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Assessment of Turkish HR Professionals on Determining the Importance of Factors in Point Factor as a Method of Job Evaluation

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Abstract
Job evaluation is a procedure for assessing the relative jobs with a view to differentiating jobs to positions. In this study, it is aimed to redetermine the importance of main and sub factors used in point factor method which is one of job evaluation methods by human resource professionals located in different sectors based on the manifacturing sector. The determining factors importance is a phenomenon open to subjective judgments. Also, with some developments such as change of technology and ways of doing business, factors weights should be redetermined or updated now and again. So, it is thought that the explore of reviews from different parties (job evaluation experts, technical managers, HR professionals, employees, etc.) about importance of all factors is very important. Accordingly, data about importance of factors were received from 40 human resource professionals through survey method and they were analyzed by analytic hierarchy process. At the end of research, similar results to job evaluation scale generated and used by Turkish Metal Industry Employer's Union (MESS) were achieved. However, it was found that "education and basic knowledge" which was the most important sub factor in job evaluation scale developed by Turkish Metal Industry Employer's Union was least important sub factor as result of study.
Keywords: job evaluation, point factor method, analytic hierarchy process, multi criteria decision making, Turkish HR professionals.

1. Introduction

The studies have been performed on job evaluation for almost a century. In the United States, attempts to establish methods for setting pay levels of employees fairly can be traced back to the early years of the federal government (Ingster, 2008, 95). In 1838, in response to reactions about pay equity from employees working in federal departments, a resolution that urged adoption of a method to assign employees to pay classes with regard to differences in the responsibilities and required qualifications of their jobs was passed by the Senate. This was called "internal equity" for determining wages. These developments were originated by E. O. Griffenhagen for the municipal service, at The Commonwealth Edison Company in Chicago in 1912 and carried to government offices and similar private companies (Lytle, 1954, 127). After the 1930s, job evaluation becoming popular in Europe was used in shoe industry in Switzerland for the first time. However, job evaluation did not attract much attention in England where many contemporary opinions resulting from United States were adopted immediately and new techniques were implemented since organizational effectiveness and more use of the labor force came into prominence after the World War II (Ataay, 2008, 344). But in United States, job evaluation applications found a widespread adoption in the private sector during World War II in response to the National War Labor Board allowing wage increases only for the purpose of correcting demonstrated inequities in wage structures (Kutlu, Ekmekçioğlu and Kahraman, 2013, 659). Now, job evaluation is a common method especially in developed economies. It is said that the most common method for determining pay is job evaluation and 75 percent of organizations in the United States benefit by job evaluation (Acar, 2007, 86).

In Turkey, job evaluation was used in Karabük Iron and Steel organizations for the first time in 1948 and then in some public instutions as Sümerbank, Mechanical and Chemical Industry (MKE) and Turkish State Railways (TCDD) (Yıldız ve Balaban, 2006, 54). When private sector has been reviewed in terms of use of job evaluation, it was seen that they took on interest after 1960s and carried into practice after 1980s. Job evaluation studies were done in some private organizations as Arçelik, Eczacıbaşı, İlaç Textiles, Turkish Cement Industry, Turkish Philips, Turkish Pirelli, Unilever and Turkey Cellulose and Paper Factories (SEKA) in 1960s. Especially a job evaluation system developed with cooperation between Turkish Metal Industry Employer's Union (MESS) and Turkish Metal Industry Labour Union in 1982 and based on in collective bargaining is a successfull example of job evaluation implementations at the level of industry (Acar, 2007, 86). Later, the usage of job evaluation became more common in the sector. Sixty-six per cent of MESS affiliated companies in which the Turkish Metal Union concluded the group collective bargaining agreement for the period 2002–24 on behalf of its members have still adopted job evaluation (Akyıldız and Güngör, 2007, 1540).

Job evaluation is a comparison method revealing differences among available jobs in a organization (Ataay, 2008, 346) and a procedure for assessing the relative jobs with a view to differentiating jobs to positions

(Heery and Noon, 2008, 246). According to the extensive report of the National Research Council of the National Academy of Sciences, job evaluation is defined process as a formal procedure for hierarchically ordering a set of jobs or positions with respect to their value or worth (Bellak, Bates and Glasner, 1983, 418). It deals with the identification of the job duties and responsibilities, job demands (physical and mental requirements) and working conditions (Eyde, 1983, 429).

Job evaluation procedures are used to order jobs hierarchically on the basis of judgments regarding their relative skills, effort, responsibility and working conditions and on this basis to group them into pay classes (Hartmann and Treiman, 1983, 410). The job structure can be done in the event of this grouping or ranking which is determining order of importance of jobs is done. Only in this case, job evaluation is said objective and scientific method. However it is said that the technique is systematic rather than scientific. It depends on the judgement of people with experience, requiring them to decide in a planned and systematic way, but it does not produce results that are infallible (Torrington, Hall and Taylor, 2008, 662).

Job evaluation is defined as judgemental, analytical, structured and job-centred process by Armstrong and Murlis (Beardwell and Claydon, 2010, 513). It is judgemental process because it always reliant on the exercise of judgement in interpreting facts and applying these to decisions. Also it is about making informed judgements based upon a structured and analytical process of gathering facts about jobs. And it is concerned with the job and not the performance of the individual (Torrington, Hall and Taylor, 2008, 662). It focuses on jobs, not on the people doing them and/or how well they do them (Beardwell and Claydon, 2010, 513). Typical job evaluation usually establishes job dimensions deemed important to the organization for compensation purposes and weights each factor prior to use in the evaluation process (Pierson, Koziara and Johannesson, 1983, 447).

