

An Empirical Study on Employees' Quality of Work Life: A Case Study of Bokaro Steel Plant an Integrated Unit of Steel Authority of India Limited (SAIL)

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Abstract

Quality of work life is a very important issue in all type of industries especially in integrated iron and steel plants. Iron and steel plant are basic industries providing back bone for industrialization in any country. The physical working environments are much more hazardous in these industries than any other industries. Bokaro Steel Plant (BSL) is the fourth integrated and second largest steel producing unit of Steel Authority of India Limited (SAIL). The present study has been focused on evaluation of factors related to quality of work life in BSL in relation to employees' grade demographic. Based on employees' perception regarding 31 (thirty one) variable taken under eight factors these are Working environment, Employees welfare, Relational factor, Promotional factor, Employees commitment & developmental, Employees involvement and influence, Job satisfaction and Financial factor. It has been observed that in most of the variables the average perception score of non executives' was lesser than that of the executives'. In case of non-executives the employees of junior operative technician showed dissatisfaction in most of the factors.

Keywords:

QWL, Executives, Non-Executives, Promotional factors, welfare factors.

Introduction

In the context of present competitive business era, the quality of human capital of an organization determines the degree of success that can be achieved. The efficiency and effectiveness of an organization depends directly on how capable its personnel are and how effectively they are utilized for achieving organizational objectives. Therefore, maximizing the competencies of employees has become one of the prime objectives of all organizations. But the productivity of employees was not affected by their competency and type of technology alone but by the environment that prevailed at the workplace. With rapid technological advances and their applications in business have resulted into creation of a situation where employees have started developing the feeling of powerlessness, social isolation

and self-estrangement. Such feelings have resulted into lesser increase in productivity as compared to the productivity estimated with their competency and technology provided. This led to the emergence of concept of quality of work life (QWL) during 1970s which aims at integrating the socio-psychological needs of people in the organization, the unique requirements of a particular technology, the structure and processes of the organization, and socio-cultural surroundings (Prasad, 2005).

The contemporary concept of quality of work life is to create a climate at the work place so that human-technological-organizational interface leads to a better quality of work life. According to Suttle (1977); "Quality of work life is the degree to which members of a work organization are able to satisfy important personal needs through their experiences in the organization."

Literature Review

Quality of work life is a concept of behavioural scientist, and the term was first introduced by Davis in 1972 (Mathur, 1989; Hian and Einstein, 1990). According Robins (1990) QWL is "a process by which an organization responds to employee needs by developing mechanisms to allow them to share fully in making the decisions that design their lives at work". The key elements of QWL in the literature include job security, job satisfaction, better reward system, employee benefits, employee involvement and organizational performance (Havlovic, 1991; Scobel, 1975).

Walton (1983) has suggested eight programmes to humanise the workplace: adequate and fair compensation, safe and healthy work environment, development of human capacities, growth and security, social integration in work environment, constitutionalism (rule of law), work and total life space, and social relevance of work life. As the concept of QWL is multi-dimensional, it may not, of course, be universal. However, key concepts tend to include job security, reward systems, pay and opportunity for growth among other factors (Hannif et al., 2008).

QWL practice involves acquiring, training, developing, motivating and appraising for the best performance of the employees as per organizational objectives. Indeed, core elements of QWL are of working conditions, employee job satisfaction, employees' behavioural aspects, and employees' financial and non-financial benefits, growth and development, and supervision (Lau & May, 1998; Hackman & Oldham, 1975; Taylor & Bowers, 1972).

For the purpose of study, QWL is defined as the favourable condition and environment of employees' benefit, employees' welfare and management attitudes towards operational workers as well as employees in general.

Iron and Steel Industries

Quality of Work Life (QWL) has become one of the important issues in manufacturing enterprises like iron and steel producing industries. In the world of materials, iron and steel products are reigning from many centuries. Iron and steel is a basic industry and forms the backbone of industrial development of any country. It provides raw material for making industrial machinery, electrical machinery, defence equipments, railway tracks, railway engines, bridges, dams, shops, automobiles, houses and a host of other industrial and consumer goods. In fact, the quantity of steel produced and its per capita consumption reflects the level of industrialization and economic development of a country.

