

# IMPACT OF HRD CLIMATE ON EMPLOYEE ENGAGEMENT IN SELECT DEFENCE PUBLIC SECTOR UNDERTAKINGS

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## ABSTRACT

*HRD climate is indispensable for developing human resources in any organization. Employee Engagement is meant for motivating the employees for giving their best effort to achieve the organizational success. In this paper, an effort is made to find out the relation between HRD Climate and Employee Engagement which are different in its concepts. However, a positive relationship is established between these two, Hence the study is educative and interesting for academicians, research scholars in the field.*

**Key words:** Human Resource Development (HRD), Employee Engagement (EE), Defence Public Sector Undertakings (DPSUs), Public Sector Undertakings(PSUs), Indian Oil Corporation (IOC), Oil and Natural Gas Company (ONGC), Bharat Dynamics Limited(BDL), Mishra Dhatu Nigam(Midhani), Bharat Dynamics Limited(BEL).

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## 1. INTRODUCTION

Organizations are indispensable for economic and social transformation and for stable social functioning. Public Sector Organizations seek to achieve commanding heights of national economy. Therefore, organizations need to have different resources. These resources include people in the organization called human resources. They receive greater importance over and above any other resources in any organization. Employees form most important components of any organizational set up. Managers have to prepare and develop employees (people) to achieve the goals of the organization. Hence, there is a necessity to develop the employee to meet the organizations goal. This is known as Human Resource Development (HRD).

Organizations today increasingly recognize the potential of their employees as a source of competitive advantage (pfeffer, 1998)<sup>1</sup>. With intensified global competition, highly targeted workforces, and pressure for continuing strides in workers' productivity, the employee has become the keystone in achieving business results. It is repeatedly proven and reinforced that employees are undoubtedly the most valuable asset and the correct employee policies make the bottom-line difference. Creating this advantage through employees requires a careful attention to the practices that can best leverage the Human Capital. However, organizations are falling short to unleash the talents and motivations of their employees to achieve peak performance (Katzenbach, 2000)<sup>2</sup>. Recent efforts to improve the organizational performance have begun to emphasize positive organizational behavior concepts and positive emotions. The quest has turned the attention of some researchers to a relatively new model called Employee Engagement (Steelman, Maszal, Newbolt & Churchwell, 2002)<sup>3</sup>; (Cameron et al, 2003)<sup>4</sup>.

## **2. STUDIES ON RELATIONSHIP BETWEEN HRD CLIMATE AND EMPLOYEE ENGAGEMENT**

Analysis of Hewitt Associates<sup>5</sup> (29 Jul 2010) stated that there was steady decline in Global Engagement levels. According to them this is a largest drop in the engagement levels that was observed during past 15 years. This indicates that there is a necessity to have some concrete mechanism to improve engagement levels of employees in Organizations. Organizations are in dire need to improve engagement levels of organization. Thus, the importance of Human Resource Development (HRD) climate cannot be overlooked. Therefore, there is a need to examine the relationship between dimensions of HRD climate and Employee Engagement in Defence Public Sector Undertakings based at Hyderabad in Telangana State.

Various HRD models have been proposed to gain competitiveness by the organization through human capital (DeGeus (1997)<sup>6</sup>; McCracken and Wallace (1997)<sup>8</sup>. The models specify investment in HRD by organizations and individuals is crucial to build and retain that resource in the future. Therefore, organizations look for development of employee competencies through sophisticated human resource development strategies (Losey (1999)<sup>9</sup>; (Spangenberg, Schroder, & Duvenge, 1999)<sup>10</sup>.

Employee engagement has come out as one of the tool to measure their investment in human capital and also to measure employee commitment to the organization and as a way of creating a more effective workplace (Echols, 2005)<sup>11</sup>.

In the present economic climate, the employee's psychological connection to their work is certainly a key to effectively compete. The organizations are in dire need to have employees, who are engaged with their work (Bakker & Leiter, 2010)<sup>12</sup>. There is substantial amount of research evidence to demonstrate the importance of engagement for bottom line outcomes such as job performance (Bakker & Bal, 2010)<sup>13</sup>; (Halbesleben & Wheeler, 2008)<sup>14</sup>, client satisfaction (Salanova, Agut, & Peiro, 2005)<sup>15</sup>, and financial returns (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009b)<sup>16</sup>.

With the increasing in momentum for study of employee engagement, researchers are increased their focus on what factors have exactly causing employee engagement and how it can be improved. However, it is disappointing to note that little research has been undertaken in this direction; identifying the antecedents of employee engagement needs to attract considerably more attention.

