is a significant difference among the three categories of sample officers with regard to HRD score.

Number of Dependents and Level of Hrd Climate

According to Oxford English Dictionary, a dependent is a person who depends on another for support. He is financially and legally bound to another person through relationship or employment. Hence, it is decided to analyse the extent of number of dependents of the sample officers in relation to their level of HRD climate. The sample officers were classified under two categories: A: Number of dependents below 3; B: Number of dependents 3 and above. It is proposed to test the hypothesis that the officers opinion about HRD climate under different dependents groups does not differ significantly. Chi-square test was applied. The above table gives clear information regarding the number of dependents of the sample officers and their level of HRD climate. It indicates that among the two groups of officers, the percentage of the sample officers belonging to group B (43%) whose opinion about HRD climate was excellent is higher than that of group A (39%). The Chi-square test reveals that there is no association between the number of dependents and the level of HRD climate in BHEL.

The average HRD score of the sample officers on the basis of their number of dependents is given in the above table. It clearly indicates that the average score of category A (95.69) is higher than the average score of category B (94.57) in BHEL. It is proposed to test the hypothesis, that the average score of the two groups of the sample officers on the basis of their number of dependents is the same. “Z” test was adopted. It clearly indicates that the calculated value of “Z” (0.538) does not exceed the critical value of “Z” (1.96) at 5 % level of significance. The hypothesis is accepted. Hence the average HRD score of two groups of officers is same.

Factor Analysis

Factor analysis is used to resolve a large set of measured variables/statements in terms of relatively new categories, known as factors. This technique allows to group variables/statements into factors and the factors so derived may be treated as new variables (latent variables) and their value is derived by summing the values of the original variables which have been grouped into the factor. Factor Analysis helps to reduce the complexity of large number of observed variables into new (latent) variables which summarise the commonality of all the variables.

HRD Climate of Officers

Data collected from 325 sample officers were subjected to principal component factor analysis with Varimax Rotation by using the criterion that factors with Eigen value greater than 1.00 were retained. Loadings exceeding 0.6 were considered for determining factors.

In factor analysis, literature for a loading of 0.33 is to be the minimum absolute value to be interpreted. This criterion is being used more or less by way of convention. In this part an attempt is made to examine the ways through which the management can improve the HRD climate in BHEL. Data obtained from 325 officers were considered for analysis.

TABLE: 4

Variable loadings of influencing HRD climate for the Varimax Rotated principal-components (N=325 Officers) Factors	Loading	Eigen Value	% of variance
Factor 1			
1.Performance appraisal are applied to employees to find out their strength and weaknesses but not to find fault with them	0.877	9.225	36.901
2.Performance Appraisal reports are assessed on adequate information and objectives	0.877		
3.Training programmes cover various fields and are useful	0.862		
4.Performance appraisals are conducted at regular intervals	0.821		
5.Employees are appraised by the capable experts but not by their immediate superiors	0.819		
Factor 2			
1.Management rewards employees for contribution for good work	0.889	4.376	17.505
2.Employees welfare are designed to save a lot of mental work	0.864		
3.Employees are respected and considered as the backbone for the growth of the company	0.831		
4.Managerial staff are focused to develop, prepare juniors for organizations' future	0.815		
5. Supervisor appreciates employees with special care	0.793		

Factor 3				
1. Employees are sponsored for training on genuine training needs	0.872	2.049	8.196	
2. The training programmes are useful for personal growth and development of employees	0.801			
3. After training employees are given opportunities to try out what they have learnt to update knowledge	0.790			
4. Training helps to develop employees to equip themselves to adopt and face challenges	0.764			
5. Training programmes enable the employees to gain continuous improvement and update knowledge	0.717			
Factor 4				
1. Supervisor understands the employees when mistakes are committed and do not punish or discourage them	0.884	1.875	7.501	
2. Seniors guide juniors to learn future	0.829			

Table 1.4 shows various factors, item loadings, eigen value, and percentage of variance explained by each factor. Factor Analysis yielded five factors accounting for 75.621% of total variance.

Factor 1 consists of 5 items and explained 36.901 of the total variance. Among the five factors, factor 1 explains the maximum variance and is the most important which influences the HRD climate in BHEL. In factor 1, Performance appraisal are applied to find out their strength and weaknesses but not to find fault with them is the important item. Factor 2 consists of five statements; of these Management reward employees for contribution for good work is the most important item. Factor 3 consists of five statements, of these Employees are sponsored for training on genuine training needs is the most important item. Factor 4 consists of five statements; of these Supervisors understand that when the employees are committed mistakes, they should not punish or discourage them is the most important item. Factor 5 consists of five statements of these Performance appraisal provides an opportunity an opportunity to improve their performance, behaviour, attitude and action is the most important item.

Suggestions

It is found that the perception of (24%) of officers felt that the HRD system presently practiced in BHEL is fair, 35% of the sample respondents felt it as Good and 41% of the respondents felt it as excellent. Hence it is suggested that the management is expected to develop HRD programmes and be given rigorously to officers to those who are in the age group of below 40 years.

Conclusion

BHEL Bangalore is the proud winner of successive productivity awards and the “Sword of Honour” from the British Safety Council. BHEL Bangalore has won goodwill and sustained support for its employee welfare schemes. BHEL- HRD department has also been awarded the presidents' trophy as the best training established in the country on four occasions. The HRD centre is well equipped and the facilities are being continuously updated to the latest technology techniques. The HRD policies of BHEL Bangalore are formulated centrally by the corporate office at New Delhi, and incorporated in the Company's personnel manual, which is updated from time to time. The group activity and participative style of management have earned BHEL, Bangalore State National Awards for good industrial relations. It is concluded from the various objectives of the study that the Human Resources Development in BHEL is excellent.

References:

1. Durga Prasad, C.H., “Human Resources Development Policies in Public Enterprises- Emerging Trends,” Personnel Today, Oct.- Dec 1988, Vol IX, No.3, p.33.
2. Suri.G.K, and Jadish Kumar, National Productivity council, New Delhi, 1989. p.357.
3. Kothari C.R., (1982) Research Methodology-Methods and Techniques 2nd edition, New Age International Pvt Ltd., New Delhi, p.329.
4. Conference Board 2003. Valuing human capital: The risks and opportunities of human capital measurement and reporting. Research Report #1316-02-RR.

5. Audretsch, D. & R. Thurik (2000), 'Diversity, Innovation and Entrepreneurship', proceedings of the conference 'Workplace Diversity: A Research Perspective on Policy and Practice', Brussels School of Public and Environmental Affairs, Indiana University, June 2000.

6. Youndt, M.A., Snell, S.A., Dean, J.W., Lepak, D.P. 1996. Human resource management, manufacturing strategy and firm performance. *Academy of Management Journal*, 39:836-866.