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JOB EVALUATION IN A PVC PIPE MANUFACTURING COMPANY- A CASE STUDY

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Abstract

One of the major problems that confronts the management of every company is the determination of satisfactory wage structure. Wages constitute an important aspect in the whole gamut of labour and management relations. A well-designed wage structure is an important factor in worker satisfaction. In this paper an application of a point rating plan for job evaluation and establishment of a fair wage structure for a leading PVC pipe manufacturing company has been discussed. The objective of the present work is to establish a fair and workable system of wage differentials between various jobs in the organization and to sort out wage anomalies between similar jobs. Point rating method was used here. The method resulted in establishment of grades of jobs in the organization and consequently the wage structure.

Key words: Job evaluation, Point Rating plan, job factors, wage structure.

INTRODUCTION

Effective and efficient utilization of manpower is one of the important issues of modern competitive industrial world. For improving human resource productivity, it is necessary for the management to provide right working environment, adequate rewards &opportunities for participation, mutual trust and confidence. The efficient utilization of human resource is considered to be a vital factor in organizational dynamics and it is supposed to be a crucial variable for evaluating its effectiveness(Bergmann T. J., 2001). Job evaluation is a scientific technique for ensuring fairness and consistency in deciding workload and payment for all workers. Job evaluation can be used to help improve or evolve new pay and grading structure, supporting the business needs and protecting the organization against any potential pay challenges (Armstrong and Cummins, 2005). Job evaluation is a systematic procedure for determining the relative worth of a job within an organization and for establishing an adequate wage structure. The function has been generally performed by the wage and salary administration department or by the industrial engineering department of the organizations. The company under study happens to be a reputed manufacturer of plastic polymer piping systems, moulded plastic products and premium quality plastic products. It is envisaged that the present work shall make efforts to eliminate or reduce workers' dissatisfaction due to wages.

LITERATURE REVIEW:

Job evaluation has been defined by many experts and organizations. Here are key definitions:

- Job evaluation is the process of converting job content and job responsibilities into a rationale for a job hierarchy (Maynard, 2001).
- According to Fippo (1995) job evaluation is the process of analysis and assessment of jobs to ascertain their relative worth, using the assessment as a basis for a balanced wage structure.
- Armstrong (2002) defined job evaluation as a systematic process of determining the relative value of different job posts within an organization.
- As per British Management Institute job evaluation is the process of analysis and assessment of jobs to ascertain their reliably their relative worth.

Following are the major benefits of job evaluation (Quaid, 1993)

1. It provides logical basis for grading of jobs.
2. It can be used to examine whether wage discrimination is practiced in the organization.
3. It reduces the risk that arbitrary decision will influence the determination of wages.
4. It promotes the sense of equality and fare attitude of management amongst the workers.

Key limitations of job evaluation (Lott, 1926)

1. Job factors change as a result of changes in production technology information system and division of labour and such other factors.
2. Job evaluation takes time to install required skills among technical personnel.

Analytical job evaluation has been applied in some European countries as well as in USA for more than quarter of century. Job evaluation played an important role in World War II (Pornschlege, 1977).

Gilbert (2005) assert that Job evaluation is an effective tool for assessing jobs Selection of a job evaluation technique is very important for effectiveness. The technique should be selected after giving due consideration to suitability for the concerned organization. The implementation of selected method must be done carefully, following all the steps meticulously. If the method is not applied properly substantial differences may exist between the job factors and factors emphasized in the study which may reduce its effectiveness

This work emphasizes on development of an improved wage system and creation of equal pay for equal work effort. It is likely to improve various factors like worker morale, production output etc.

PROBLEM FORMULATION

This research was conducted for a leading PVC pipe manufacturing company's unit located in central India. The manufacturing unit has an employee strength of about 850. The main goal of this study were, to grade jobs firstly and secondly decide a fair wage structure so as to eliminate employee dissatisfaction and conflicts in the organization.