There was no theoretical base is existing for the causal relationship between HRD climate and Employee Engagement. Independently both are relating to improved performance of the individuals and to have a psychological relationship exists with the Organization. Therefore, both are leading to improved performance to attain the objectives of the organization in turn leads to organizational effectiveness and increases in organizational prosperity. Therefore, researchers are concentrating to study the fundamental relationship, whether existing in these two distinct subjects. The studies on finding the relationship between these are scarce.

### 3. NEED FOR THE STUDY

The select DPSUs are the prominent organizations in manufacturing of defence equipments and allied products to cater the defence and security needs of the country. The performance of these DPSUs are quite commendable, it has become a routine for these industries to win national awards from Government of India in their respective field of manufacturing.

It is to mention that PSUs are the foremost units in spending huge amounts of money on human resources development. It is a fact that the attainment of objectives of the organizations significantly depends upon the development of its human resources. In other words, human resources are the major contributory factor in enhancing the efficiency and productivity result into profitability to the organizations. Further, it is an undisputed fact that no firm or company or institution in any part of the globe can attain any mission, objective, goal or target without human resources development. Above, all it helps in developing good human relations. As stated in preceding sections HRD is a process by which employees are continuously helped in a planned way to acquire all-round capabilities where team work and collaboration contribute to the organizational health. Thus HRD helps in improving good human relations and positive organizational climate; thereby it helps in attaining the organizational goals economically and effectively.

Further, positive organizational climate enhances engagement levels of the employees' leads to retention of the employees. Engaged employee committed to work for achievement of organizational goals. Therefore, organizations need to have engaged work force for improving productivity and better organizational performance.

Hewitt Associates<sup>2</sup> reported that there was steady decline in Global Engagement levels. According to them this is a largest drop in the engagement levels that has been observed in the last 15 years. This indicates that there is a necessity to have some concrete mechanism to improve engagement levels of employees in Organizations. Organizations are in dire need to improve engagement levels of its employees. Thus, the importance of Human Resource Development (HRD) climate can not be overlooked.

Due to growing popularity of Employee Engagement, a considerable body of literature has come up over the years, examining various aspects of engagement at the macro and micro levels. However, the literature invented by consulting firms remained largely descriptive and lacked academic perspective. Researches have started academically analyzing the concept seriously, since 1990 only. It is surprising to note that most of studies have been carried out in the developed countries. Such studies conspicuously lacked the Indian Context. A few studies have been undertaken to assess the levels of Employee Engagement in India but not in Defence Public Sector undertakings.

Further, many international research and consulting firms such as Hewitt Associates, Gallup has undertaken research on engagement of Indian firms. It is an observable fact that the big corporations of private sector and few public sector corporations such as Indian Oil Corporation (IOC), Oil and Natural Gas Company (ONGC) are conducting this type of study

with the help of international consulting and research organizations to take corrective measures in the human-managerial and organizational fronts . There is no need to say that , research on engagement in other public sectors such as heavy engineering and heavy industry sector's organizations found scanty and the researcher even unable to cite any evidence on these sector at the start of the study(Anita Singh et al 2013)<sup>17</sup>. The need for public sector organizations to improve the way in which they manage change and develop leadership capability has highlighted by Ipsos Mori (2006)<sup>18</sup> in his study. Hence, it is necessitated to study employee engagement in these DPSUs also.

By and large Indian Organizations view HRD climate is combination of three dimension namely, General Climate, HRD Mechanisms and OCTAPACE culture. These organizations have increasingly realized the need for changing their culture & climate and attitude of its employees for which they relying on HRD climate.

The study intends to correlate HRD climate Dimensions scores with Employee Engagement Scores prevailing in the DPSUs. This will be done to know whether they are correlated or not and to know further the nature and degree of relationship between HRD climate dimensions and Employee Engagement levels.

Since the problem of study has been identified by the researcher on the basis of existing stock of researches in the field of HRD and Employee Engagement in general and Defence PSUs in particular, it is expected that the study will fill up the gaps to some extent in addressing the importance of HRD climate & Employee Engagement in DPSUs.

This leads to effective Employee Engagement which will be in turn leads to attraction and retention, thereby improved organization effectiveness and performance.

Thus, such relationship provide a clear picture of the nature, type and degree of relationship between the two concepts HRD climate and Employee Engagement as these relationship will provide input for the development of HRD climate and Engagement models in Defence PSUs.

Moreover, the conclusions of the study are expected to go a long way in developing the favorable HRD climate for development of manpower and Employee Engagement in a more meaning full manner as the perceptions of executives and non executives represent their actual feelings, experience and reactions regarding the HRD climate and EE. From this point of view , the conclusions of the study will add to the existing knowledge on the HRD Climate and Employee Engagement and will become a further sound base for future researches in this field.

