

How Determine Factor Point &Weights Objectively: A New Method

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Abstract Two main shortcomings of traditional point factor methods developed during World War II: (1) The determination of factor level & weights is absent in objectivity; (2)The important influence of external labor market on internal labor market price fluctuations has long been ignored. This paper forwards a new method to Solving above shortcomings. The main steps of new method are: (1) select some representative jobs in a firm; (2) collect average salary information of representative jobs during past recent 3 or more years; (3) assign value to point factor method's factor point &weights cyclically; (4)compute proportion structure of representative job's average salary; (5)compare ratio of deviation between step(3) and (4); (6)repeat above steps until ratio of deviation of step (5) reaching target value such as 20%. New method solves two main shortcomings of traditional point factor methods by using external labor market price information.

Key words Job evaluation; Point factor method; External labor market; Internal labor market

1 Introduction

Point factor method is most representative and most widely used job evaluation method. With competition outside firms increasing, external labor market price has more and more influence on internal labor market price since 20cen80s, traditional point factor method developing before and after world war II exposed its shortcomings, so voice of double on Point Factor Method is louder and louder, even radical voice which denying the value of Point Factor Method appeared^[1].

The discussion angles of USA academic circle and industrial circle on Point Factor Method could be divided into two facets: (1) Political and law angle, typical topics such as trade Union power be undermined or not with management practice of Point Factor Method, gender discrimination and equal pay for equal work^[2]. (2) Management technology angle, typical topics such as subjective error and control measures in method practice, reliability and validity of method.

In current and foreseeable future, because the power of trade union in China is far weak than in EU and USA, and the regulation degree of Chinese labor law on equal pay for equal work hardly be enforced, so discussions on factor point method mainly focuses on management technology angle, and so does in this paper.

2 Literature Review

2.1 Main shortcomings of traditional factor point method

The first shortcoming of traditional factor point method is absent in objectivity when determining factor point and weights.

Four components of factor point method are: evaluation factor, factor level, factor point, weight. The frame of factor point method are as following: first, designing some evaluation factors, second, dividing every factor into different levels, third, giving every level specific point, fourth, using assessment function to get a final score of target job, and corresponding to specific salary, generally the assessment function is linear assessment function.

It is obvious that by selecting different evaluation factor, different factor level, different factor point, different factor weight, numbers of factor point methods could be forwarded, incompletely enumerated as following: Geneva scheme 1950 (ILO, International Labor Organization), General Scheme (Personnel Management Office, USA federal government), NHS Job Evaluation Scheme (Department of Health, UK), Hay method, IPE (International Position Evaluation) by Mercer Management Consulting, Global Grading System by Watson Wyatt and so on.

The factor point methods above all have not given objective reasons on the determination of four components, so inevitably incur doubt on the objectivity of method itself and responding result. Of course there exists different feasibility about giving objective reason for four components of factor point method. Generally speaking, the determination of evaluation factor and factor level can hardly be given objective reason because a job can be analyzed from different views and angles. But the determination of factor point and weight should be given objective reason, or the objectivity of factor point method

should be very poor.

For example, to strength the objectivity of the determination of factor point, some designers of traditional factor point methods resort to psychology grounding. Hay method is most typical one. Hay method determines factor point difference between adjacent factor level as 15%, the psychology grounding by doing so is that Webers law says the minimum weight change percentage which most people can distinguish is 15%. Sandra Memerson points out that the incentive effect of money cannot be simply equal to physiology incentive effect^[3].

The second shortcoming of traditional factor point method is ignoring when deviation and fluctuation range of supply and demand in external labor market is rather wide, external labor market price can influence internal labor market price substantially.

Edward E. Lawler points out that traditional factor point method is applicable to highly centralized management mode before and after World War II^[4]. Facing more flexible and de-centralized management mode from 20cen 80s on, traditional factor point method is too rigid and bureaucratic, its value in management practice diminishes dramatically. Edward E. Lawler discusses from eight angles, one of eight angles is traditional factor point method totally concentrate on internal labor market and ignoring the essential existence of external labor market. Actually half century ago, Kerr & Fisher points out that traditional factor point method ignore the influence of external labor market salary level, employees groan could easily be incurred^[5].

Nina Gupta, Douglas Jenkins points out that traditional factor point method is a prior, canned method, so consistency with external market is often poor^[6].