METHODOLOGY

The authors analysed various job evaluation methods and Point-rating method was found be the best suited for the purpose. It is a simple and effective method. It also helps in inter-firm comparison and answering wage distribution disputes more logically. The Point rating system (or point system, as it is also known) represents the most practical quantitative job evaluation technique, Selvendy (2001).The research was conducted using Primary data. Fig. 1 shows various steps involved in Point rating method.

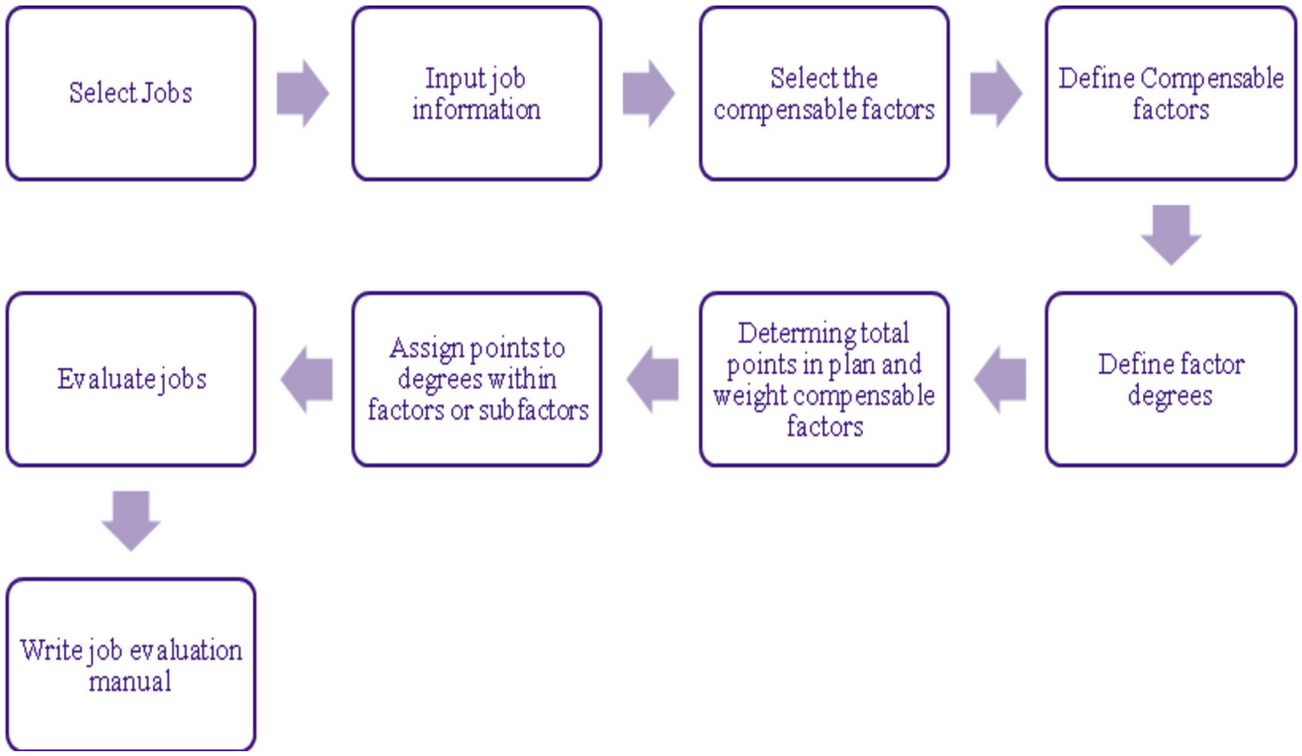

Fig. 1 Steps of Point Rating Method

For applying job evaluation a committee was formed. The committee was made up of key decision makers (or their representatives) from various functions (or units, such as finance, operations, engineering, and marketing) of the organization. Production and personnel managers were invited to hold periodic meetings. Suggestions of the Human resource manager were also sought. In all 34 job positions were selected to be included in the study (for detailed list refer Table3). The job evaluation program for this study was limited to these selected 34 shop floor jobs.

