Analytical Method of Job Evaluation for Humanitarian Actors in Health Sector of Pakistan

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Abstract: *This study includes the design and application of a job evaluation design in a Humanitarian setup in Health Sector of Pakistan. The first step was the design of a system for determining the weights of job factors from sets of paired comparison decisions by considering only a small sub-sample of jobs. This was carried out in such a way that the rank order obtained from the point rating system duplicated, as closely as possible, that derived from the analysis of overall paired comparison assessments. Then, these factor weights were used to establish a factor plan, which was used to calculate the overall total point values of the jobs, within the sample, on the basis of their job descriptions by making use of the above factor plan, and a final rank order was established according to the total point values. Job evaluation was carried out by using point method. It required identifying a set of compensable factors to determine the worth of jobs. Each factor was divided into levels or degrees which were then assigned points. The points for each factor were summed to form a total point score for each category. Categories were then grouped by total point scores and assigned to wage/salary grades so that similarly rated jobs would be placed in the same wage/salary grade. Factors of point system adopted for this study were education, experience, working conditions and job status.*

Key Words: Job Evaluation, Point Rating, Health Sector, Humanitarian Actors. Regression analysis

1. INTRODUCTION

This study was carried out to consolidate information of remuneration package for major health actors in humanitarian sector and Job evaluation method for future humanitarian response by category and by province. The purpose of this study was to harmonize salary package by job/task across provinces and to address the challenge of high turnover of staff during emergencies.

The objective was to produce a factor plan from the analysis of subjective paired comparison decisions through a study of a small sample of a total number of 16 organizations. These organizations include International Non-Government Organizations (INGOs), Non-Government Organizations (NGOs), United Nations (UN) organizations and Government organizations. This method would be used, in turn, to determine the point values for each job within the population, which would enable ranking and grading of the jobs, so that it would be possible to construct a payment system based on these grades.

This study provided a detailed account of the design of a system for determining the weights of such factors, and the levels within each factor, Benchmark jobs were evaluated to determine Job Evaluation Point totals. Regression analysis was carried out to find the pay line for the benchmark categories

1.1 Rationalization of the Method

The essential requirement for any job evaluation technique is the preparation of job descriptions. The objective of describing jobs in detail is to establish clearly their work contents and requirements for their satisfactory execution so that subsequent evaluations are not based on assumptions or inadequate understanding of jobs, but on facts.

In collecting information about a job, account is normally taken not only of the content of the job, but also of wider considerations: such as, the purpose of the job; any limits in the accuracy

necessary to its proper performance; the environment and conditions of the job; tool and equipment needs of the job; necessary contact with other people; and supervisory as well as financial responsibility.

Although techniques available were large in number and vary in application, it was possible to classify them under four basic categories, as shown in Table 1, according to how jobs were analyzed and how the grade structure was developed (Maynard (1971), s. 6.94):

Table 1. *Classification of Job Evaluation Techniques*

Method	Non - Analytical	Analytical
Builds Structures From The Job	**Ranking** • Simple Ranking • Paired Comparison • Single Factor Correlation • Time Span	**Point Rating** • Point Rating • Job Profile
Defines Structures and Slot In the Jobs	**Classification** • Grade Description	**Comparison** • Factor Comparison

1.2 Point Method

The point method is widely used. It requires identifying several compensable factors (like skills and responsibility) each with several degrees and also the degree to which each of these factors is present in the job. A different number of points are usually assigned for each degree of each factor. So once we determine the degree to which each factor is present in the job, we need only add up the corresponding number of points for each factor and arrive at an overall point value for the job.

Following steps were involved in this method:

Determine Clusters of jobs to be evaluated: because jobs vary widely by department, we usually will not use one point rating plan for all jobs in the organization. Therefore the first step is usually to cluster jobs, for example into shop jobs clerical jobs, sales jobs, and so forth.

Collection of job Information: This means performing a job analysis and writing job descriptions and job specifications.

Selection of compensable factors: Here select compensable factors, like problem solving, physical requirements or skills. Each cluster of jobs may require its own compensable factors.

