

EMERGING TRENDS AND PRACTICES OF HUMAN RESOURCE PLANNING IN STEEL INDUSTRY: A CASE OF ROHIT FERROTECH LIMITED IN INDIA

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***Abstract: Background/ Objective:** The purpose of this paper is to assess the emerging trends and practices of human resource planning in steel industry in Odisha, India. **Methods/ Statistical analysis:** This study includes both qualitative and quantitative analysis of data by discussing with both executives and non-executives. A total 100 questionnaire were administered. Out of which, only 64 were received back and 42 were found to be complete and correct. Care has been taken to cover almost all departments of the plant. KMO Batlett's test, Mean, Standard Deviation, ANOVA and Post Hoc test are calculated through SPSS 20. **Findings:** The study reveals that The Human Resource Planning practices in RFTL is not adequate and needs improvement. Decision making is centralised which a bottleneck for smooth functioning. There is no significant relationship between the age of employees with human resource planning and process (HRPP) whereas, there is a significant relationship between the HR demands forecasting (HRDF) and position of personnel of the organisation. **Applications/Improvements:** The human resource planning should be improved to ensure effectiveness of the organization. This study can give more clarity on improving productivity of an organization through proper human resource planning.*

***Key words:** Human Resource Planning, Rohit FerroTech Limited, HRPP, HRDF*

INTRODUCTION

Every organization strives to achieve success and reach at the pinnacle. Success of the organization depends on its human capital, whose foundation is manpower inventory and proper human resource planning (HRP). HRP is a process which identifies current and future human resource needs of an organization to achieve its goals. It serves as a link between human resource management and the overall strategic plan of an

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organization. It ensures the right type of people, in the right number, and at right place, which are trained and motivated to do the right kind of work at the right time. In this cutting edge many companies are focusing on excellence, quality, global championship which navigates them for rationalisation, modernization, diversification, merger and acquisition etc. Every company incorporates a series of planned actions, tactics and strategies, which will ensure that all of the key objectives will be achieved within a defined time frame of a business plan. Human resource planning emphasizes mainly on three things, - business plan, financial capacity and bottlenecks in current manpower capital.

Business plan- A business plan shows the road map for short run and long run achievement. This includes a large element of planning about the utilization of resources, particularly the critical and limited resources are to be utilized perfectly to enhance over all capability. Management resources tend to be crucial and frequently represent the single critical factor, which limits what the enterprise can or cannot do.

Financial capacity- Financial resources are essential but substantial additional finance is generally available to a well-run business and is not generally the limiting factor. Machinery, raw material, space, etc. can be covered under the general heading of finance (the ability to pay for them), although there is time considerations on availability of specified space, equipment and materials to be taken into account.

Bottlenecks in current manpower capital are to be reviewed time to time for their effectiveness and burning age. The organization has to focus the finer aspects of efficacy and effectiveness of the employees. The competency of human capital may get changed over the years due to advanced technology, lack of learning and development, lack of motivation, age, stress etc. The company also gets affected by absenteeism, attrition rate in terms of superannuation, death, dismissal or discharge etc. Company sometimes wants to recruit and inject new bloods for its requirement of bench, strategic planning, diversification, growth and expansion. In any business plan, we need to draw out the key human resource actions required so that appropriately designed strategies are planned, developed and implemented.

The steel scenario of India is experiencing a slow growth rate as the China steel has captured the global market. It is a time to introspect the entire production, procedure, raw materials, logistics sales and distribution and human factor. The composition of each resource is to be proportionate which can flow towards niche marketing across the globe. Indian steel sector has to find out an uncovered way to cherish human resource planning along with other resources. The current study has taken in Rohit FerroTech Limited (RFTL), Kalinga Nagar, Odisha in India particularly on their human resource aspects as a major contributing factor of its efficacy and effectiveness. Human resource planning is the backbone of effective utilization of human resources.

BACKGROUND OF THE STUDY

Steel is the backbone of any country's financial condition as well as the growth of the country. There are a number of steel producers who have been approaching the Ministry of Steel for classifying them as Integrated Steel Plants or Primary Steel Producers. This was prompted by the user industries' preference for Integrated/ Primary Steel Plants for steel procurement presumably on the ground that only such producers are capable of supplying quality steel in the right quantity. In order to resolve this issue, it has been decided to classify and certify steel producers in the private as well as public domain manner, i.e. (1) on the basis of process route/ technology adopted, and (2) on the basis of size /capacity. The economic reforms initiated by the Government since 1991 have added new dimensions to industrial growth in general and steel industry in particular. Price and distribution controls have been removed from January, 1992, with a view to make the steel industry efficient and competitive.