A questionnaire was developed in order to gather the details of job content of the selected jobs and to know the factors that are important for jobs. Informal interviews were also conducted to get further insights. The data so collected was used to arrive at job descriptions, job specification and appropriate job titles. The selected factors were divided into 14 sub factors as shown in Table 2.

Job factors for this study were chosen on the basis of experience of various organization Wickers (1997), Treiman (1979), Selvendy (2001), Pornschlege (1977), Maynard (2001), Armstron and Cummins (2005). These four were used originally in the National Electrical Manufacturers Association (NEMA) plan in the 1930s and are also included in the Equal Pay Act (1963) to define equal work Selvendy (2001).

For all the sub factors appropriate weight ages were decided. These weight ages were decided based on the work of other researchers [Wickers (1997), Treiman (1979)] as well as the expert committee recommendations. The sum total of weight age is 100 (Table 2).

The next step is to decide, in consultation of experts and company representative the number of degrees to be used. The number of degrees should be optimal. If there are too many degrees, the distinctions may be meaningless. Also, if no job falls within the degree, the steps are probably too narrowly defined. Each degree is assigned points. Experience of evaluators including company personnel and researchers is very useful in deciding degrees of each factors for different jobs. Thus point values are assigned to degree of each factor by the consensus of experts.

In this study 6 degrees were deemed to be optimal for the purpose. The values for lower most grade i.e., grade 1 is obtained from weight age of each sub-factor as shown in Table 2. The arithmetic progression (with common difference of 20) was used to assign point values to various degrees of each sub-factor (Table 3).

Table1 List of key Job factors and point values

S. No.	Job Factors	Weightage (Point value)	Category
1	Education	10	Skill
2	Intelligence	10	
3	Experience	20	
4	Physical	14	Effort
5	Visual and Mental	14	
6	Monotony of Work	3	
7	Work of Others	3	Responsibility
8	Product and Raw materials	6	
9	Equipment/Tools	5	
10	Safety of others	3	
11	Feeding related centre	2	
12	Value addition	6	
13	Job conditions	2	Working Conditions
14	Occupational Hazards	2	
	Total	**100**	

Table2. Points values assigned to Degrees of respective Sub-Factors

	Factors	Codes	Degrees					
			1	**2**	**3**	**4**	**5**	**6**
	Skill							
1	Education	S1	10	30	50	70	90	110
2	Intelligence	S2	10	30	50	70	90	110
3	Experience	S3	20	40	60	80	100	120
	Effort							
4	Physical	E1	14	34	54	74	94	114
5	Visual and Mental	E2	14	34	54	74	94	114
6	Monotony of Work	E3	3	23	43	63	83	103
	Responsibility							
7	Work of others	R1	3	23	43	63	83	103
8	Product and Raw material	R2	6	26	46	66	86	106
9	Equipment/ Tool	R3	5	25	45	65	85	105
10	Safety of Others	R4	3	23	43	63	83	103
11	Feeding Related Centre	R5	2	22	42	62	82	102
12	Value Addition	R6	6	26	46	66	86	106
	Working Conditions							
13	Job conditio	W1	2	22	42	62	82	10
	n							2
14	Occupational Hazard	W2	2	22	42	62	82	102

Higher degree means greater capabilities are required. Each job position is evaluated and appropriate degrees are assigned to all 14 factors. As each degree of skill is associated with certain points, the summation of points was then used to classify jobs under different grades.

Once the grading of jobs was done a wage structure is proposed based on the prevalent pay scales in other companies of same industry in the region. Following above method a job evaluation plan for the company was established.

DATA ANALYSIS AND RESULTS

As mentioned earlier, the job evaluation plan for the company is based on the point rating scheme. In this plan 34 job positions have been evaluated using a set of 4 job factors viz. skill, responsibility, effort and working conditions which can be further classified under 14sub- factors.