#### **4. A CRITICAL ANALYSIS OF REVIEW OF LITERATURE**

- It was observed that many international research and consulting firms such as Hewitt Associates, Gallup has undertaken research on Employee Engagement of only few Indian public sector corporations such as Indian Oil Corporation (IOC), Oil and Natural Gas Commission (ONGC) for taking corrective actions in the human-managerial and organizational fronts.
- Further, research on engagement in other public sector such as heavy engineering and heavy industry sector's organizations found scanty and the researchers even unable to cite any evidence on these sectors at the start of the study.
- Ipsos Mori (2006)<sup>18</sup> has highlighted the need of PSUs to improve the way in which they manage change and develop leadership capability for organizational effectiveness.

- Steady decline in Global Engagement levels observed in the last 15 years, necessitated some concrete mechanism to improve engagement levels of employees in Organizations, therefore there is a dire need to improve engagement levels of its employees. Hence, importance of Human Resource Development (HRD) climate can not be overlooked to improve the Employee Engagement levels.
- Hence, there is a research gap on Relationship between HRD Climate and Employee Engagement studies also in PSUs particularly in select DPSUs.

## 5. RESEARCH GAPS

Efforts were made to critically review the literature on relationship between HRD climate and Employee Engagement. The following efforts are made to find the research gaps that existed in HRD climate and Employee Engagement in Indian industries.

- There is no significant study on proper linking of HRD climate and Employee Engagement.
- Further, research studies on relationship between HRD Climate and Employee Engagement in public sector domain found very little and the researchers even unable to quote any evidence on these sector particularly in Defence Manufacturing Sector. Hence there is a gap of this study. The study will enable the researchers and Industry personnel to improve their strategies.

### 5.1. Research Studies on relationship between HRD climate and Employee Engagement

Lau & May (1998)<sup>19</sup> suggested that companies with a higher quality of work environment (e.g., opportunity for career growth, a culture of support and openness) tend to have higher profits and business success compared to companies with a poor quality of work environment. Studies have also demonstrated the importance of a climate of trust for positive workplace behaviours and attitudes (Dirks & Ferrin, 2002)<sup>20</sup>.

Robinson, Perryman & Hayday (2004)<sup>21</sup> reported that the employees who are having personal development plans and annual formal performance appraisals will have greater engagement levels than those who do not have development plans.

Demerouti, Bakker, Nachreiner, & Schaufeli, 2001<sup>22</sup>; Schaufeli & Bakker, 2004<sup>23</sup>, Salanova et al., 2005<sup>24</sup>;; in their study of Job-Demand-Resource (JD-R) model the work environment can be divided into job demands and job resources which relate differently to well being and attitudinal outcomes (Bakker et al., 2003<sup>149</sup>, 2005<sup>150</sup>; Demerouti et al., 2001<sup>22</sup>; Hakanen<sup>23</sup> et al., 2006; Llorens<sup>24</sup> et al., 2006; Salanova<sup>25</sup> et al., 2005; Schaufeli & Bakker, 2004; Bakker & Demerouti 2007).

From the large number of studies, it was shown that job resources like autonomy, social support, supervisory coaching, performance feedback, participation in decision making and opportunities for learning, training, professional development, were related positively with employee engagement (Hakanen, Bakker, & Schaufeli, 2006<sup>26</sup>; Saks<sup>27</sup>, 2006; Xanthopoulou<sup>28</sup> et al., 2007, Bakker<sup>29</sup> et al., 2003; Demerouti<sup>30</sup> et al., 2001).

Hakanen, Bakker, Schaufeli<sup>151</sup>, 2006 et.al, in a study on Finnish teachers, job resources such as job control, supervisory support and good organizational climate were reported to be positively associated with work engagement.

Bakker, Hakanen, Demerouti & Xanthopoulou (2007)<sup>155</sup> in a study among Finnish school teachers reported that supervisory support, positive appreciation, collaborative organizational climate, and innovative problem solving correlated positively with engagement.

## 6. OBJECTIVES OF THE STUDY

The present study has developed a theoretical model based on the identification of potential research gaps from the literature survey. To bridge the research gaps and to test the model, the study has set the following objectives:

- To examine the HRD climate & EE in select DPSUs based at Hyderabad and Secunderabad.
- To find out is there any relationship between HRD Climate and its dimensions to Employee Engagement.
- To analyse the impact of HRD Climate & Employee Engagement levels on Productivity and Performance of the Organizations.
- To offer suggestions for effective HRD climate and employee engagement in the organizations under study

### 6.1. The Research Design

This study intends to analyze the prevailing HRD climate and Employee Engagement in three select public sector organizations perceived by their executives and non executives. Further, to analyze the relationship between independent and dependent variables.