The main purpose of job evaluation is to provide equal pay, achieve fairness in pay policy and increase employees' sense of fairness (Armstrong, Cummins, Hastings and Wood, 2003, 5; Torrington, Hall and Taylor, 2008, 663). Also, job evaluation is part of the process for establishing an internally aligned pay structure. Another important reason for the increased use of job evaluation is the need to comply with acts about pay equity. Other purposes about job evaluation and related pay structure can be mentioned. Any of these are (Armstrong, Cummins, Hastings and Wood, 2003, 5):

- establish the relative value or size of jobs, ie internal relativities,
- produce the information required to design and maintain equitable and defensible grade and pay structures,
- provide a basis for grading jobs within a grade structure, thus enabling consistent decisions to be made about job grading,
- ensure that the organization meets ethical and legal equal pay for work of equal value obligations.

In addition to these purposes, a large number of benefits about job evaluation also can be mentioned. While any of these are about pay structure and compensation management, and others are about other human resources functions and organization subjects. Any of these as follows (Ataay, 2008, 350-351; Acar, 2007, 85; Ingster, 2008, 106; Milkovich, Newman and Gerhart, 2011, 132; Sabuncuoğlu, 2005, 229):

- Determine the basic principles of scientific and practical compensation,
- Achieve equal pay for work of equal value,
- Achieve fairness in pay policy since the wages are determined according to job,
- Provide employee motivation because disputes and grievances over pay are reduced and sense of fairness is increased,
- Compensate employees according to characteristics of labour supply and demand,
- Ease audits related labour costs,
- Contribute to pursuing the organization's strategy and achieving its objectives,
- Support work flow integrating each job's pay with its relative contributions to the organization and helping set pay for new, unique or changing jobs,
- Contribute recruiting and selecting people who could perform the required tasks,
- Provide information for other human resources functions as training and development, career management and occupational safety and health.

There are a number of different techniques of job evaluation including "non-analytical" schemes that compare whole jobs and "analytical" schemes that compare jobs on the basis of their component element or factors (Heery and Noon, 2008, 247). Four job evaluation methods taken part in literature as classic methods continue to be the dominant techniques used (Ingster, 2008, 96). Two of these, Job Ranking and Job Classification methods, were entered into the application in last part of 1800s. Factor Comparison as other method was developed by Eugene J.

Benge in 1926 and Point-Factor Method commonly used was developed by Merrill R. Lott in 1924 (Acar, 2007, 98). Ranking and Classification Methods called non-analytical schemes enable whole jobs to be compared in order to place them in a rank order or a grade – they are not analyzed by reference to their elements or factors (Armstrong, 2009, 761). Ranking Method involve comparing whole jobs with one another and arranging them in order of their perceived value to the organization. It may be an easy method but it cannot be used to deal with equal pay for work of equal value issues and it is not acceptable as a defense in an equal pay case (Armstrong, Cummins, Hastings and Wood, 2003, 20). Job Classification (or Job Grading) is a simple, widely used method in which raters group or categorize jobs into groups according to value or importance of jobs (Acar, 2007, 108). It is easy method because employers usually end up grouping jobs into classes regardless of the evaluation methods. However it is difficult to write the class or grade descriptions, and considerable judgment required to apply them (Dessler, 2011, 426). The Factor Comparison Method called analytical scheme compare jobs factor by factor using a scale of money values to provide a direct indication of the rate for the job (Armstrong, 2009, 761).

2. Point-Factor Method

Other one of analytical schemes is Point-Factor Method. Point-Factor Method the most widely used of the dominant methods provides a capability to job evaluators of quantifying their judgments about the relative worth of various aspects of jobs by assigning points to those judgments (Ingster, 2008, 100). It was used by a large number of employers (by 70 percent of the respondents to the e-reward 2007 job evaluation survey who had job evaluation schemes) and it has a tendency to be perceived as being a more scientific method than non-analytical schemes for its reliability in generating approved results (Armstrong, 2009, 758; Kutlu, Ekmekçioğlu and Kahraman, 2013, 659). It is based on breaking down jobs into factors or key elements. It is assumed that each of the factors will contribute to job size and is an aspect of all the jobs to be evaluated but to different degrees (Armstrong, Cummins, Hastings and Wood, 2003, 12).

In general, there are certain steps in the process of designing a point scale for evaluating jobs in a Point-Factor Method (Armstrong, 2009, 759; Armstrong, Cummins, Hastings and Wood, 2003, 12-13; Ingster, 2008, 101; Acar, 2007, 117; Ataay, 2008, 367; Sabuncuoğlu, 2005, 236; Dessler, 2011, 426; Torrington, Hall and Taylor, 2008, 663; Milkovich, Newman and Gerhart, 2011, 139);

1- Conduct job analysis and determine job descriptions: Point Factor Method begins with job analysis. But at first, it is more appropriate that only representative sample of jobs (benchmark jobs) is analysed and identified, not all jobs. The content of these jobs is the basis for defining, rating and weighting the compensable factors.

2- Determine compensable factors and their degrees: Compensable factors played a vital role in method are core job elements or characteristics which express the demands made on jobholders in all jobs to be evaluated as the level of responsibility, knowledge and skill or decision making. These factors should be based on strategy and values of the organization, on the work performed and acceptable to the stakeholders. Typical compensable factors to be used in a Point Factor method may be skill/know-how, responsibility, effort and working conditions. Also these factors are able to subclassify and subfactors. For example, work environment and occupational hazards subfactors can be determined from working conditions factor.