2.2 Current practice value of traditional factor point method

Laurent Dufetel^[7] points out that giving up factor point method and totally adopting external labor market salary information to design firm internal salary inevitably faces following difficulties: (1) Firm cannot practice effective budget and control; (2) Although available convenience and transparency of salary data is so much improved compared to World War II, but there have no total transparency of salary data. When salary data from different sources exist contradiction, how solve the situation? So the salary structure which factor point method decide surely is not perfect but always has its practice value.

Kermit Davis & William Sauser^[8] point out that practice of factor point method in salary management have following merits: (1) when explaining salary difference to employees, factor point method can supply a sounding base; (2) maintaining job satisfaction and diminishing negative feeling; (3) helping firm plan and control labor cost more efficiently.

Just for above merits of factor point method, factor point method is widely used in salary management of USA and EU government or army or college at present time.

2.3 Summary

Any management method should be adapt to its times. Traditional factor point method is good during 20 cen 40, 50s because external labor market is rather stable. Since 20cen 80s, external labor market in developed countries is less and less stable due to the economy globalization. Traditional factor point method certainly faces difficulty. Sandra Memerson points out, "Managers and consultants must develop a job evaluation process that is valid and reliable. Markets are dynamic and in motion".

3 Method

In this paper, a new method is suggested to solve above shortcomings of traditional factor point method. The basic idea of new method is: selecting some representative job in a firm, objectively determining factor points and weights based on recent 3 or else years average salary information of representative jobs in external labor market. Of cause, economic cycle and industry cycle should be deleted.

The main steps of the method are as following:

- step 1. selecting some representative job in a firm
- step 2. computing recent 3 or else years average salary information of representative jobs in external labor market
- step 3. computing salary structure by recent 3 or else years average salary information of representative jobs in external labor market
- step 4. sorting evaluation factors by importance
- step 5. decomposing every representative job to specific level of every evaluation factor
- step 6. presupposing maximum value of error absolute value between value series of factor point method and series of recent 3 or else years average salary of representative jobs in external labor market such as 20%.

- step 7. making clear constraints conditions according to attributes of factor point method
- step 8. searching optimum value or satisfactory value

Constraints conditions are as following:

(a)The value interval of weights is [0, 1].

(b)The factor points are positive number and strictly **monotonic**.

(c)The maximum value of error absolute value between value series of factor point method and series of recent 3 or else years average salary of representative jobs in external labor market is 20%. Because when internal labor market price of a job is lower than external labor market price of it, employee's turnover tendency will be increasing obviously. Certainly the maximum value could be other value such as 10% and so on.

(d)When combination of factor point and weight is not unique, making choice by following rule: The sum of values of error absolute value between value series of factor point method and series of recent 3 or else years average salary of representative jobs in external labor market is minimum. The uniqueness of factor point and weight could be ensured by doing so. Of cause Delphi method could be used.

Above discussion construct an optimization problem. Many software such as Matlab or Lingo can be used to solve optimization problem. Actually, because the number of representative job and value range of other parameters are not so wide, brute-force method could be used to solve optimization problem forwarded in this paper.

Two points should be paid attention to:

(1)When selecting representative jobs, top or middle or lower job should be sampled according to random sample theory.

(2)Every scale of all evaluation factors should appear at least one time. When this rule can not be satisfied due to possible reasons, interpolation method could be used to determine non-appear evaluation factor points.

4 Data Analysis

Suppose 3 evaluation factors, the scale of all factors are same as 3 levels. $x(ij)$ denotes point of j level of evaluation factor I . The weight of $i-1$ evaluation factor is larger than i evaluation factor. Given 3 representative jobs such as A, B, C. The salaries of ABC in external labor market are 820, 1220, 2620, that is 4:6:13. The maximum value of error absolute value between value series of factor point method and series of recent 3 or else years average salary of representative jobs in external labor market is 20%.

According to different evaluation factors importance, $A > B > C$.

Searching initial value and step of weight are same as 0.1.

Searching initial value and step of factor points are same as 1.