In order to conduct research, an attempt has been made to present the design of the study which includes study area, profile of the organizations and its practices of HRD, sampling design & framed, method and tools of data collection, statistical tests used, and chapterization of the thesis.

### 6.2. Sampling Design

Employees of three levels of functioning namely Senior Management, Junior Management and Employee cadre were chosen to obtain the perceptions. The perceptions of the respondents were obtained from the following specified categories of employees in the three select DPSUs.

### 6.3. Sampling Frame

The sampling design has resulted in a 3 x 3 factorial design with three types of organizations and three levels of employees. The table shows the distribution of respondents in the present study.

**Table 1**

SNO	Level of employee	BDL	Midhani	BEL	Total
1	Jr. Management	60	65	46	171
2	Sr. Management	27	14	8	49
3	Employee Cadre	93	42	46	181
Total		180	121	100	401

Source: Compiled from the collected data of the study

### 6.4. Sampling Universe

The sample universe in in BDL is 1794 consisting of Executive and Employee cadre. Out of which 10.03% is sample were responded for the survey. In Midhani, there are 904 sample universe consisting of executives, supervisory and employee cadre, the sample taken is 13.4%. Whereas in BEL, the sample universe consist of 535 includes executives, supervisors and employees. The sample choosen in BEL is 18.7%. For convenience of the study, supervisors are clubbed in the Junior Management cadre, since they are in supervisory in

nature like Junior Managers in BDL. The over all sample universe for the study is 3233 and respondents for the study would be 401, constituting 12.40% of the sample. The details are as under:

**Table 2**

Sl. No.	Organisation	Actual Strength				Sample Strength			
		Exe.	Supervisor	Emp.	Total	Exe.	Emp.	Total	Sample %
1	BDL	587	0	1207	1794	87	93	180	10.03
2	Midhani	257	124	523	904	79	42	121	13.4
3	BEL	336	21	178	535	54	46	100	18.7
Total		1180	145	1908	3233	220	181	401	12.40

Source: Compiled from the collected data of the study

## 7. INSTRUMENTS/QUESTIONNAIRE/INTERVIEW METHOD

The Instrument/Questionnaire developed by Rao and Abraham (1990)<sup>15</sup> has been used for survey on HRD climate to understand the extent to which a development climate exists in the select DPSUs. With regard to Employee Engagement, Gallup<sup>16</sup> Q<sup>12</sup> instrument has been used for measuring the employee Engagement. The purpose of using Gallup Q<sup>12</sup> is that they have identified a link between levels of engagement and organizational success or Organizational performance. Employee Engagement factors differs from organization to organization according to their needs and objectives. Therefore, some more questions are added to the Gallup Q<sup>12</sup> questionnaire to find out Employee Engagement in select DPSUs.

### 7.1. Data Collection

Data collection is the heart of research methodology. Hence, systematic plan is worked out to collect the Primary and Secondary required for investigating into the hypothesis developed. The primary data has been collected from the respondents with the help of Instruments used to collect required information about research study along with the formal and informal interviews/discussions with the Senior Management cadre personnel. The secondary data has been collected from the doctoral thesis, research papers, articles, Journals, Text books, websites, personnel policies of the select DPSUs etc., A total of 500 questionnaires were distributed and , about 401 questionnaires were returned by the respondents in the representative three industries with duly filled in answers and therefore, the total sample under the study comprised 401 from different hierarchical levels of the three Defence PSUs

### 7.2. Data Analysis Approach

The data collected from the respondents has been entered into the Microsoft Excel 2007 spread sheet,. The data was processed and analyzed through Statistical Process for Social Sciences (SPSS) software. In order to examine the pattern of responses to each of the independent and dependent variable under the study, the data was divided into frequency distribution of certain variables and presented in the respective chapters.

Descriptive Statistics were used to describe the basic features of the data. The statistics typically included the frequency tables, mean, weighted averages, standard deviation, skewness and kurtosis were computed to present the degree of HRD Climate and Employee Engagement present in the DPSUs.. The inferential statistical tools like ANOVA, Correlation, Multiple Regression, were used to further breakdown the sample and demographic

information in order to better assess the relationship among the variables and to find out the significance of mean difference on study variables.