A well-differentiated player of steel in the Ferro Alloy manufacturing sector, Rohit Ferro-Tech Limited (RFTL) operates with a vision that inspires, and a business strategy that sustains.

RFTL started its journey in 2003 with a humble capacity of 24,000 TPA from its 2 x 9 MVA furnaces in Bishnupur, West Bengal. With its continuous expansions every year, the group now has a total installed capacity of 2, 74,583 mtpa. The company is also setting up a 67 MW Captive Power Plant at its Jajpur unit to feed its energy requirements. In an attempt to forward-integrate, RFTL has set up a 100,000 TPA Stainless Steel manufacturing facility at its Bishnupur unit and the capacity utilisation is being enhanced in phases. On the side of backward integration, RFTL has acquired economic interest in coal mines in Indonesia securing thermal and coking coal requirements of its manufacturing facilities. Since its inception, the Company has come a long way to position itself as one of the leading producer of High Carbon Ferro Chrome. RFTL has accreditation of ISO 9001:2000.

Efficiency of the Ferro Alloy industry is based on few major factors like, quality input, quality product, market demand, sales and distribution system, employee satisfaction, motivation and commitment of the employees, organizational culture and climate, human resource development and human resource planning (HRP). HRP ensures the optimum utilisation of human resources and forecast the demand and supply of man power.

STATEMENT OF THE PROBLEM

Like other approaches to Human resource planning, organization planning fails to provide the assurance that future manpower requirements are considered satisfactorily. The organization planner is restricted in his work due to lack of quantitative data, adequate analysis of each thrust areas and keeping a track of impact of external environments on its business, as he does not have the responsibility for programmes that would develop manager to fill up the gap of future organization positions.

RATIONALE OF THE STUDY

With the growth of the requirement of steel in global market, the Indian steel producing organizations has faced with new challenge. There is a need of skilled and experienced professional in these organizations. As India is very large in terms of population it is a very difficult task to choose right kind of people at right place at right time. This again calls for maintaining those skills for a longer period inside the organization. The main reason behind the implementation of human resource planning in Rohit FerroTech Limited (RFTL) is its inconsistent positive growth in last few years. Admittedly, HR planning process is critical to the realization of the above objectives.

The **steel industry** must attract, develop, and maintain an energetic workforce to support its goal and strategies. It has been found that firms that use proper HRP has succeeded. Various study have been conducted which focused the relationship between the HRP and organizational effectiveness in many steel **industry**, but there is a dearth of research on the emerging trends and practices of human resource planning in sector steel industry at Kalinga Nagar Industrial Complex, Jajpur, particularly in Rohit FerroTech Limited (RFTL), which make the study a unique one. This study is an endeavour in this direction. It tries to identify the gap by examining the relevance and impact of human resource planning (HRP) in RFTL. The earlier empirical study provides the basis for theoretical investigation of the study.

OBJECTIVES OF THE STUDY

The research is based on few objectives, which are illustrated below:

- To study the existing practices and emerging trends of Human Resource Planning in RFTL.
- To find out the bottlenecks of implementations of HRP in RFTL.
- To study of outcomes of current HRP practices and desired practices in RFTL.

HYPOTHESES

The study has formulated the following hypotheses:

- H1. There is significant relationship between the age group and Human Resource Planning and Process dimension.
- H2. Proper HR planning helps in improving the effectiveness of the organization in terms of increased productivity and reduced manpower wastage.

RESEARCH METHODOLOGY

This study comprises of both qualitative and quantitative analysis of variables that aimed to highlight the emerging trends and practices of human resources planning (HRP) in RFTL. A structured instrument has been designed on the basis of different studies found through literature review and the pilot study. Validity of the scale was

taken care of by applying three steps: In 1st, face validity was checked by the help of a group of experts in the field of HR from steel industry and academia. In second step, content validity was applied from the literature. In third step, reliability was tested using Cronbach's Alpha, which is ($\alpha = 0.951$) and individually Cronbach's alpha was also tested for each sub-construct. Thereafter, the human resource planning questionnaire (HRPQ) was used for the study. It has seven dimensions: human resource planning process (HRPP), Human Resource Information System (HRIS), human resource demand forecasting (HRDF), human resource supply forecasting (HRSF), career planning (CP), Performance Appraisal and Training dimension (PAT) and HR audit and accounting (HRAA) dimension in age.