Defining Compensable factors: next, carefully define each compensable factor. This is done to ensure that the evaluation committee members will each apply the factors with consistency.

Defining factor degrees: Next define each of several degrees for each factor so that raters may judge the amount or degree of a factor existing in a job. Thus, for the factor complexity we might choose to have six degrees ranging from seldom confronts new problems through uses independent judgment. The number of degrees usually does not exceed five or six and the actual number depends mostly on judgment. Thus, if all employees either work in a quiet, air conditioned office or in a noisy hot factory then two degrees would probably suffice for the factor working condition. You need not have the same number of degrees for each factor and you should limit degree to the number necessary to distinguish among jobs.

Determining relative values of factors: The next step is to decide how much weigh (or how many total points) to assign to each factor. This is important because for each cluster of jobs some factors are bound to be more important than others. Thus, for executives the mental requirements factor would carry far more weight than would physical requirements. The opposite might be true of factory jobs.

The process of determining the relative values or weights that should be assigned to each of the factors is generally done by the job evaluation committee. The committee members carefully study factor and degree definitions and then determine the relative value of the factors for the cluster of jobs under consideration.

Method for doing this was as under:

First assigned a value of 100% to the highest ranking factor. Then assigned a value of the next highest factor as a percentage of its importance to the first factor, and so forth For example,

Decision making 100%

Problem solving 85%

Knowledge 60%

Next sum up the total percentage (in this case 100% + 85% + 60% = 245%).

Then converted this 245% to a 100% system as follows:

Decision making: $100 \div 245 = 40.82 = 40.8\%$

Problem solving: $85 \div 245 = 34.69 = 34.7\%$

Knowledge: $60 \div 245 = 24.49 = 24.5\%$

Assigning point values to factors and degrees: In total weights were developed for each factor in percentage terms. Now assign points to each factor as in Table. For example suppose it is decided to use a total number of 500 points the point plan. Because the factor decision making had a weight of 40.8% it would be assigned a total pf 40.8 x 500 = 204 points.

Thus, it was decide to assign 204 points to the decision making factor. This automatically means that the highest degree for the decision making factor would also carry 204 points. Then assign points to the other degrees for this factor, usually in equal amounts from the lowest to the highest degree. For example divide 204v by the number of degrees, (say 5) this equals 40.8. The lowest degree here would carry about 41 points. The second degree would carry 41 plus, 41 or 82 points. The third degree would carry 123 points. The fourth degree would carry 164 points. Finally, fifth and highest degree would carry 204 points. Do this for each factor.

Writing the job evaluation manual: Developing a point like this usually culminates in a point manual or job evaluation manual. This simply consolidates the factor and degree definitions and point into one convenient manual.

Rating the Jobs: Once the manual is completed the actual evaluations can begin. Job evaluation committee uses the manual to evaluate jobs. Each job based on its job description and job specification is evaluated factor by factor to determine the number of point that should be assigned to it.

1.3 Paired Comparison

In this technique, jobs are compared in pairs. A job can have a higher ranking than the other of the pair; a lower ranking; or the same ranking with respect to its relative worth to the establishment. Finally, the resultant rank order can be used as a guide for determing the number and limits of pay grades.

The advantages of this technique lie in the ease with which a resultant ranking and a point score for each job can be produced. It avoids some of the difficulties confronted in basing job structures on predetermined factors. It introduces a kind of builtin-check while retaining basic simplicity of ranking even though the mathematical techniques, used in developing the factor plan, make it difficult for laymen to understand the details of its application.

As more people participate in the applications of job evaluations that use paired comparisons, these ensure, better than other techniques, that the results reflect a consensus of views. One possible disadvantage is the subjectivity involved in assessments, since assessments are based on opinion. Therefore, the analysts must check for consistency and possible bias, so that the effects of this subjectivity are minimised. Another disadvantage could be that the number of comparisons to be made grows too large as the number of jobs under consideration increases. For N jobs, the number of comparisons is equal to N? (N-1)/2. Techniques have been devised to overcome this difficulty by using a computer program for the analysis. This particular study is another attempt in the same direction, in that it only considers a small sample of jobs that are analysed in pairs to establish a factor plan, so that it could be used to evaluate all jobs, including the remaining ones.