Correlation and Regression analysis was used in order to examine the relationship between study variables like HRD Climate dimensions and Employee Engagement for testing of hypothesis. Correlation coefficient was computed establish relationship among study variables HRD Climate and Employee Engagement.

## 8. RELIABILITY ASSESSMENT & SCALE DETAILS

The questionnaire's reliability was measured using Chronbach's measuring scale. A high value of Chronbach coefficient alpha indicates greater reliability of the measure based on its internal consistency whereas low value conveys that the items failed to capture the construct comprehensively. An alpha of 0.70 or higher is considered de-facto standard in the social sciences (Nunnally, 1994)<sup>20</sup>. It is also sufficient for an academic research study. The internal consistency in respect of the questionnaire measured is ranging from 0.814 to 0.928 for all the dimensions under study. Hence, the questionnaire is considered to be most reliable. Good reliability is often a function of careful wording, format, content and administration.

**Table 3** Split-Half Reliability Estimates of HRD Climate & Employee Engagement

SNO	Dimension	No. of items	Alpha Reliability
1	General HRD Climate	14	0.815
2	HRD Mechanisms	15	0.852
3	OCTAPACE Culture	09	0.814
4	HRD Climate Scale	38	0.928
5	Employee Engagement Scale	17	0.867

SOURCE: Primary Data Collected From the Respondents

**Table 4** Organisation Wise Correlations of HRD Dimensions and Over All Employee Engagement

		BDL	MIDHANI	BEL
GC	Pearson Correlation	0.280**	0.305**	0.832**
	Sig. (2-tailed)	.000	.000	.000
	N	180	121	100
HRDM	Pearson Correlation	0.284**	0.349**	0.774**
	Sig. (2-tailed)	.000	.000	.000
	N	180	121	100
OC	Pearson Correlation	0.189	0.334*	0.792**
	Sig. (2-tailed)	.000	.000	.000
	N	180	121	100
HRDC	Pearson Correlation	0.272	0.402**	0.824**
	Sig. (2-tailed)	.000	.000	.000
	N	180	121	100
OEE	Pearson Correlation	1	1	1
	Sig. (2-tailed)	.000	.000	.000
	N	180	121	100

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

Type of Defence industries (Company/No. of respondents) BDL/180 Midhani /121, BEL /100; Total (3/401)

Source: Compiled from the collected data of the study



The results in this regard show that HRD dimensions and HRDC have a positive relationship with Employee Engagement. The relationship exist between the dependent and independent variables, if r value (correlation value) lies between -1 and 1 ie (-1 > r<1). The relationship is also strong and statistically significant if r value is >0.5 and less than 1 and moderate level positive correlation exist if r<0.5 and >0.3. Weak positive correlations exists if r <0.3 and >0.1.

From the results of table 7.1, it is noted that there are positive correlations exists between HRD dimensions, overall HRD Climate and Overall Employee Engagement. The correlations results differ from organization to Organization. From the above results it is indicated that in BDL, HRD dimensions and HRD climate have weak positive association on Employee engagement, In BDL, HRD Mechanisms has higher positive correlation with Employee Engagement (r=0.284, P<0.001) followed by General Climate (r=0.280, P<0.001) and OCTAPAC culture with weak positive relation (r=0.189, P<0.00). The Overall HRD climate have weak positive relationship with Employee engagement (r=0.272, P<0.001).

The results of Midhani, indicate that these dimensions are positively correlated with Employee Engagement on moderate level only. In Midhani also HRD Mechanisms are highly correlated with Employee Engagement than other two dimensions. (r=0.349, P<0.001), followed by OCTAPAC culture (r=0.334, P<0.001) and General Climate with moderate positive relationship with EE (r=0.305, P<0.001). The overall HRD Climate will have a moderate level positive relationship with EE (r=0.402, P<0.001).

In BEL, it is observed that that there is strong positive correlation exists between HRD dimensions General Climate, HRD Mechanisms, OCTAPACE CULTURE and overall HRD climate with Employee Engagement levels. The General Climate dimension has strong positive relationship with EE (r=0.832, P<0.001) followed by OCTAPAC Culture also has strong relationship with EE (r=0.792, P<0.001) and HRD Mechanisms with EE (r=0.774, P<0.001). It is further inferred that the overall HRD climate in BEL is having a strong positive relationship with Employee Engagement (r=0.824, P<0.001).