SAMPLING

The respondents were selected on the basis of Stratified Random Sampling Technique. A total 100 questionnaire were administered. After continuous follow up requests, only 64 were received back and 42 were found to be complete and correct. Care has been taken to ensure that the sample covers almost all important departments of the plant.

SOURCES OF DATA COLLECTION

Data **have** been collected from both primary and secondary sources. A structured questionnaire was administered to the respondents for primary data and company data, manual, company website, notices, discussions and observations were made for secondary data.

LITERATURE OVERVIEW

Human Resource Planning is the process of assessing about the future method or practice for predict teething troubles and searching through reasoned action on the basis of fore-knowledge and to guide the action towards the required goal (Lester, 1996). It is likely to define human resource planning from a tampered point of view or from a very broad one (Patten, 1971). Human resource planning determines the human resource required by the organization to achieve its strategic goals (Amstrong, 2006). According to Stainer, (1972), human resource planning aims to maintain and improve the ability of the organisation to achieve corporate objectives, through the development of strategies to enhance the contribution of personnel at all times in the foreseeable future". Birch (2007), defines HRP in service industry that it aims at having right number of people at right time in the right place with the right skills to provide right services to right people.

Starting from a very narrow sense of replacement planning which normally conducted in industrial **relation** activities within an organization to tantamount to personnel planning and its actions like staffing, selection, placement, training and development, wages and salary management labour relations etc, to human resource

and employment policy at the level of financial system. In this context human resource is regarded as the qualitative and quantitative measurement of the employees and planning considered as to enhance employees in line with different other organizational goals (Srivastava, 1997). Different authors used different names for different approaches to human resource modelling and forecasting, (Fooks *et al.*, 2002). Dainty (2000) holds the view that a workforce can save the organization a lot of money and at the same time add competent staff to the organization to surpass business target.

HR planning helps identifying effective workforce with proper skills and knowledge needed. A well-structured and carefully performed human resource system, including recruiting, hiring and retention, not only can improve a firm's profitability, but also can sharpen its competitive edge (Boxall and Steeneveld 1999). Besides, it is observed that many organizations including the well resourced still imagine that recruitment is all about attracting young workers fresh from schools or after only a few years in the labour market Boxall P. & Purcell. J. (2003). Ulrich and Brockbank (2005) propose four roles for HR planners which include: managing strategic HR, employee contribution, transformation and change and HR infrastructures to support line managers in operation. But in this matter, Guest and King (2004) viewed that there was little emphasis on the first three roles; instead the focus appears to be placed on managing infrastructures.

For all this actions of HRP, a well run, up to date and users' friendly human resource information system (HRIS) is required inside the organization. HRIS helps managers to take decisions quickly, accurately and precisely. Aptly described by Kavangah *et al.*, (1990), HRIS is a computer system used to acquire, store, manipulate, analyse, retrieve and distribute information related to human resources. Besides hardware and software, it also includes people, forms, policies, procedures and data. Modern HRIS can help organisations by automating most HR planning functions.

Armstrong (2006) defines performance appraisal as the formal assessment and rating of individuals by their managers usually, at an annual review meeting. Performance appraisal is the systematic evaluation of the individual with regard to his or her performance on the job and his potential for development (Dale, 1980). Evaluation of performance is inherent capability of a person or evaluation of work assigned. The evaluation of performance of a person can be done through observation in respect to time. Another thing is how the work is done by the person with respect to quality of work. Evaluation is present performance and potential performance of the employee in future, where present performance is the performance of an employee in present time and potential performance is the expected performance of the employee in future. Demand forecasting of human resource requirements has traditionally utilized one of three basic approaches: "utilization or demand based," "supply based," and "needs based" (Fooks *et al.*, 2002). Demand forecasting is the practice of estimating the prospect of quantity and quality of human resource required (Aswathappa, 2009). For career planning, the organization should chart different paths which should be

made known to all employees. As every employee desires for a bright future, these career paths do provide the hope to achieve success (Kanagaraj *et al.* 2014). Human Resources Audit is a part of HRP which measures of human resource outputs and effectiveness under the given circumstances and the degree of utilization of human resource outputs. HR audit can be used as a measure to evaluate the personnel activities, climate, and compliance of an organization's policies (Shaban, Osama (2012).