After the compensable factors have been determined, each factor is divided into a hierarchy of levels. These levels usually called degree of the factor are defined to provide guidance on deciding the degree to which they apply in a job to be evaluated. The number of levels depends on the range of demands or degrees of responsibility in a particular factor.

3- Weight the factors and degrees, develop the evaluate scale: After the degrees have been assigned, the factors can be weighted. Factor weights reflect the relative importance of each factor to the overall value of the job. They are often determined through an advisory committee that allocates 100 percent of the value among the factors. For example, an advisory committee can allocate 40 percent of the value to skill, 30 percent to responsibility, 20 percent to effort and 10 percent to working conditions. Then, a factor's value can be allocated among the subfactors. For example, the subfactor location can get half the 10 percent given to working conditions and the subfactor occupational hazards can get the other half.

After the weights have been determined for all factors and subfactors, all degrees belonging each subfactor can be weighted. So then, a minimum or maximum points score is allocated to each subfactor. The main principle is increasing scores when moved from lower to higher degrees, The total score for a subfactor is divided between the levels to produce the factor scale. Progression may be arithmetic, e.g. 5, 10, 15, 20, 25 or geometric, e.g. 5, 10, 20, 40, 80. For example, 4 degrees of work environment times 5 equals 20 points, and 3 degrees of occupational hazards times 5 equals to 15 points.

4- Evaluate jobs according to developed scale:

Jobs are usually evaluated by a panel including required officials according to developed scale. The panel studies the job analysis and agrees on the level and therefore the score that should be allocated for each factor and

subfactor and ultimately the total score.

Finally, all jobs are scored and these scores can be used to place the jobs in rank order. This rank order is then divided into grades to be included jobs have similar scores. All jobs within a grade will be paid within the same range of pay (Armstrong, Cummins, Hastings and Wood, 2003, 14). So, jobs with equivalent demands will receive the same basic rate of pay or be allocated to the same salary scale or pay range (Heery and Noon, 2008, 246). In this way, a rationale which helps in the design of graded pay structures actualizing equal pay for work of equal value can be provided. However, using judgments in some respects (selecting factors, weighting, etc.), causing new costs and requiring a lot of time and effort are mentioned as disadvantages of Point-Factor Method. Especially, there may be bias about the dimensions of factors selected for analysis, the relative weights assigned to these factors, the application of system and finally the salary setting procedures (Lewis and Stevens, 1990, 271). But the advantages of method far outweigh these disadvantages. It provides the only acceptable method of dealing with equal pay issues and the judgements (Armstrong, Cummins, Hastings and Wood, 2003, 16).

An example of point factor method is "Metal Industry Job Grouping System (MIDS)". "Metal Industry Job Grouping System (MIDS)" which was started to develop in 1970's and was put into practice in 1982 by Turkish Metal Industry Employer's Union (MESS) is often used as point factor job evaluation method. Metal Industry Job Grouping System was revised for adapting to new business structure. Assessment of any business title is done with 12 factors divided into four groups in Metal Industry Job Grouping System containing 409 sample job descriptions as a result of recent revision (http://www.mess.org.tr/ti.asp?eid=487&icid=0). Each job title is placed in one of nine business groups according to total score obtained with scoring 12 factors in compliance with specific criteria. Skills and qualifications required by the job increase as long as group of job titles increase. Main and sub factors used in system and their weights are shown in Table 1. (Akyıldız, 2012, 37; MESS, 5).

Table 1. Job evaluation scale developed by Turkish Metal Industry Employer's Union

Factor	**Weight**	**Sub Factor**	**Weight**
1- Skills	%40	1- Experience	%15
		2- Ability	%10
		3- Initiative and problem solving	%7,5
		4- Education and basic knowledge	%7,5
2- Responsibilities	%20	1- Working safety of others	%5
		2- Production	%5
		3- Machine and equipment	%5
		4- Materials and products	%5
3- Effort	%20	1- Physical	%10
		2- Mental	%10
4- Working conditions	%20	1- Hazards	%10
		2- Location	%10

It is aimed that these values located on Table 1 compared with the results of research done on 40 human resource professionals.

3. Analytic Hierarchy Process

Analytic Hierarchy Process was developed in the 1970s by Thomas L. Saaty is a multi-criteria decision making (MCDM) methodology. It has been used extensively for analyzing complex decisions. The approach can be used to help decision-makers for prioritizing alternatives and determining the optimal alternative using pair-wise comparison judgments (Liberatore and Nydick, 1997; Yoo and Choi, 2006).

The AHP is a selection process that consists of following steps (Saaty, 1990; Saaty, 2008; Saaty and Vargas, 2001; Lee et al., 2012)

1. Define the problem and determine the criteria. Factors and related sub factors must be correlated.
2. Structure the decision hierarchy taking into account the goal of the decision.
3. Construct a set of all judgments in a square comparison matrix in which the set of elements is compared with itself (size nxn) by using the fundamental scale of pair-wise comparison shown in Table 1. Assign the reciprocal value in the corresponding position in the matrix. For a set of n elements in a matrix one needs n(n-1)/2 judgments.