India is the 5th major steel producing country as per the World Steel Association annual report 2010 with the 66.80 MT productions. It has increased to 71.30 MT in 2011. Steel Authority of India Limited (SAIL) is the leading steel making, Maharatna Company of India, the largest producers of Iron and steel – 23.4 MT productions in 2009-2010. Bokaro Steel Plant (BSL) is the fourth integrated and modernized unit of SAIL. It started taking shape in 1965 in collaboration with the Soviet Union. It was originally incorporated as a limited company on 29th Jan 1964 and was merged with SAIL, first as a subsidiary and then as a unit through the public sector Iron and Steel companies (restructuring and miscellaneous provision) Acts 1978. BSL has 24165 total manpower (3119-executive and 21046-non-executive) employed including the works, administration, medical, township and project. It is almost 21% manpower strength of SAIL. All the employees of SAIL regulate by the human resource polices framed in corporate office of SAIL so the employees of BSL also.

Significance of Study

Bokaro Steel Plant (BSL) is the fourth integrated and modernized unit of SAIL. To fulfil the increasing demand of steel, the expansion and modernization of plant has got the main focus of management not only in BSL but in all the units of SAIL. The modernization and expansion of plant, introduction of new product demands more competent and capable manpower. Changes in technology first affect the HR of organization. In BSL more than 24000 employees' work together to achieve organizational objectives and BSL spends a large amount to develop its valuable asset, that is, human resource. Integrated iron and steel plants are considered as most hazardous industries. Workers are bound to work in the excessive temperature, dust, in the danger of poisonous gasses and chemicals. Nearly all production workers in iron and steel foundries are exposed to silica dust and other mineral constituents of foundry sand (IARC, 1984). The proposed study would be quite useful for the employees, management and the HR policy makers of

BSL/SAIL. It would be helpful to the HR policy makers and management to identify the factors that affect the quality of work life of employees.

Objective

On the basis of the above review this paper deals on the employees' perception regarding working environment, welfare facilities, relation with superior, co-worker and management, employees' commitment and development, involvement in decision making, financial factors etc which affects their quality of work life. The main objectives of the paper are as follows:-

- To assess difference between the perceptions of executives and non executives regarding QWL in BSL.
- To evaluate the employees' perception regarding different factors of quality of work life (QWL) of employee in BSL in respect of grade demography.

Hypothesis

To achieve these objectives the following hypothesis has been tested:

Ho1: There is no significant difference between the satisfaction level of executive and non-executive regarding QWL.

Ho2: There is no significant difference in the perception of employees' regarding QWL among their different grade group.

Methodology

Questionnaire: To examine and evaluate the perception of

employees regarding the quality of work life (QWL) in BSL, a well structured questionnaire has been used. The questionnaire contains thirty one (31) variables under eight (8) factors regarding QWL. The factors includes working environment, employees' welfare factor, relational factor, promotional factor, employees' commitment and development factor, employees' involvement and influence factor, job satisfaction and financial factor. All of the questions are measured in five point scale.

Sampling method: Proportionate stratified random sampling has been used.

Target population: The total manpower strength in BSL is 24165 (3119 executives + 21046 non executives) as per the BSL records 31.3.2010.

Sample size Technique: The sample size has been taken as 760 (being formulated by Toro Yamane's formula), 360 from executives and 400 from non-executives.

$$n = \text{Sample Size, } N = \text{Population Size, } e = \text{Sampling Error } (.05) \quad n = N / [1 + N(e)^2]$$

$$\text{Executives: } 3119 / [1 + 3119(.05)^2] = 355.$$

$$\text{Non-executives: } 21046 / [1 + 21046(.05)^2] = 393$$

Analysis

Reliability Analysis

Chronbach's Alpha test has been used for testing the reliability of the questionnaires as per the scale given by George, 2003. It has been presented in table no. 1.