From the above results it is observed that General Climate, HRD Mechanisms and OCTAPAC culture are very much conducive for the development of employees in BEL, which in turn help to improve the Employee Engagement levels of employees for performing and giving better results for the growth of the Organization. In Midhani also there is moderate level of positive correlation exists between HRD Climate and Employee Engagement and hence it is having a favourable level of HRD climate for its growth of employees. In BDL, there exists an average level of HRD climate for the growth of its employees and having a weak positive association with Employee Engagement levels. An attention of management is required to improve the HRD climate for sustenance and growth of employees to have better engagement levels.

**Table 5** Correllations Results Of Overall HRD Climate & Overall Employee Engagement In Three Defence Psus

		GC	HRDM	OC	HRDC	OEE
GC	Pearson Correlation	1	.794**	.700**	.909**	.465**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	401	401	401	401	401
HRDM	Pearson Correlation	.794**	1	.720**	.920**	.450**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	401	401	401	401	401
OC	Pearson Correlation	.700**	.720**	1	.896**	.400**

	Sig. (2-tailed)	.000	.000		.000	.000
	N	401	401	401	401	401
HRDC	Pearson Correlation	.909**	.920**	.896**	1	.481**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	401	401	401	401	401
OEE	Pearson Correlation	.465**	.450**	.400**	.481**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	401	401	401	401	401

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

Type of Defence industries (Company/No. of respondents) BDL/180Midhani /121, BEL /100; Total (3/401)

Source: Compiled from the collected data of the study

Results of table 7.2 indicating combined correlation results of three industries in HRD dimensions and Overall Employee Engagement levels. From the above results, it is exhibited that overall HRD C is having a moderate level correlation with OEE.

The results are given below from higher value dimension to lower value dimension:

HRDC and OEE = (r=0.481, P<0.001),

GC and OEE = (r=0.465, P<0.001),

HRDM and OEE = (r=0.401, P<0.001).

### 9. RESULTS OF REGRESSION ANALYSIS:

Dependent variable : Employee Engagement: Independent variables: General Climate (GC), HRD Mechanisms (HRDM) & OCTAPAC culture (OC)

Table 6 (Model Summary)

Model	R	R Square	Adjusted R Square	Std. error of the estimate	Change statistics				
					R Square Change	F change	df 1	df2	Sig. F change
1	.465 <sup>a</sup>	.216	.214	.43285	.216	109.99	1	399	.000
2	.483 <sup>b</sup>	.234	.230	.42854	.017	9.068	1	398	.003
3	.487 <sup>c</sup>	.237	.231	.42808	.004	1.852	1	397	.174

Predictors: ( Constant), GC

Predictors: (Constant), GC, HRDM

Predictors: (Constant), GC, HRDM, OC

Table 7 (ANOVA <sup>d</sup>)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.609	1	20.609	109.998	.000 <sup>a</sup>
	Residual	74.755	399	.187		
	Total	95.364	400			
2	Regression	22.274	2	11.137	60.645	.000 <sup>b</sup>
	Residual	73.090	398	.184		
	Total	95.364	400			
3	Regression	22.614	3	7.538	41.134	.000 <sup>c</sup>

	Residual	72.751	397	.183		
	Total	95.364	400			
a. Predictors: (Constant), GC						
b. Predictors: (Constant), GC, HRDM						
c. Predictors: (Constant), GC, HRDM, OC						
d. Dependent Variable: OEE						

Type of Defence industries (Company/No. of respondents) BDL/180

Midhani /121, BEL /100; Total (3/401)

Source: Compiled from the collected data of the study

**Table 8** (Coefficients <sup>a</sup>)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.226	.150		14.846	.000
	GC	.448	.043	.465	10.488	.000
2	(Constant)	2.114	.153		13.816	.000
	GC	.282	.070	.292	4.041	.000
	HRDM	.199	.066	.218	3.011	.003
3	(Constant)	2.077	.155		13.365	.000
	GC	.251	.073	.261	3.438	.001
	HRDM	.163	.071	.178	2.280	.023
	OC	.076	.056	.090	1.361	.174

a. Dependent Variable: OEE

**Table 9** (Excluded Variables <sup>c</sup>)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	HRDM	.218 <sup>a</sup>	3.011	.003	.149	.369
	OC	.147 <sup>a</sup>	2.383	.018	.119	.510
2	OC	.090 <sup>b</sup>	1.361	.174	.068	.437

a. Predictors in the Model: (Constant), GC

b. Predictors in the Model: (Constant), GC, HRDM

c. Dependent Variable: OEE

**Table 10** (Model Summary)

Model	R	R Square	Adjusted R Square	Std. error of the estimate	Change statistics				
					R Square Change	F change	df1	df2	Sig. F change
1	.465 <sup>a</sup>	.216	.214	.43285	.216	109.998	1	399	.000
2	.483 <sup>b</sup>	.234	.230	.42854	.017	9.068	1	398	.003

a. Predictors: ( Constant), GC

b. Predictors: (Constant), GC, HRDM

Type of Defence industries (Company/No. of respondents) BDL/180

Midhani /121, BEL /100; Total (3/401)