Table 2. The fundamental scale of pair-wise comparison for AHP

Intensity of Importance	Definition	Explanation
1	Equal importance	Two activities have equal contribute to the objective
3	Moderate importance	Experience and judgment slightly favor one activity over another.
5	Strong importance	Experience and judgment strongly favor one activity over another
7	Very strong on demonstrated importance	An activity is favored very strongly over another
9	Extreme importance	The evidence favoring one activity over another is of the highest possible order of affirmation
2,4,6,8	For compromise between the above values	Sometimes one needs to interpolate a compromise judgment numerically

4. Use overall or global priorities obtained from weighted values for weighting process. For synthesis of priorities obtain the principal right eigenvector and largest eigenvalue.
Matrix A=(a_{ij}) is said to be consistent if $a_{ij}.a_{jk}=a_{ik}$ and its principal eigenvalue (λ_{max}) is equal to n.
The general eigenvalue formulation is:

$$Aw = \begin{bmatrix} 1 & w_1/w_2 & . & w_1/w_n \\ w_2/w_1 & 1 & . & w_2/w_n \\ . & . & . & . \\ w_n/w_1 & w_n/w_2 & . & 1 \end{bmatrix} \begin{bmatrix} w_1 \\ . \\ . \\ w_n \end{bmatrix} = nw \quad (1)$$

$$a_{ij} = w_i / w_j, \qquad i, j = 1, 2, \ldots . n \quad (2)$$

$$Aw = \lambda_{max} w \quad (3)$$

For measure consistency index (CI) adopt the value:

$$CI = (\lambda_{max} - n) / (n-1) \quad (4)$$

Accept the estimate of w if the consistency ratio (CR) of CI that random matrix is significant small. If CR value is too high, then it means that experts' answers are not consistent (Saaty, 1990). When CR value is less than 0.10, consistency of the comparisons is appropriate (Lee et al., 2012). The CR is obtained by comparing the CI with an average random consistency index (RI).

$$CR = \frac{CI}{RI} \quad (5)$$

The following gives the average RI:

Table 3. Average RI values

N	1	2	3	4	5	6	7	8	9	10
Random Consistency Index (RI)	0	0	0.52	0.89	1.11	1.25	1.35	1.40	1.45	1,49

4. Application of Ranking Job Evaluation Factors

In this study, a research was done in order to rank job evaluation factors according to HR professionals working in different industries. Firstly, the findings of previous studies about job evaluation factors were identified by literature review. So, four main factors and twelve sub-factors determined were considered for evaluating the blue collar jobs in the firms. Participants were asked to compare the sub factor at a given level on a pair-wise basis to identify their relative precedence. 5rofessi, a questionnaire were prepared to collect data and HR professionals expressed or defined a ranking 5rofess factors in terms of importance/weights with using this questionnaire. Each 5rofessional was asked to fill "checked mark" in the 9-point scale evaluation table. The questionnaires were conducted via web based survey and paper survey between the dates 1 April – 30 May 2014

and they were answered by 40 HR professionals. Past experience and the back-ground of the professionals were utilized in the determination of the factors and 12 important alternatives to be used for factor selection were established. The backgrounds of professionals are shown in Table 4

For subjective opinions of HR professionals turn into quantitative form and calculate factors' rating, Analytic Hierarchy Process (AHP) was used. AHP is an effective decision making method especially when subjectivity exists. It is very suitable to solve problems where the decision factor can be organized in a hierarchical way into sub-factor. Also, the AHP allows group decision making. One of the main advantages of the AHP method is the simple structure.

Table 4. The backgrounds of participant (human resource professionals)

Expert ID	***Sector***	***Title***	***Experience (Years)***	***Expert ID***	***Sector***	***Title***	***Experience (Years)***
1	Manifacturing (aviation)	HR Assistant Expert	3	21	Manifacturing (construction)	HR Expert	8
2	Service (HR consultant)	Compensation Expert	7	22	Manifacturing (aviation)	Occupational Safety Specialist	2
3	Service (security)	HR Assistant	1	23	Service (publishing)	HR Expert	12
4	Manifacturing (aviation)	HR Expert	6	24	Manifacturing (metal, electric)	HR Manager	20
5	Service (retail trade)	HR Manager	10	25	Service (retail trade)	HR Assistant	1
6	Service (security)	HR Trainee	1	26	Manifacturing (aviation)	HR Supervisor	8
7	Service (banking)	HR Training Manager	17	27	Service (tourism)	HR Manager	1
8	Manifacturing (energy)	HR Director	19	28	Manifacturing	HR Expert	8
9	Manifacturing (food)	Staffing Manager	9	29	Service	HR Expert	2
10	Service (fast moving consumer goods)	HR Group Manager	14	30	Manifacturing (electric)	HR Manager	4
11	Manifacturing (food)	HR Manager	10	31	Service (logistics)	HR Manager	10
12	Service (retail trade)	HR Manager	9	32	Service (HR consultant)	HR Counselor	15
13	Manifacturing (food and chemical)	HR Manager	14	33	Service (software)	HR Expert	2
14	Service (consumer goods)	HR Expert	3	34	Manifacturing (food)	HR Training Assistant Expert	2
15	Manifacturing (aviation)	HR Expert	8	35	Service	HR Expert	3
16	Manifacturing (textile)	HR Manager	9	36	Service (retail trade)	HR Training & Development Expert	7
17	Manifacturing (cable production)	HR Director	8	37	Service (retail trade)	HR Training Expert	4
18	Manifacturing (food)	HR Manager	14	38	Service (retail trade)	HR Training Expert	1
19	Manifacturing (energy)	HR Assistant Expert	3	39	Service (retail trade)	HR Training Expert	5
20	Manifacturing (construction)	HR Manager	12	40	Service	HR Trainee	1

12 sub factor alternatives were used in evaluation and decision hierarchy is established accordingly. Decision hierarchy structure with the determined alternative factors is provided in Figure 1.