Jobs are compared in pairs with respect to their relative worth to the establishment. As a result of each comparison, a job can have a score of \2" if it ranks higher than the other \0" if it ranks lower; and \1" if it ranks the same. A computer program can, then, be written to produce the total score that each job attains and a consistent rank order based on these scores. From this rank order, it is possible to construct an acceptable grade structure by taking into account the total score of each job in the sample. The remaining jobs can then be slotted in the structure by a classifications approach.

2. METHODOLOGY

The overall survey methodology was based on both quantitative and qualitative instruments. Structured questionnaires for the employers and employee's survey and guidelines for the Focus Group Discussions and guidelines for key informant interviews were developed. The evaluation approach was a consultative and based on participatory process involving the participating organisations management and staff.

2.1 Development of Tools/Questionnaire

For the Qualitative part guidelines for Focus Groups were developed meeting the requirement of the study. After finalization of the questionnaire, these guidelines were revised and finalized. A set of questions was also developed for the key informants and stakeholders. These were modified according to the need.

2.2 Sample

Multi stage random sampling technique was used to select 16 organisations. First organisations were divided into INGOs, NGOs, Government Departments, donor organisations and UN agencies. At the second stage representative sample of each category was selected.

2.3 Data Collection

Employer data collected: 13 Entities
Employee data collected: 153 Respondents
Number of FGDs conducted: 12

2.4 Job Evaluation Components

Job evaluation was carried out by using point method. It required identifying a set of compensable factors to determine the worth of jobs. Each factor was divided into levels or degrees which were then assigned points. The points for each factor were summed to form a total point score for each category. Categories were then grouped by total point scores and assigned to wage/salary grades so that similarly rated jobs would be placed in the same wage/salary grade. Factors of point system adopted for this study were education, experience, working conditions and job status.

Following factors of point system were adopted for this study:

- Education (MBBS, FCPS, FRCS/MD)
- Experience (Less than 2 Years, 3-5 Yrs, 6-10 Yrs and above 10 years)
- Working Conditions: Red Zone (Difficult on the basis of Location, Province and shift)
- Orange Zone (Less difficult) and Green Zoon (Easy/ normal)
- Job Status (Daily wager, Contract and Permanent)

Detail of factors and their weight, portion and score allocated were as under:-

Factors	Weight of each factor %	Portion of each factor in all factors	Scores allocated out of 500
Experience	100	36	179
Education	70	25	125
Working condition	60	21	107
Job status	50	18	89
Total	280	100	500.0

A matrix was than created of points for the degrees of each factor; case in point of a doctor was as under:

- 1st degree = 45 points
- 2nd degree = 89 points
- 3rd degree = 134 points
- 4th degree = 179 points

Based on factor / degree as mentioned above marks allocated were as under:

Factors / Degrees	1st	2nd	3rd	4th
Experience	45	89	134	179
Education	42	83	125	
Working conditions	36	71	107	
Job Status	30	60	89	

Benchmark jobs were evaluated to determine Job Evaluation Point totals

- Profession by doctor = 500

Salary survey data Collected on the benchmark categories

- Any doctor with 500 points

Regression analysis was carried out to find the pay line for the benchmark categories

- Dependent variable was salary survey data
- Independent variable was job evaluation point total
- Salaries were calculated for benchmark jobs using the regression equation
- Salary = 252*JE Total

Example: Doctor Max = 252*500 = 126000

Regression analysis was carried out to find the pay line for the benchmark categories…

- Salary = 252*JE Total

Example: Doctor Max = 252*500 = 126000
Doctor Mid = 252*325 =   81900
Doctor Min = 252*152 =   38304

3. SUMMARY OF FINDINGS AND INTERPRETATIONS

The study proposed job evaluation using point method, which required identifying a set of compensable factors to determine the worth of jobs. Each factor was divided into levels or degrees which were then assigned points. The points for each factor were summed to form a total point score for each category. Categories were then grouped by total point scores and assigned to wage/salary grades so that similarly rated jobs would be placed in the same wage/salary grade. Factors of point system adopted for this study were education, experience, working conditions and job status.