Table No. 1 Chronbach A lpha Reliability

S. No.	Factors	Items	Cronbach's Alpha	
			Ex.	N-Ex
1.	Working environment	2	.543	.621
2.	Employees welfare	6	.731	.779
3.	Relational factors	6	.829	.779
4.	Promotional factors	2	.574	.807
5.	Employees commitment & development	4	.761	.686
6.	Employees involvement & influence	3	.917	.811
7.	Job satisfaction	6	.795	.729
8.	Financial factors	2	.403	.558
9.	Total	31	.940	.932

Data Analysis

Table No. 2 General Profile of the Respondents

As the groups of Respondents		
Category	No.	%
Executive	360	47.37
N-Executive	400	52.63
Total	760	100.0

Table No. 4 distribution of employee according to their grade

Executives				Non – Executives			
	Grade	No.	%		Grade	No.	%
1	E ₁ - E ₃ Junior Management	134	37.2	1	S ₁ – S ₄ Junior Operative Technician	101	25.3
2	E ₄ – E ₅ Middle Management	96	26.7	2	S ₅ – S ₇ Senior Operative Technician	142	35.5
3	E ₆ – E ₇ Senior Management	130	36.1	3	S ₈ – S ₁₁ Operative Level	157	39.2
	Total	360	100.0		Total	400	100.0

E = Executives, S = Non Executives

Table no. 3 and 4 present general profile of respondents. Total respondents are divided into two categories executives (47.37%) and non executives (52.63%). Further executives

and non executives are divided into three groups according to their grade.

Table no. 6 One Way ANOVA for Significant Difference among the Grade groups of Non Executives regarding QWL

Factors	Variables	Group	Total Av. mean	ANOWA(Value)		LS	Significant pair
				F	P		
1. Working environment	The water, light, temperature etc. facilities are good	Ex. N-Ex.	3.37 3.30	1.13 0.31	P > 0.05 P > 0.05	NS NS	- -
	Rest time during working hours	Ex. N-Ex.	3.58 3.48	2.97 3.50	P > 0.05 P < 0.05	NS S	- 1vs2, 1vs3
2. Employees welfare	Housing facilities are good	Ex. N-Ex.	3.78 2.82	10.18 10.68	P < 0.001 P < 0.001	VHS VHS	1vs3, 2vs3 1vs3, 2vs3
	Maintenance of housing facilities is good	Ex. N-Ex.	2.84 2.18	2.90 4.37	P > 0.05 P < 0.05	NS S	- 1vs3, 2vs3
	Loan facilities are good	Ex. N-Ex.	4.03 3.66	1.22 1.20	P > 0.05 P > 0.05	NS NS	- -
	Medical facilities good	Ex. N-Ex.	3.66 3.25	1.44 2.16	P > 0.05 P > 0.05	NS NS	- -
	Insurance facility is good	Ex. N-Ex.	3.62 3.41	6.48 6.69	P < 0.01 P < 0.001	HS VHS	1vs2, 1vs3 1vs2, 1vs3
	Satisfied with the education facilities provided by BSL	Ex. N-Ex.	3.40 2.94	1.73 6.35	P > 0.05 P < 0.01	NS HS	- 1vs3, 2vs3