Source: Compiled from the collected data of the study

**Table 11** (ANOVA <sup>c</sup>)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.609	1	20.609	109.998	.000 <sup>a</sup>
	Residual	74.755	399	.187		
	Total	95.364	400			
2	Regression	22.274	2	11.137	60.645	.000 <sup>b</sup>
	Residual	73.090	398	.184		
	Total	95.364	400			

- a. Predictors: (Constant), GC
- b. Predictors: (Constant), GC, HRDM
- c. Dependent Variable: OEE

**Table 12** (Coefficients <sup>a</sup>)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.226	.150		14.846	.000
	GC	.448	.043	.465	10.488	.000
2	(Constant)	2.114	.153		13.816	.000
	GC	.282	.070	.292	4.041	.000
	HRDM	.199	.066	.218	3.011	.003

- a. Dependent Variable: OEE

**Table 13** (Excluded Variables <sup>c</sup>)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	HRDM	.218 <sup>a</sup>	3.011	.003	.149	.369
	OC	.147 <sup>a</sup>	2.383	.018	.119	.510
2	OC	.090 <sup>b</sup>	1.361	.174	.068	.437

a. Predictors in the Model: (Constant), GC  
 b. Predictors in the Model: (Constant), GC, HRDM  
 c. Dependent Variable: OEE

Type of Defence industries (Company/No. of respondents) BDL/180  
 Midhani/121, BEL /100; Total (3/401)  
 Source: Compiled from the collected data of the study

It is observed from the Correlation analysis, that HRD climate is positively related with Employee Engagement. Now, it is required to observe the variance in Employee Engagement with HRD dimensions. Therefore, a stepwise regression analysis was carried out. In the step wise model, the order of entry of predictor variables is based on the statistical criteria. Since, the researcher is unsure about the relative predictive power of the independent variables (GC, HRDM and OC), stepwise regression is most suitable technique. The equation starts with the independent variables entered in the model. Then each variable is evaluated once at a time in terms of its contribution to the regression equation. The result of the Table 7.3 indicates that 23.1% variation(Adjusted R square) in Employee Engagement is explained by all the three dimensions of HRD climate viz., General Climate, HRD Mechanisms and OCTAPAC culture with a F value of 41.13, P<0.05. Since, the standardized beta coefficient in case of

OCTAPAC culture was found to be insignificant (Table 5.32)  $p < 0.05$  value (beta values GC=0.261, HRDM= 0.178, OC= 0.090). Therefore, as a part of procedure, OCTAPAC culture value is removed from the regression equation in the second step to obtain a better model.

In the second step by removing the independent variable OCTAPAC culture from the regression equation, the predictive value of adjusted R square value increased from 0.178 to 0.218 (Table 7.9 and Table 7.10 ) Beta values for GC=0.292 and HRDM =0.218) and hence GC and HRDM together explain 23.4% variation in employee engagement with F value of 60.65 at  $p < 0.001$ . Therefore, it is concluded that HRD climate is a significant predictor of employee engagement and General Climate and implementation of HRD Mechanisms are the most significant dimensions of HRD climate influencing the employee engagement levels.

**Table: 14** Impact of HRD Climate & Employee Engagement levels on Productivity and Performance of the Organizations.

	<b>BDL</b>	<b>Midhani</b>	<b>BEL</b>
Over all HRD climate	3.37 (59.25%)	3.62 (65.50%)	3.54 (63.50%)
Overall Emp Engagement	3.74 (68.50%)	3.85 (71.25%)	3.77 (69.25%)

Source: Primary Data

**Table: 15**

Year	BDL (All Units)			Midhani			BEL (All Units)		
	Sales (Rs in Cr)	PBT/emp (Rs. In lakhs)	Productivity per emp. (Rs. In lakhs)	Sales (Rs in Cr)	PBT/emp (Rs. In lakhs)	Productivity per emp (Rs. In lakhs)	Sales (Rs in Cr)	PBT/emp (Rs. In lakhs)	Productivity per emp (Rs. In lakhs)
2009-10	627.23	1.75	21.82	371.21	5.68	31.34	5219.77 (280)	9.05	45.46
2010-11	939.16	2.73	31.45	417.87	6.71	43.31	5529.69 (299)	10.39	49.38
2011-12	959.12	11.08	31.60	509.01	9.36	47.15	5703.63(314)	9.96	53.69
2012-13	1074.71	12.70	35.62	558.59	12.07	55.06	6011.90(258)	10.82	61.04
2013-14	1779.89	15.57	55.25	562.71	13.49	63.30	6174.23 (545)	11.80	61.56