Job evaluation for the humanitarian workforce was adopted by using SPSS. Analysis was performed in two stages. First of all the salary was regressed on the four following factors:

I. Experience
II. Education
III. Working zones
IV. Job status

After that scores for these four factors were added together and the salary was regressed on total score. The coefficient of model with total score as independent variable was used to calculate the salary for each category. Scoring system was same for each category in experience, working zones and job status, but varied for education.

The regression for four factor's scores as independent variables was fitted to see the coordination of score within given data. It was observed that the data were having poor coordination with scoring system. Staff with highest scores was having least salary and those having least score were receiving maximum salaries. The most of specialists were having MBBS as their highest qualification. Similarly majority of the nursing and technical staff were not having proper education, relevant to their field.

The scores within data set were categorized in three levels, minimum, middle, and maximum. The salaries were calculated for these three points by using regression model with total score. The maximum possible score for any category was 500, and salary for each category was also calculated at this score as maximum possible. These four scores and salaries for all categories were summarized in table 8 along the multiplier as "change per score".

Details of each category are given below in tables 2 to 7.

Medical Specialist (Gynecologist + Peadriatition + Anesthetist+ Reproductive health/ Hub Incharge)

Table 2. *Scores assigned to four factors for their respective levels for the Specialists*

Factors / Degrees	1st	2nd	3rd	4th
Experience	45	89	134	179
Education	31	63	94	125
Working Zones	36	71	107	
Job Status	30	60	89	

Adj R^2 = 0.93

Table 3. *Regression coefficients for analysis performed with four factors & the total score as independent variables*

	Beta	Std. Error	t	p-value
Experience	-550.07	311.60	-1.77	0.121
Education	934.38	235.79	3.96	0.005
Job status	710.42	393.33	1.81	0.114
Working Zones	-132.91	239.77	-0.55	0.597
Regression for total score				
Total Score	263.8	27.50	9.59	0.000

Table 4. *Net salary for the specialist at three levels in given data and maximum possible*

Levels	Score	Change per Score	Net Salary
Minimum	174		45900/-
Middle	278	263.8	73335/-
Maximum	381		100505/-
Maximum Possible	500		131897/-

Security Guards

Table 5. *Scores assigned to four factors for their respective levels for the Security Guards*

Factors \ Degrees	1st	2nd	3rd	4th
Experience	45	89	134	179
Education	42	83	125	
Working Zones	36	71	107	
Job Status	30	60	89	

Adj R^2 = 0.98

Table 6. *Regression coefficients for analysis performed with four factors & the total score as independent variables*

	Beta	Std. Error	t	p-value
Experience	38.73	10.91	3.55	0.008
Education	31.90	26.38	1.21	0.261
Job status	101.08	56.24	1.80	0.110
Working Zones	44.35	40.12	1.11	0.301
Regression for total score				
Total Score	49.64	2.18	22.77	0.000

Table 7. *Net salary for the Security Guards at three levels in given data and maximum possible*

Levels	Score	Change per Score	Net Salary
Minimum	218		10821
Middle	286	49.64	14196
Maximum	354		17572
Maximum Possible	500		24819

Table 8. *Summary of scores at three levels and maximum possible score with salary for different posts*

Designation	Change per Score	Levels	Min	Mid	Max	Poss.$_{Max}$
Specialist (Gynecologist + Peadriatition + Anesthetist+ Reproductive health/ Hub Incharge)	263.80	Score	174	278	381	500
		Net Salary	45900	73335	100505	131897
Security Guards	49.64	Score	218	286	354	500
		Net Salary	10821	14196	17572	24819

As shown in the Table 8 that the proposed salary of Doctors in various specialization was varying from minimum to possible maximum in Pakistan rupees in accordance with the change per score. The minimum salary was 45900, and the maximum possible salary was Rs.131,897. Salary for a Security Guard was varying from 10821, and the maximumsr possible salary was Rs.24819 depending upon the four factors assigned.

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