HUMAN RESOURCE PLANNING IN RFTL

Human resource planning in RFTL is synchronised with the annual budget calendar/ recruitment schedule. Since the productivity in RFTL is low, as compared to the International standard, due to various reasons, RFTL is running with a minimum manpower of as it is a completely modernised integrated steel plant in Odisha, India. The primary objective of this exercise is to ensure availability of manpower as and when required with best fit to the organization.

DATA ANALYSIS AND INTERPRETATION

The instrument has been designed based on literature and pilot study. Validity of the scale was taken care of by applying four steps:

In first step, face validity was checked by the help of a group of experts in the field of HR from steel industry and academia. In second step, content validity was applied from the literature. In third step, exploratory factor analysis was done. Above 0.5 values were considered from rotated component matrix and an instrument was developed including seven sub-constructs (as per the result) which includes: Human Resource Planning Process (HRPP), Human Resource Information System (HRIS), Human Resource Demand Forecasting (HRDF), Human Resource Supply Forecasting (HRSF), Career Planning (CP), Performance Appraisal and Training (PAT) and Human Resource Audit and Accounting (HRAA).

In fourth step, reliability was tested using Cronbach's Alpha, which is (alpha= 0.951) and individually Cronbach's alpha was also tested for each sub-construct. Hence the human resource planning questionnaire (HRPQ) was used for the study.

Table 1
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.951
Bartlett's Test of Sphericity	Approx. Chi-Square	6120.283
	df	595
	Sig.	.000

Exploratory factor analysis has been applied for scale validation. Sub constructs/ dimensions are framed, based on the factor loading and rotated component matrix values, which are above 0.05.

The demographic data and its relationship with different variables are represented below:

Table 2
Mean and Standard Deviation of Human Resource Planning Process (HRPP)
dimension in age variation

Sl no	Years	N=42	Mean	Standard Deviation
1	<20 yrs	0	0	0
2	20-30yrs	5	20.00	2.345
3	31-40yrs	22	18.64	4.282
4	41-50yrs	11	18.82	2.786
5	51yrs & above	4	21.50	2.082

Table 2 indicates the mean value and standard deviation in HRPP dimension having 5 variables. It shows the group belonging to 51 and above years of age have the highest mean value ($\bar{x} = 21.50$), whereas other age group shows minimal difference in mean, but the standard deviation ($\sigma = 4.282$) is highest in 31-40 years of age group. There is a comparatively lowest variability among the variables in 51 and above age group ($\sigma = 2.082$). It means 51 and above age group respondents perceive that HR planning is done in RFTL for proper utilization of manpower and it helps in determining future manpower requirements in RFTL. The respondents of other age groups expressed a mixed view on the utilization of HRPP in RFTL. Variability in responses is more among 31-40 years and above age group.

Table 3
ANOVA of HRPP dimension

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	32.677	3	10.892	.832	.485
Within Groups	497.727	38	13.098		
Total	530.405	41			

The Table 3 presents the ANOVA, variation in responses among the age groups in HRPP dimension. The value indicates that there is no significant relationship between the age group and HRPP dimension as it is greater than 0.05% i.e. 0.85. Hence, hypothesis-1 has been rejected. It is clear that to plan about human resources, age does not affect, and rather some other factor like competency, vision, talent, commitment, involvement etc. may be important for that which are to be explored in further research.

The Table 4 shows the Post Hoc test of HRPP dimension among age variable within the group and between the groups. In all groups the significance level shows more than 0.05, where confidence level is less than 95%.

From the Table 5, it is observed that mean value ($\bar{x} = 21.37$) of executives is more than the non-executive respondents of RFTL ($\bar{x} = 18.17$) in HRDF dimension. It states

Table 4
Post HOC Test in HRPP Dimension

<i>Dependent Variable:</i> <i>HRPP Tukey HSD</i>				
<i>(I) Age</i>	<i>(J) Age</i>	<i>Mean Difference (I-J)</i>	<i>Std. Error</i>	<i>Sig.</i>
20-30yrs	31-40yrs	1.364	1.793	.872
	41-50yrs	1.182	1.952	.930
	51yrs & above	-1.500	2.428	.926
31-40yrs	20-30yrs	-1.364	1.793	.872
	41-50yrs	-.182	1.336	.999
	51yrs & above	-2.864	1.967	.474
41-50yrs	20-30yrs	-1.182	1.952	.930
	31-40yrs	.182	1.336	.999
	51yrs & above	-2.682	2.113	.588
51yrs & above	20-30yrs	1.500	2.428	.926
	31-40yrs	2.864	1.967	.474
	41-50yrs	2.682	2.113	.588

*. The mean difference is significant at the 0.05 level.