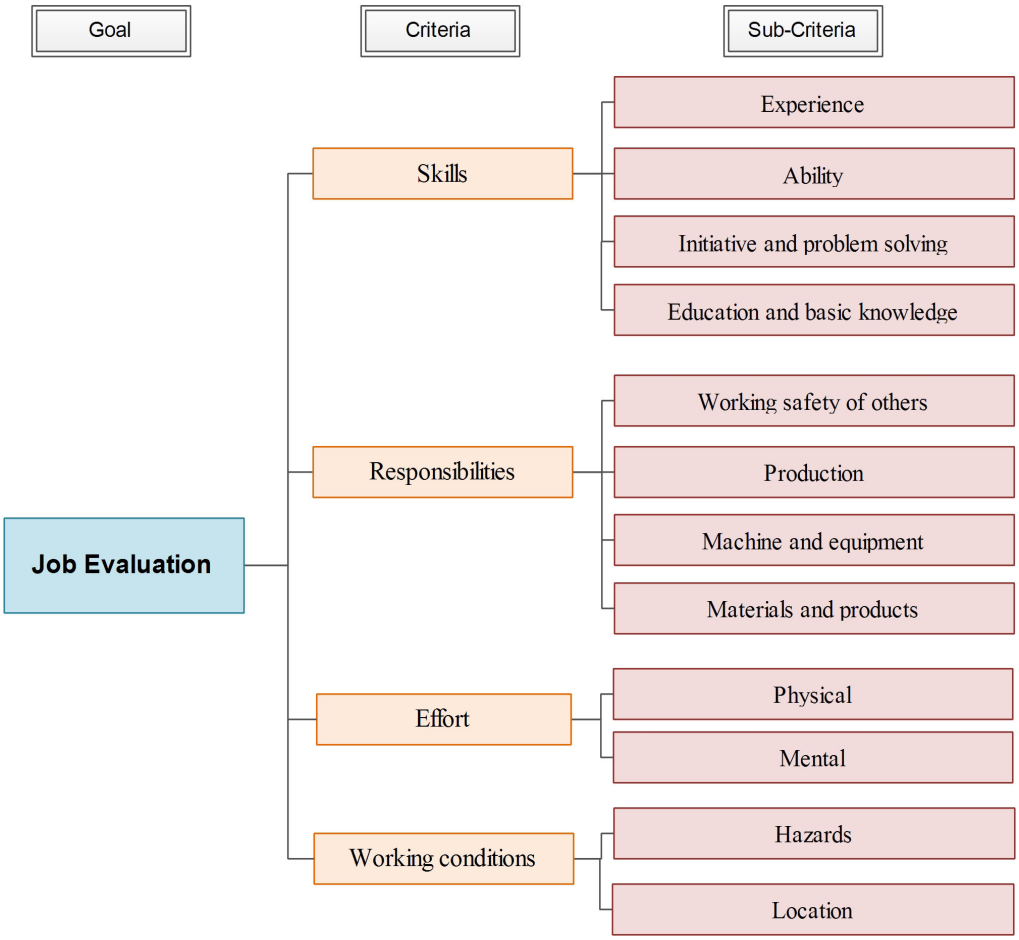

Figure 1. Hierarchical Structure for Job Evaluation Criteria

There are three levels in the decision hierarchy structured for job evaluation factors selection problem. The overall goal of the decision process is "determining job evaluation factor" and it is the first level of the hierarchy. The factor alternatives are on the second and third level of the hierarchy. After forming the decision hierarchy for the problem, the weights of the factors to be used in evaluation process are calculated by using AHP method. In this phase, the experts in the expert team are given the task of forming individual pairwise comparison matrix by using the Saaty's 1-9 scale. Geometric means of experts' choice values are found to obtain the pairwise comparison matrix on which there is a consensus.

Weights of criteria and parameters of AHP are shown in Table 5. Consistency ratios of the experts' pairwise comparison matrixes are calculated as 0.047 (main criteria), 0.002 (skills) and 0.003 (responsibilities). They all are less than 0.1. So the weights are shown to be consistent and they are used in the evaluation process. Consistency ratio can be calculated when the number of criteria is less than three. The most important main criterion is "Skills" (0.332) and the least important main criterion is "Working conditions" (0.180).

Table 5. Resulting weights, λ_{max}, CI, RI and CR values of factor and sub-factor obtained with AHP

Factor	Geometric Mean **Weight(w)**	λ_{max} CI and RI		CR	
Skills (S)	**0,332**			CR=	0,047
Responsibilities (R)	**0,289**	$\lambda_{max=}$	4,126		
Effort (E)	**0,199**	CI=	0,042		
Working conditions (W)	**0,180**	RI=	0,9		
Education and basic knowledge	**0,133**			CR=	0,002
Experience	**0,385**	$\lambda_{max=}$	4,005		
Ability	**0,284**	CI=	0,002		
Initiative and problem solving	**0,198**	RI=	0,9		
Machine and equipment	**0,193**			CR=	0,003
Materials and products	**0,158**	$\lambda_{max=}$	4,007		
Production	**0,258**	CI=	0,002		
Working safety of others	**0,391**	RI=	0,9		
Mental	**0,418**				
Physical	**0,582**				
Hazards	**0,611**				
Location	**0,389**				

When Figure 2 is analyzed, local weights of main job evaluation factors can be seen. Accordingly, "skills" (0,332) was accepted as most important main factor by participants. "Responsibilities" (0,289), "effort" (0,199) and "working conditions" (0,180) are other important main factors respectively. When these values obtained as results of study compared with the job evaluation scale developed by Turkish Metal Industry Employer's Union, it is seen that the ranking of main job evaluation factors for two scales is same. Also, it is seen that the importance weights of main factors obtained with study are too close to this job evaluation scale. Only, weight of "responsibilities" factor is found as 0,289, while its value is 0,20 in job evaluation scale developed by Turkish Metal Industry Employer's Union.