3. Relational factor	Superiors provide regular feedback about your performance	Ex. N-Ex.	3.42 3.55	6.45 5.48	P < 0.01 P < 0.01	HS HS	2vs3 1vs2, 2vs3
	Supervisor is supportive & understand your problems	Ex. N-Ex.	3.79 3.58	1.39 7.25	P > 0.05 P < 0.001	NS VHS	- 1vs2, 1vs3
	Co-workers are cooperative	Ex. N-Ex.	3.85 3.60	0.63 0.01	P > 0.05 P > 0.05	NS NS	- -
	If you offer suggestion, management pay attention	Ex. N-Ex.	3.58 3.23	1.78 4.64	P > 0.05 P < 0.01	NS HS	- 1vs2, 1vs3
	If you share grievances, management listen	Ex. N-Ex.	3.30 3.11	7.94 8.50	P < 0.001 P < 0.001	VHS VHS	1vs2, 2vs3 1vs2, 1vs3
	Management of BSL cares for you	Ex. N-Ex.	3.66 3.26	0.12 7.34	P > 0.05 P < 0.001	NS VHS	- 1vs2, 1vs3
4. Promotional factor	Promotion is based on your performance	Ex. N-Ex.	3.51 2.76	9.47 11.21	P < 0.001 P < 0.001	VHS VHS	1vs3, 2vs3 1vs2, 1vs3
	Promotion policy is fair	Ex. N-Ex.	3.28 2.83	5.08 14.06	P < 0.01 P < 0.001	HS VHS	1vs3 1vs2, 1vs3
5. Employees commitment & development	You feel proud to be employee of BSL	Ex. N-Ex.	4.41 4.55	12.90 17.91	P < 0.001 P < 0.001	VHS VHS	1vs3, 2vs3 1vs2, 1vs3, 3vs2
	If your responsibilities increases you perform happily	Ex. N-Ex.	4.11 4.05	0.21 5.25	P > 0.05 P < 0.01	NS HS	- 1vs2, 2vs3
	You enjoy your working hours.	Ex. N-Ex.	3.90 3.93	3.70 28.74	P < 0.05 P < 0.001	S VHS	1vs3 1vs2, 1vs3
	BSL provides right training to develop your skill	Ex. N-Ex.	3.49 3.11	2.76 0.89	P > 0.05 P > 0.05	NS NS	- -
6. Employees involvement	You allow you to take part in decision making for the things that will affect your job.	Ex. N-Ex.	3.69 3.44	2.37 7.60	P < 0.05 P < 0.01	NS HS	- 1vs2, 1vs3
	You have freedom to offer comment and suggestion	Ex. N-Ex.	3.79 3.68	3.44 11.23	P < 0.05 P < 0.001	S VHS	2vs3 1vs2, 1vs3
	You have freedom to share views and grievances.	Ex. N-Ex.	3.66 3.45	3.54 12.55	P < 0.05 P < 0.001	S VHS	1vs2, 2vs3 1vs2, 1vs3
7. Job satisfaction	You are convenient with your working hours and shift duties	Ex. N-Ex.	3.81 3.85	9.95 2.82	P < 0.001 P > 0.05	VHS NS	1vs3, 2vs3 -
	Your job is according to your educational qualification	Ex. N-Ex.	3.73 3.04	6.20 41.87	P < 0.01 P < 0.001	HS VHS	1vs3 1vs2, 1vs3
	Your job is according to your technical qualification	Ex. N-Ex.	3.61 3.27	0.69 32.65	P > 0.05 P < 0.001	NS VHS	- 1vs2, 1vs3
	You feel comfortable and satisfied with your job	Ex. N-Ex.	3.94 3.78	5.24 1.55	P < 0.01 P > 0.05	HS NS	1vs3, 2vs3 -
	Job security	Ex. N-Ex.	4.38 3.86	2.23 4.25	P > 0.05 P < 0.05	NS S	- 1vs2, 1vs3
	Leave policy is fair	Ex. N-Ex.	3.85 3.37	0.76 14.41	P > 0.05 P < 0.001	NS VHS	- 1vs2, 1vs3, 3vs2
8. Financial factors	Salary provided by BSL is adequate	Ex. N-Ex.	3.88 3.86	7.97 27.23	P < 0.001 P < 0.001	VHS VHS	1vs2, 1vs3 1vs2, 1vs3
	Your salary is according to the responsibilities of your job	Ex. N-Ex.	3.71 3.06	0.20 22.90	P > 0.05 P < 0.001	NS VHS	- 1vs2, 1vs3, 2vs3

NS=Not Significant, S=Significant, HS=High Significant, VHS=Very High Significant

Table No. 6 presents employees' perception regarding the eight factors of quality of work life (QWL) in relation to their grade demographic variable. Employees' perception shown with the 31 Variables under eight factors of QWL i.e.,

Working environment, Employees welfare, Relational factor, Promotional factor, Employees commitment & developmental, Employees involvement and influence, Job satisfaction and Financial factor. Statistical analysis reveals

significantly more differences in N-Ex. average perception score than the executives' regarding all factors of QWL.