Decomposing three representative jobs ABC to specific level of every evaluation factor as following:

Table 1 Decompositon of Three Representative Jobs ABC

A	B	C
x_{11}, x_{21}, x_{31}	x_{12}, x_{31}, x_{22}	x_{11}, x_{21}, x_{33}

Supposed a possible combination of weight appears as 0.5, 0.3, 0.2, two possible combination of factor point appears as below:

Table 2 Two Possible Combination of Factor Point When Weight=0.5,0.3,0.2

	x_{11}	x_{12}	x_{13}	x_{21}	x_{22}	x_{23}	x_{31}	x_{32}	x_{33}
Case 1	1	8	12	2	7	14	4	8	12
Case 2	1	4	8	2	7	14	6	12	20

So composite evaluation scores of job ABC under two possible combination of factor point when weight=0.5, 0.3, 0.2 are as below:

Table 3 Composite Evaluation Scores of Job ABC under Two Cases

Case 1	2.8	5.7	6.8
Case 2	3.8	5.9	10.8

The error values between composite evaluation scores of job ABC under two cases in table 3 and

series of recent 3 or else years average salary of ABC are listed in table 4:

Table 4 Ratio of Deviation Between Scores and Average Salary of Job ABC

Case 1	30%	5%	47.69%
Case 2	5%	1.67%	16.92%

Results of two cases or so-called searching middle results both satisfies constraints conditions a and b, but case 2 satisfies constraints conditions c while case 1 does not. So factor points of case 2 are more reasonable than case 1.

By repeating above steps, after all possible combinations have been computed, an optimum or satisfactory result can be reached finally.

5 Conclusion

By integrating external labor market salary information into point factor method, new method suggested in this paper solves two typical shortcomings of traditional factor point method such as (1) The determination of factor level & weights are absent in objectivity; (2) The key influence of external labor market on internal labor market has long been ignored, so induce inconsistency between external and internal fairness.

Of cause new method exists its weak points. The main weak point of new method is uncertainty of solution existence. For example when ratio of deviation is set as 20%, the solution may exists, but when restricting ratio of deviation to 10%, the solution may be not exist. But for management practice aim usage, new method is enough for most practice case.

Future work include two facets: (1) Put new method into management practice. (2) Apply research fund to model new method in a formal form.

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Mission Statements of Pharmaceutical Firms in Bangladesh: Missing Link and Probable Impact

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Abstract A well aimed and designed mission statement is required to maintain consistency and ensure unanimity of purpose in the business strategy formulation, implementation and evaluation. Unanimity of purpose is also required to develop a strong corporate culture in the competitive world. This paper deals with the content analysis of mission statement of pharmaceutical industry of Bangladesh. Product of pharmaceuticals industry is more sensitive than other industries. At the same time managers are compel to maintain quality, conduct research and ensure financial growth. This paper has identified missing links of mission statement with its probable impact also.

Key words Long range planning; Missing link; Corporate culture; Performance

1 Introduction

In Bangladesh, one of the most developed hi-tech industries is pharmaceutical. Government promulgated a Drug Control Ordinance in 1982 known as Drug Control Ordinance – 1982. After the promulgation, the development of this sector is accelerated. Basically, innovative ideas, professional knowledge and workings are the key factors for this development. Now, after fulfilling the local needs, this sector is exporting the medicine to the global market including the Europe. To survive with the competitive world market, this sector has to execute long-range planning. In modern health care organization, mission statement has begun to play an increasingly important role^[1]. To establish a forward linkage, mission statement is also important for pharmaceutical firms regarding long range planning.

2 Methodology

We have collected the mission statement of most pharmaceuticals company (fourteen) of Bangladesh from various sources like web address, personal affiliation, and annual reports etc. However, many managers, consultants and scholars use the terms mission, vision, philosophy, values, and goals interchangeable^[2]. So, we have observed all the items and the statements that leveled as “mission” and have analyzed. Where mission is not leveled we have tried to analyze the purpose, goals, products, markets, philosophy etc. whether they have mentioned or not, like Pearce and Roth^[3].

3 Mission Statement

Researchers have defined mission statement as statements of purpose, values statements, goals and strategies, corporate creed, corporate philosophy and so on. A good mission statement describes an organization's purpose, products, services, markets, philosophy and basic technology to chart the future direction of an organization. Development of an organizational mission is an essential part of strategic planning and strategic management^[4]. A mission statement establishes the values, beliefs, and guidelines for the way the organization conducts its business and determines its relationships with the stakeholders – employees, customers, shareholders, suppliers, governments, and the community^[5]. A clear mission statement can help to establish a general tone or organizational climate which can serve as a focal point for individuals to identify with the organizations purpose and direction and to indicate standards of behavior expected from them^[6].

3.1 Components of mission statement

Researchers have mentioned different opinion about the content of mission statement of organization. Bart claim to clear the firm's mission, 25 components is required^[7]. Campbell and Yeung state that an effective mission statement consists of four components; they are – purpose, strategy, behavior and value^[8]. They claim that this will bind the organization to continue together with the strong corporate culture.

However, we have tempted to analyze the content of mission statement from the perspective of