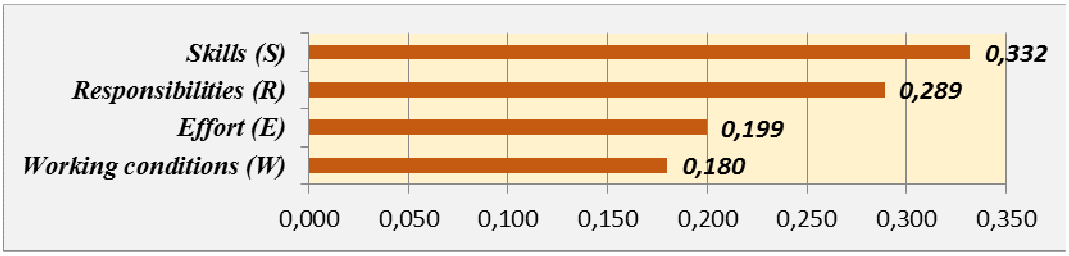

Figure 2. Resulting Weights of Main Factors Obtained with AHP

When Figure 3 is analyzed, local weights of sub factors belonging to "skills" main factor can be seen. "Experience" (0,385) and "ability" (0,284) are accepted as most important sub factors by participants. "Education and basic knowledge" (0,133) was found as least important sub factor while it was most important in job evaluation scale developed by Turkish Metal Industry Employer's Union. It can be said that this is an interesting result of study. "Experience" was accepted as more important with respect to "education and basic knowledge" sub factor by participants. Participants may have thought employee can get training through experience because of research is done considering manifacturing sector and participants evaluate all factors considering employee working in manifacturing sector.

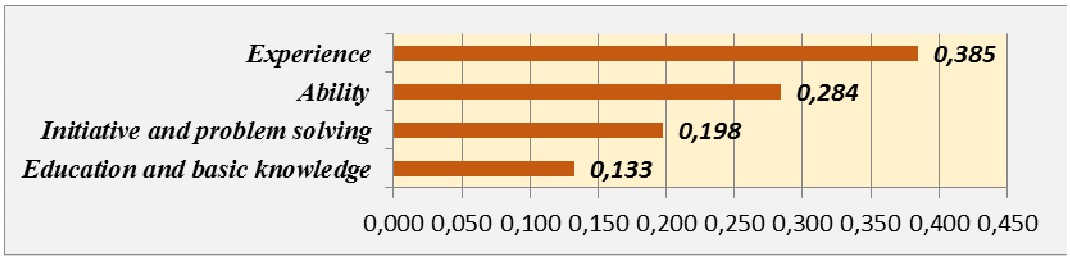

Figure 3. Resulting Weights of Sub Factors of Skills Obtained with AHP

When Figure 4 is analyzed, local weights of sub factors belonging to "responsibilities" main factor can be seen. "Working safety of others" (0,391) and "production" (0,258) are accepted as most important sub factors by participants. "Materials and products" (0,158) was found as least important. While all sub factors in job evaluation scale developed by Turkish Metal Industry Employer's Union have equal importance, it is found that "working safety of others" is most important sub factor as a result of study. "Working safety of others" is accepted more important by participants can be thought as a positive result of study.

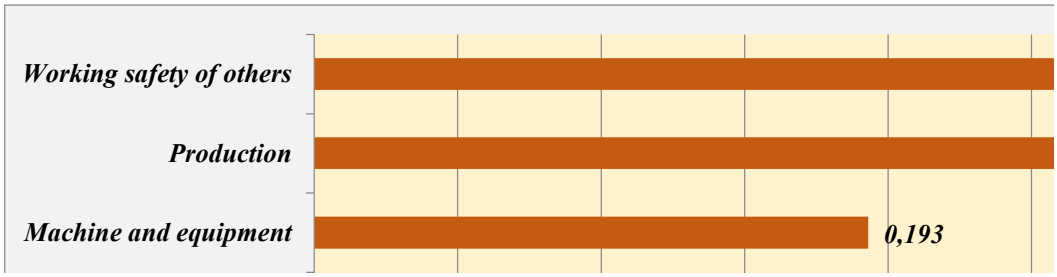

Figure 4. Resulting Weights of Sub Factors of Responsibilites Obtained with AHP

When Figure 5 is analyzed, local weights of sub factors belonging to "effort" main factor can be seen. "Physical effort" (0,582) was accepted as more important with respect to "mental effort" (0,418) sub factor by participants. Even though these sub factors have equal importance in job evaluation scale developed by Turkish Metal Industry Employer's Union, it is found that there is little importance difference between two sub factors according to result of this study. The research was done based on manifacturing sector could be considered the reason of this difference. Likewise, the participants may have thought physical effort is more important than mental effort in manifacturing sector.