Discussion

- Statistical analysis reveals that employees are satisfied with most of the taken factors of QWL except executives are not satisfied with maintenance of housing facilities, under the employee welfare factors and N-Ex. are not satisfied with housing facilities, maintenance of housing facilities and educational facilities for children under employee welfare factors. And with promotional factor.
- In the case of working environment factor, there is significant difference observed only in the perception of N-Ex regarding rest time during working hours. The non-executives of junior operative technician level (S₁-S₄) have significant less average satisfaction score than the N-Ex. of other operative level. (F=3.50)
- Under the employee welfare factor the executive of senior management level (E₆-E₇) have significantly high average satisfaction score regarding housing facilities and the executives of junior management level (E₁-E₃) have significantly high average satisfaction score regarding insurance facility than the executives of other management level.

In non-executives the employees of operative level (S₈-S₁₁) have significantly high average satisfaction score regarding housing facility, maintenance of housing facility and educational facilities for children. The employees of junior operative technician level (S₁-S₄) are significantly less satisfied with insurance facility than the employees of other operative level.

- Under the relational factors, the executives of middle management level (E₄-E₅) have significantly more average satisfaction score regarding supervisors are supportive and management listen the grievances.

In non-executive the employees of junior operative technician (S₁-S₄) have significantly less average satisfaction score regarding relation with supervisor and management.

- Under promotional factor, the executives of senior management level (E₆-E₇) have less average satisfaction score than the executives of other management level and in N-Ex. the employees of junior operative level (S₁-S₄) have less satisfaction score regarding promotional factor.
- Under employee commitment and development, executives of senior management have significant less average satisfaction score regarding proud feeling to be BSL employee and they enjoy their working hours. But in N-Ex. of senior operative technician (S₅-S₇) are more satisfied to be called BSL employee and they perform happily when responsibility increases.
- Under the employee involvement and influence, the executives of junior management (E₁-E₃) are significantly less satisfied regarding they have freedom to share grievances and the N-Ex. of junior operative technician (S₁-S₄) level have significantly less average satisfaction score regarding employees involvement and influence.
- Under the job satisfaction the executives of senior management level (E₆-E₇) have significantly less average satisfaction score regarding working hours and shift duties and their job is according to their educational qualification, but regarding their comfortably and satisfaction with job the executives of senior management level (E₆-E₇) have significantly high average satisfaction score than the executives of other management level.
- In the case of non-executives employees, the employees of junior operative technician level (S₁-S₄) have significantly less average satisfaction score all most all the variables (labels) of job factor.
- Under the last factor i.e. financial factor, the executives of junior management level (E₁-E₃) are significantly less satisfied with salary adequacy of salary provided by BSL. In the case of N-Ex. employees, the employees of junior operative technician level (S₁-S₄) have significantly less average satisfaction score regarding financial factor than the employees of other operative level.

Table no.7 χ^2 Test for Significant Difference between the Responses of Executives and Non-Executives Regarding QWL