GRADING OF DIFFERENT JOB POSITIONS

The requirements of jobs listed in Table 3 are described in detail and relevant job description and job specification are prepared. Each task described in job description is rated one factor at a time, in accordance with the plan. The point are then assigned and added together. The total is the evaluated point score for the given job. This is presented in Table 4.

Maximum points a job can get is 1500 which is possible only in the case when a job requires all the factors with six degrees of importance. However, in this research the point values of jobs lie in the range of 200-720 (Table 4).

Table 3 Summation of Points for different job positions

Job No.	Title	Point Values	Job No.	Job Title	Point Values
1	Packers	**200**	18	Fork Lifter	**480**
2	Compound cleaning worker	**240**	19	Die room helper	**500**
3	Plastic solvent worker	**240**	20	D G Room operator	**500**
4	Packers (semi-skilled)	**280**	21	Welder	**500**
5	Store room workers	**280**	22	Crane operator	**520**
6	Tie pat extrusion machine helpers	**320**	23	Electrician	**520**
7	Extrusion machine helper	**320**	24	Plastic solvent operator	**560**
8	D G room helpers	**320**	25	Belling machine operator	**620**
9	Injection Moulding machine helper	**320**	26	Lathe machine operator	**620**
10	Trolley Drawer	**340**	27	Suction machine operator	**620**
11	CNC Helper	**380**	28	Quality control supervisor	**640**
12	Grinding Operator helper	**400**	29	CNC operator	**640**
13	Mixer loader	**400**	30	Grinding zone operator	**640**
14	Lathe machine Operator helper	**400**	31	Die room Operator	**660**
15	Suction machine operator helper	**400**	32	Extrusion machine operator	**660**
16	Quality control helper	**440**	33	Mixer operator	**700**
17	Belling machine Helper	**460**	34	Injection moulding machine operator	**720**

Since moving from one job classification to another constitutes a promotion, management should give careful thought to the number of job classifications it establishes. If there are too few classifications, it will be hard to promote employees and difficult to give them the feeling that they are moving ahead. On the other hand if there are too many grades, every time a worker changes his/her work slightly, he/she may move into a different job classification with a different rate of pay and it is likely to create extra expenses and confusion in the company.

It is rather common under job evaluation systems that instead of separate wage rates for each job, jobs with roughly similar point totals are included into same job classifications (sometimes called labour grades). Each of these labour grades receives the same rate of pay.

After calculating the point values for all 34 job positions, the job grades determined on the basis of changing gradient of the curve. It can be seen from figure 2 that there are six number of grades. The job grades and their corresponding point value range in terms of evaluation points and distribution of the number of jobs (which are evaluated according to the job grades) are presented in Table 5.

Table 4. Point Value Range and Job grades

Point Value Range	Job Grades	No. of jobs
200-290	I	5
91-360	II	5
361-450	III	6
451-590	IV	8
591-650	V	6
651-740	VI	4
Total		**34**

ESTABLISHMENT OF PAY STRUCTURE

Fig. 2 illustrates the point values of jobs plotted against job position serial number in which job positions are written in ascending order of point values. The curve can be roughly divided into six levels of grades of jobs based on sudden changes in gradient. It is desirable that there should be a separate grade wherever the curve changes its slope.