Table 5
Mean and Standard Deviation of Human Resource Demand Forecasting (HRDF)
dimension in Position variation

<i>Sl no</i>	<i>Position</i>	<i>N=158</i>	<i>Mean</i>	<i>Standard Deviation</i>
1	Executive	19	21.37	3.947
2	Non executive	23	18.17	4.933

that the executive respondents of RFTL opined that HRDF is indentifying departments of work groups that can benefit productivity improvement factors. Whenever there is a shortage of manpower, the non-executive employees are recruited more than executive employees. The standard deviation value ($\sigma = 4.933$) in non-executive employees is more in comparison to the executive respondents ($\sigma = 3.947$) at RFTL.

Table 6
ANOVA of HRDF in Position variation.

<i>HRDF Dimension</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between Groups	106.179	1	106.179	5.207	.028
Within Groups	815.725	40	20.393		
Total	921.905	41			

Table 6 represents the ANOVA value of HRDF variables in position variation. The value is statistically significant because it is less than 0.05 (Sig-0.028). Hence there is a relationship between the HR demand forecasting (HRDF) and position variation at RFTL.

Table 7
Expenditure trends (Year wise) at Rohit Ferro Tech Limited (RFTL)

<i>Item</i>	<i>2010-11 (In Lakh)</i>	<i>2014-15 (In Lakh)</i>	<i>% Increase In RFTL</i>	<i>Average. % RFTL</i>
	<i>Rohit</i>	<i>Rohit</i>		
Raw material	3,889,7.58	58157.52	3.31%	6.62%
Power and fuel	695,7.54	462,5.47	5.01	1.01
Salary and wages	76,9.47	2307.24	66.6	13.3
Total Expenditure	8,280,95.27	201008.58	15.01%	3.01%

An approach on expenditure trends of RFTL is represented in table-7. It shows that there is an increasing trend in expenditure towards human resource cost in last few years which can be compensated with the increase of income.

Table 8
Employment Cost in RFTL

<i>Items</i>	<i>2010-11</i>	<i>2014-15</i>	<i>% increase</i>	<i>Average % Increase/year</i>
Salaries, Wages, Bonus & Allowances	1115.81	2,391.30	114.31	22.86
Contribution to Provident & Other Funds	52.41	123.43	135.50	27.1
Gratuity	37.6	42.37	12.68	2.53
Directors' Remuneration	66.00	42.37	-35.80	-7.16
Welfare Expenses	38.79	62.64	61.48	12.29
Total employment Cost	1280.62	2,711.85	111.76	22.35
Average Employment cost (cost/employee/year)	5.12	11.06	116.01	23.20

An approach on where Rohit Ferro Tech Limited (RFTL) stands on manpower cost is depicted above in Table 8. It is clear that the average employment cost of employees has been increased by 23.20 percent in last five years. But the majority hike taken place during 2014-15 in terms of salary, contribution to provident & other funds, gratuity and welfare expenses where as it has experienced a decline trend of cost towards directors' remunerations. It is because earlier there were four directors in RFTL but now it managed by a single director.

Table 9
Absenteeism rate at RFTL

<i>Year</i>	<i>Total Mandays lost</i>	<i>Total Mandays worked</i>	<i>Absenteeism (%)</i>
2010-11	6906	72771	9.49
2011-12	6722	72670	9.25
2012-13	5290	51862	10.20
2013-14	4898	45904	10.67
2014-15	6631	86906	7.63

The absenteeism rate in RFTL is reflected in Table 9. It is observed that the authorised absence of employees is highest in the year 2010-11 and lowest in the year 2013-14. In the case of un-authorised absence, the figure is highest in the year 2010-11 and lowest in 2014-15 at RFTL. The highest absenteeism rate (10.67%) is observed in the year 2013-14 and lowest (7.63) is observed in 2014-15. The absenteeism rate is always low in RFTL in comparison to the nearer plants. The employees of RFTL are more conscious about their leave as it is a private organization.