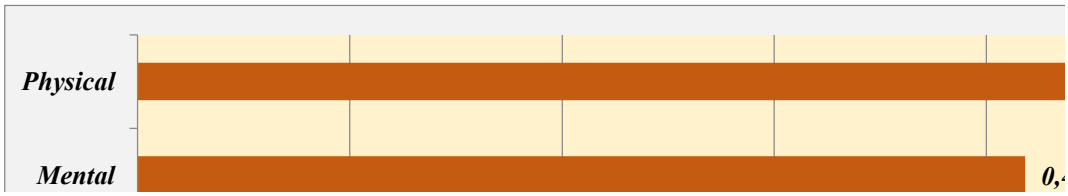

Figure 5. Resulting Weights of Sub Factors of Effort Obtained with AHP

When Figure 6 is analyzed, local weights of sub factors belonging to "working conditions" main factor can be seen. "Hazards" (0,611) was accepted as more important with respect to "location" (0,389) sub factor by participants. Even though these sub factors have equal importance in job evaluation scale developed by Turkish Metal Industry Employer's Union, it is found that there is little importance difference between two sub factors according to result of this study. The research was done based on manifacturing sector and health of employees was given more importance could be considered as reasons of this difference.

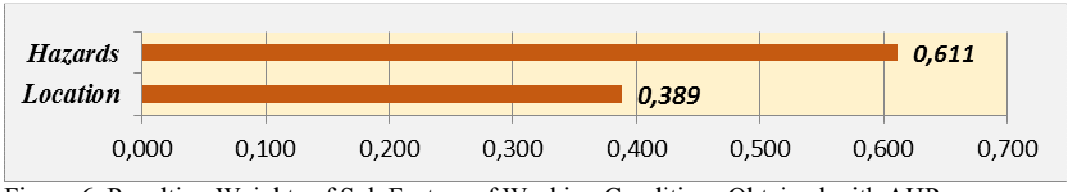

Figure 6. Resulting Weights of Sub Factors of Working Conditions Obtained with AHP

When Figure 7 is analyzed, local weights of all sub factors can be seen. Three most important sub factors used in job evaluation according to participants respectively are "experience" (0,13), "physical effort" (0,12) and "working safety of others" (0,11). "Education and basic knowledge" (0,04), "materials and products" (0,05) and "machine and equipment" (0,06) are less important sub factors with respect to others. "Education and basic knowledge" which is the most important sub factor in job evaluation scale developed by Turkish Metal Industry Employer's Union is found as least important sub factor can be thought as an another interesting result of study.