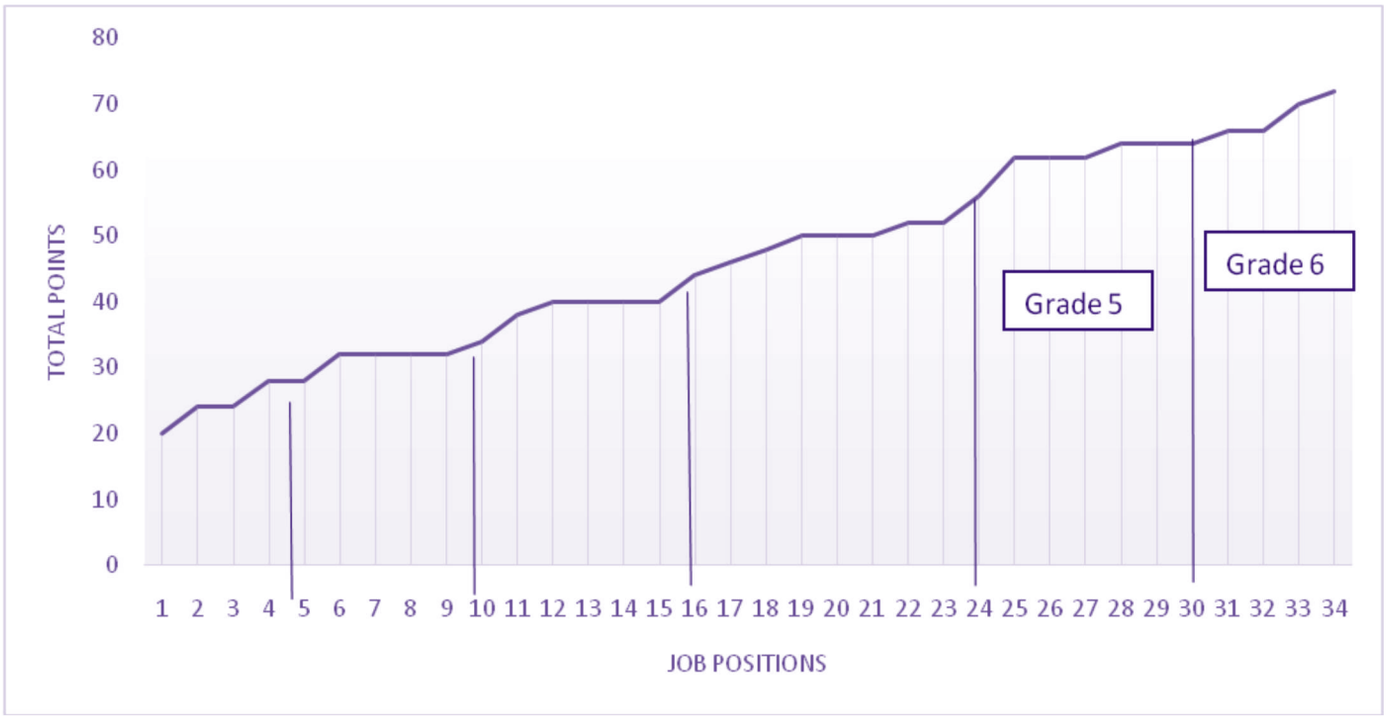

Fig.2 Job positions and Point Values

PROPOSAL FOR A NEW WAGE RATE PLAN

Analysis of job evaluation helps in designing new wage rates and salary structure for the jobs under study. The nest important task is to suggest wage rates for different grades. Data about the prevalent wage rates was collected and their median value was decided to be proposed wage rates.

Grade	No. of Jobs	Point Range	Monthly wage rate in INR	Approximate Daily wages in INR
I	5	200-280	4190-6500	139-216
II	5	320-340	5000-7500	181-250
III	6	380-440	6120-8800	104-293
IV	8	460-560	6890-10000	229-333
V	6	620-640	8550-11400	285-380
VI	4	660-720	8970-13200	299-440
Total	**34**			