Source: Secondary Data : Annual Reports of BDL, Midhani And BEL

Results of Table 7.11, indicates that the increase in Over all HRD climate increases the overall Employee Engagement levels in BDL, Midhani and BEL. Similarly the results of Table 5.12 during last 5 years, the improved Employee Engagement levels increases the productivity in select DPSUs (BDL from Rs. 21.52 to Rs. 55.25 laks/per employee per annum, in Midhni Rs. 31.34 to Rs. 55.25 lakhs/per employee per annum and in BEL Rs. 45.46 to Rs. 61.56 lakhs per employee/per annum). Similarly, the profits per employee in BDL increases Rs. 1.75 to Rs. 15.75 lakh/per employee/annum, in Midhani, Rs. 5.68 to Rs.13.49 lakhs/per employee/annum and in BEL it is Rs.9.05 to 11.80 lakh/per employee/annum.

From the results it is observed that the higher the Engagement levels, higher the level of Productivity per employee. In Midhani, Overall HRD Climate (Mean 3.62) and Overall Employee Engagement (3.85) is higher in order accordingly, the productivity per employee is

also in higher in Midhani ranging from Rs. 31.34 to 63.30 lakh per year in five years with increasing trend followed by BEL, overall HRD climate (mean 3.54) and overall Employee Engagement levels (mean 3.77), accordingly, productivity per employee is increased to Rs. 45.46 to 61.56 lakh per year in a span of 5 years. In BDL, comparatively overall HRD climate (Mean value 3.37) and Employee Engagement (3.74) are lesser than the other two DPSUs, with productivity per employee is ranging from Rs. 21.82 to Rs. 55.25 lakh per year in 5 years span.

Thus, it is inferred that if the HRD climate is favourable, Employee Engagement is also favourable and hence there is a positive relations. Further, HRD climate and Employee Engagement levels have positive impact on profitability in turn leads to Organizational performance by way of its increased profits.

## 10. CONCLUSIONS

This study represents a pioneer effort to study the Role/ Effect of human resource development climate on the engagement level of employees. Thus this study makes a significant contribution to the scarce literature available on employee engagement and HRD climate in Indian context particularly in Defence Manufacturing Sectors.

The study also intended to probe into the relationship between Employee Engagement and productivity and Organizational performance. The results of study indicates that the favourable HRD climate will enhances Employee Engagement levels. The same is obtained from the results of 5 years performance levels of productivity and profitability of BDL, Midhani and BEL. Hence, results shown that the improved Employee Engagement levels increases the productivity in select DPSUs. Therefore, higher the Engagement levels, higher is the Productivity per employee.

Thus, favourable HRD climate will enhances Employee Engagement levels and hence there is a positive relationship. It is understood from theoretical evidence of HRD climate and Employee Engagement levels have positive impact on profitability in turn leads to Organizational performance by way of its increased profits. Thus, it has also been proved in the select DPSUs.

A major conclusion of this study is that a reliable and effective instrument was developed by researcher for the definite purpose for measuring the engagement levels of employees working in Indian Defence PSUs based on Gallup Survey with additions of some statements to suit to the organization needs for the study apart from HRD Climate developed by Rao. Therefore, the EE questionnaire can be used in future studies with slight modifications as per their requirements. Specific drivers of engagement studied and identified in this research have been statistically confirmed. They have been proven reliable and valid. Understanding these specific factors influencing engagement levels of the workforce is important to any DPSUs looking to positively influence the productivity of its workforce.

## 11. RECOMMENDATIONS

The following are the recommendations which requires further improvement to have favourable HRD climate and higher engagement levels for development of its employees and improved productivity and performance apart from the other HRD practices that DPSUs should ask employees regularly and specifically in all their reviews, what factors engages then and what factors leads them to be disengaged to assess levels of employee engagement rates.

## 12. LIMITATIONS OF THE STUDY

In spite of advance planning and careful implementation of the study design, the present investigation has certain limitations which are summarized below:

- The inadequacies and short comings attached to questionnaire method of primary data collection.
- It is very difficult to obtain the views of all officers and employees in DPSUs. Hence, sample of respondents were selected from different categories of employees.
- The employees are very busy in attending to their regular work. Hence, the researcher had to persuade them to give their perceptions to the questionnaire on HRD climate and Employee Engagement.

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