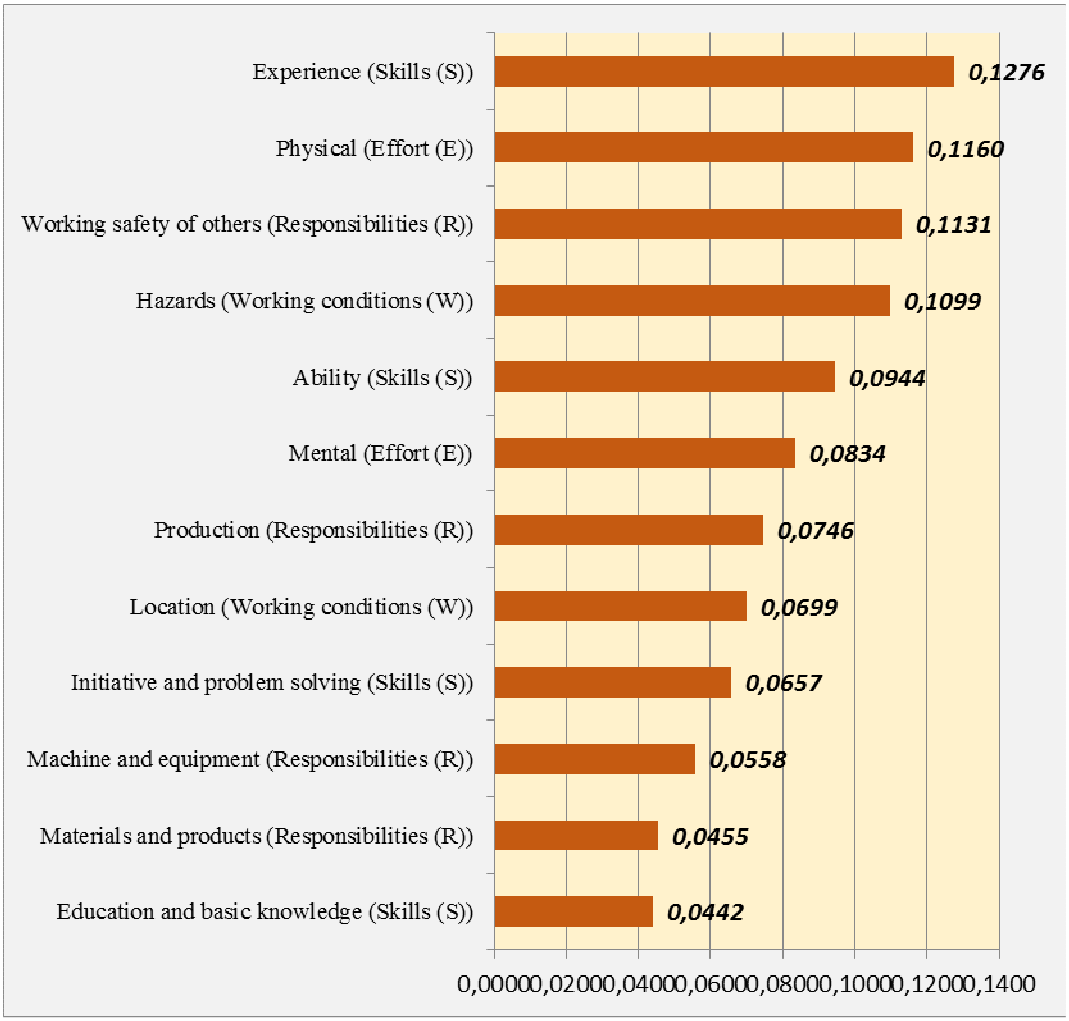

Figure 7. Global Weights of All Sub-Factors Obtained with AHP

If the local weights of all sub factors are compared with the job evaluation scale developed by Turkish Metal Industry Employer's Union, it can be said that the similar results have been achieved. The most important sub factor's value which is 0,15 in this scale was found 0,13 according to result of study. Also, the least important sub factor's value which is 0,05 in this scale was found 0,04 according to present study.

5. Conclusion

It is aimed to redetermine the importance of main and sub factors used in point factor method by human resource professionals located in different sectors based on the manifacturing sector in this study.For this purpose, data received from 40 human resource professionals was analyzed by analytic hierarchy process. It is found that the values found as a result of analysis and values in job evaluation scale developed by Turkish Metal Industry Employer's Union are quite close together. In this respect, a result corresponded to importance and ranking of main factors located on this scale was found. Such that, "skills" (0,332) was accepted as most important main factor by participants. "Responsibilities" (0,289), "effort" (0,199) and "working conditions" (0,180) have been following this main factor respectively.

When importance of the sub factors belonging to "skills" main factor are examined, it can be seen as an interesting result of study that "education and basic knowledge" sub factor which is the most important in job

evaluation scale developed by Turkish Metal Industry Employer's Union is found as least important. Also, when all sub factors are examined, it is seen that "education and basic knowledge" is accepted as least important sub factor among them by participants. Because of all factors are evaluated considering manifacturing sector, it can be thought that "experience" sub factor is accepted as more important by participants. Also, experience is given the highest importance among all sub factors. The participants may be thinking experience is more important than other sub factors for performance of jobs in manifacturing sector.

When importance of the sub factors belonging to "responsibilities" main factor are examined, it is seen that "working safety of others" (0,391) is the most important sub factor. While four sub factors belonging to "responsibilities" main factor have equal importance in job evaluation scale developed by Turkish Metal Industry Employer's Union, "working safety of others" is found as most important as a result of study. When importance of the sub factors belonging to "effort" main factor are examined, it is seen that "physical effort" (0,582) and "mental effort" (0,418) have different importance as a result of study, even though they have equal importance in job evaluation scale developed by Turkish Metal Industry Employer's Union. Accordingly, "physical effort" was accepted as more important with respect to "mental effort" sub factor by participants. The participants may be thinking physical effort is more important than mental effort because of the research was done in manifacturing sector. A suchlike result was found for "working conditions" main factor. Even though sub factors belonging to "working conditions" have equal importance in job evaluation scale developed by Turkish Metal Industry Employer's Union, it was found that they have different importance as another result of study. "Hazards" (0,611) was accepted as more important with respect to "location" (0,389) sub factor by participants. This result is similar to the result of "responsibilities" main factor. Likewise, "working safety of others" was also found as most important sub factor in there. It may be thought that health of employees was given more importance by participants because of hazards and working safety of others were accepted as more important sub factors than others.

When importance of all sub factors are examined separately, it can be said that the results of study are similar to the results of job evaluation scale developed by Turkish Metal Industry Employer's Union. Accordingly, it can be said that the most important sub factor is "experience" (0,13) and the least important sub factor is "education and basic knowledge" (0,04). If the results are examined in terms of importance, it is seen that the most important sub factor's value is 0,13 according to result of study while it's value is 0,15 in the job evaluation scale developed by Turkish Metal Industry Employer's Union. Also, the least important sub factor's value is 0,04 according to present study while it's value is 0,05 in the this scale. In this way, it can be said that ranking achieved as a result of research is different from ranking in job evaluation scale developed by Turkish Metal Industry Employer's Union.

As a result, evaluations of 40 participants are at different levels with respect to human resources, have different seniority and experience and working different sectors, about factors in point method is quite similar to results with respect to importance of factors in job evaluation scale developed by Turkish Metal Industry Employer's Union. In study, it is asked from participants that the factors are prioritized considering manifacturing sector. From this point of view, it may be useful that manifacture organizations in different branches (business lines) make some changes in their job evaluation scale considering their spesifications. Although similar results to job evaluation scale developed by Turkish Metal Industry Employer's Union are achieved, there are interesting differences on certain points. With change of technology and ways of doing business and passage of time, update of main and sub factors in job evaluation scale will be more useful. Moreover in some cases, changing, removing or replacing of main and sub factors in point factor scale will determine to achieve more positive results.

In the future, the studies in which reviews will receive from not only HR professionals but also different parties such as technical managers, related employees etc. can be done. Also similar studies can be done for sub-sectors of manifacturing sector such as construction industry, mining sector, etc. and differences between these suc-sectors may be studied. And also differences between HR professionals, technical managers or employees working in these suc-sectors may be explored. In addition to all these, similar studies can be done for other sectors such as service sector or public sector.

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