Table 10
Labour productivity (total production in tonnes / man year) at RFTL

Year	Works dept.	Non-Works and Admin. Dept.	Total production In 'tonne'
2010-11	665.52	683.51	75870
2011-12	598.99	618.47	76072
2012-13	670.53	790.26	88510
2013-14	559.36	616.11	85024
2014-15	371.05	407.87	53432
2015-16	261.09	281	33159

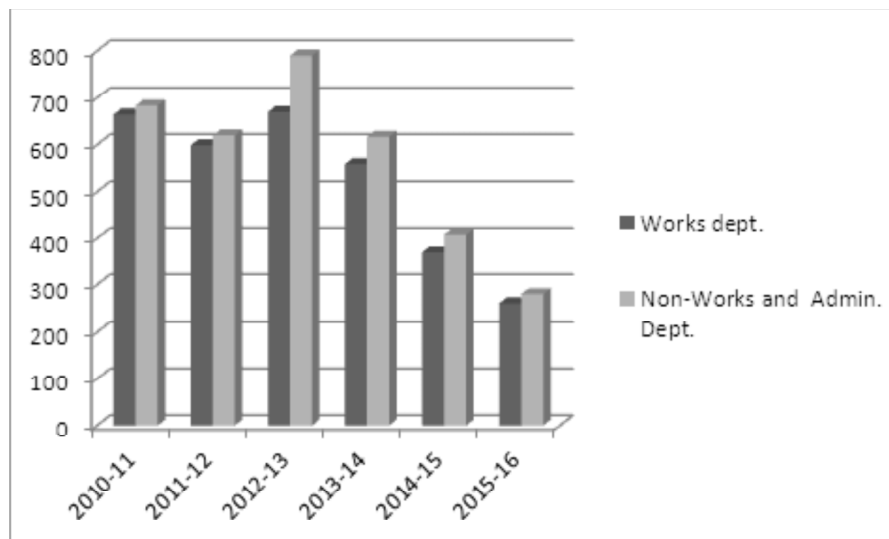


Figure 1: Labour productivity at RFTL

The labour productivity in RFTL does not exhibit a particular trend. In RFTL, the labour productivity during 2010-2011 and 2015-2016 do not show any particular trend. It increased and decreased for 2013-14.

Analysis of wastage in terms of absenteeism and turnover in the plant revealed that separation increased after 2012-13, absenteeism also increased in both the plants after 2012-13. Therefore, on analysis, it was found that the wastage increased during

last three years and labour productivity did not maintain an increasing trend. Hence, the Hypothesis-2, that "Proper HR planning is improving the effectiveness of the organization in terms of increased productivity and reduced manpower wastage" did not hold good.

Table 11
Stability Index of RFTL

Year	Total manpower in nos.	No of employees with 1 year's Service at date	Number of employees employed exactly one year before	Stability index
2010	225	25	33	75.75
2011	250	0	15	0
2012	244	46	59	77.96
2013	190	-11	10	-110
2014	175	-23	2	-1150

Table 11 shows the labour stability index of RFTL. The labour stability index typically links the leaving rate with length of service. The stability of employees is higher in 2010 but after 2011, it is declining drastically. This is a threat to the organisation. Though RFTL is a private sector, but it has to take precautions to increase its stability rate.

$$\text{The Rate of stability is expressed as} = \frac{\text{No of leavers with more than 1 year's of service}}{\text{Numbers employed one year ago}} \times 100$$

OR

$$\frac{\text{No of employees with 1 year's Service at date}}{\text{Number of employees exactly one year before}} \times 100$$

CONCLUSION

Success of the any organization depends on its human capital, whose foundation is based on proper human resource planning (HRP). HRP is a process which identifies current man power position to its desired position to achieve its goals. It serves as a linking pin between human resource management and the overall strategic plan of the organization. The Human Resource Planning practices in RFTL is not adequate and needs improvement. Decision making is centralised which a bottleneck for smooth functioning. There is no significant relationship between the age of employees with Human Resource Planning and Process (HRPP) where as there is significant relationship between the HR demands forecasting (HRDF) and position of personnel of the organisation. At present the turnover rate is higher in case of executives as compared to non-executives in RFTL. The higher rate of separations in case of executive is 12.8% in RFTL which could be due to ambition and higher career aspiration, getting job nearby

town and getting higher post in government sector etc. On the other hand, the separation percentage for non-executives is 8% in RFTL. The organization has developed HRIS for everyone, which is the only factor which is instrumental for HRP. HRIS is being used for compensation, tracking of attendance, promotion and increment details. It needs to be applied in career development and other HR functions like training process, performance appraisal, HRP processes etc. for better talent management exercise.

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