Table 5 Suggested Wage rates

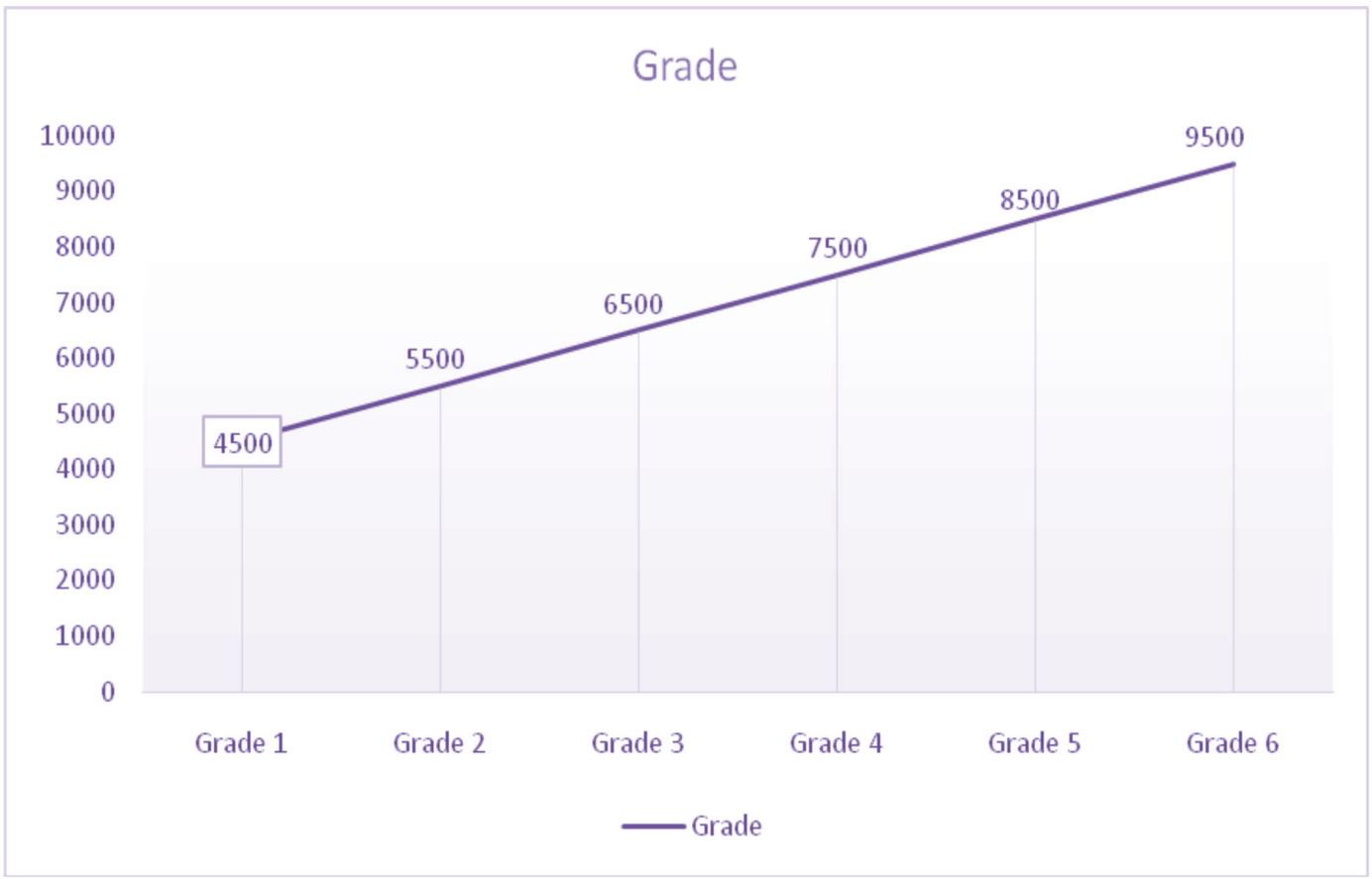

Fig. 3 Prevailing job rates in the market

The implementation of the wage structure in any organization is generally dependent on the bipartite agreement between labour force of the factory and its management. The major reasons of disagreement could be the difference in perception of the two in deciding the degree of a job position which is biased on the job requirement.

CONCLUSION

In this paper the authors have discussed application of job evaluation in a PVC pipe manufacturing company. The point rating method has been used in evaluating the jobs. In all 34 job positions are identified which are classified under six grades. New pay structure has been proposed to be implemented. This pay structure is likely to provide a logical basis for job classification and remove the ambiguity in the organization.

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