Factors	Variables	Value			LS
		χ^2	df	p	
1.	Working Environment				
	Water, light and temperature etc. facilities are good	14.26	4	$p < 0.01$	HS
	Rest time during working hours.	23.26	4	$p < 0.001$	VHS
2.	Employees Welfare				
	Housing facilities are good	151.49	4	$p < 0.001$	VHS
	Maintenance of housing facilities is good	99.81	4	$p < 0.001$	VHS
	Loan facilities are good	48.20	4	$p < 0.001$	VHS
	Medical facilities are good	39.42	4	$p < 0.001$	VHS
	Insurance facilities are good	24.13	4	$p < 0.001$	VHS
	Education facilities for children provided by BSL is good	36.91	4	$p < 0.001$	VHS
3.	Relational Factors				
	Supervisors provide regular feedback about your performance	30.04	4	$p < 0.001$	VHS
	Supervisor is supportive and understands your problems	22.32	4	$p < 0.001$	VHS
	Co-workers are cooperative	34.51	3	$p < 0.001$	VHS
	If you offer suggestion, management pay attention	58.14	4	$p < 0.001$	VHS
	If you share grievances management listen	27.92	4	$p < 0.001$	VHS
	Management of BSL cares for you	35.44	4	$p < 0.001$	VHS
4.	Promotional Factor				
	Promotion is based your performance	131.91	3	$p < 0.001$	VHS
	Promotion policy is fair	62.42	4	$p < 0.01$	HS
5.	Employees Commitment & Development				
	You feel proud to be employee of BSL	16.03	4	$p < 0.01$	HS
	As responsibilities increase you perform happily	41.40	4	$p < 0.001$	VHS
	You enjoy your working hours	3.94	4	$p < 0.05$	S
	BSL provides right training to develop your skill	102.41	4	$p < 0.001$	VHS
6.	Employees Involvement and Influence				
	You are allowed to take part in decision making	31.84	4	$p < 0.001$	VHS
	You have freedom to offer comment and suggestion	31.77	4	$p < 0.001$	VHS
	You have freedom to share views and grievances	35.69	4	$p < 0.001$	VHS
7.	Job Satisfaction				
	You are convenient with your working hours & shift duties	3.34	4	$p > 0.05$	NS
	Your job is according to your educational qualification	108.51	4	$p < 0.001$	VHS
	Your job is according to your technical qualification	65.81	4	$p < 0.001$	VHS
	You are comfortable and satisfied with your job	27.35	4	$p < 0.001$	VHS
	Job security	67.39	3	$p < 0.001$	VHS
	Leave policy is fair	64.16	4	$p < 0.001$	VHS
8.	Financial Factors				
	Salary provided by BSL is adequate	38.46	4	$p < 0.001$	VHS
	Your salary is according to the responsibilities of you job	97.68	4	$p < 0.001$	VHS

*High Significant, **Very High Significant, ***Significant, ****Not Significant

Above table depicts difference between perceptions of executive and non-executive regarding QWL. The differences between perceptions of executives and non executives have been found significant in most of the factors of QWL. Only regarding working hours and shift duties there is no significant difference between perception of executives and non-executives ($\chi^2=3.34, p>0.05$).

Findings & Conclusion

The statistical analysis reveals that employees are satisfied with most of the taken factors of QWL except the executives who are not satisfied with maintenance of housing facilities, under the employees' welfare factor. In case of non-executives, employees are not satisfied with housing facilities, maintenance of housing facilities and educational facilities provided by BSL for employees' children under employee's welfare factor and similarly with those under promotional factor. The executives of BSL are found to be more satisfied than non-executive employees. The analysis reveals very high significant differences between the perceptions of executives and non-executives regarding most of the taken factors of QWL except regarding shift duties and working hours where no significant differences are found. So the null hypothesis (Ho1) has been rejected in most of the variables except in case of shift duties and working hours.

Father in the case of executives, it is found that there have been significant differences in some of the variables of QWL. But there is significant difference have been found among various management group regarding most of the variables of QWL. The middle level executives (E₄-E₅) are more satisfied regarding the relationship with superior and management and the executives of middle management level are also more satisfied regarding their involvement and influence in organization. Regarding shift duties and working hours and about promotional factor the executives of senior management level are found to be less satisfied, whereas executives of junior management level are less satisfied with adequacy of salary.

In case of non executives, grade demographic have very important impact on the non-executives employees' satisfaction towards QWL. Statistical analysis shows significant differences between perceptions of non-executives of different grade groups. The non-executive employees of junior operative technician (S₁-S₄) are not satisfied with most of the factors predominantly with housing and maintenance of housing facilities, relationship

with management, promotional factors etc whereas the employees of operative senior level (S₈-S₁₁) are more satisfied with most of the taken factors of QWL. So the null hypothesis (Ho2) has been rejected in most of the taken variable of QWL in both the category (executive and non-executive) of employees.

Through the observations, executives have been more satisfied than the non-executives in all the taken factors of QWL working environment, employee's welfare, relationship in workplace, job factors, impact on personal life and financial factors. Grade demographic has found to have great effect on QWL mostly in the non-executives as the satisfaction level of employees' increases as their designation increases predominantly in financial factors, welfare factors, job factors, involvement in management factors etc.

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