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MAKING SENSE OF WAGE AND SALARY SURVEYS

by Leonard N. Persson

A primary function of a competent program of wage and salary administration is to assure equitable rates of pay—equitable in terms of the relationships between jobs performed within the firm and equitable in comparison to work being performed by persons in other organizations. Internal equity is insured through the establishment and maintenance of a formal system of job evaluation to assess the relative value to the firm of each type of work being carried out. External equity, assuring that jobs in the firm are paid relatively similarly to like work in other organizations, requires the analysis of wage and salary survey data. The purpose of this article is to provide the reader with guidance on the effective selection and use of wage and salary surveys to assure the availability of accurate data to which the firm's rates of pay can be compared.

Why Bother with Surveys

It is very likely that few of the ten million or so businesses in the United States pay formal attention to comparative wages; this is particularly true of the small-to-medium-sized firm. But know it or not, each firm does take surveys, albeit of a highly informal nature. The firm pays attention, for example, to wage demands being made by job applicants, to the rates that resigning employees allege

they will receive from their new employers, to the general scuttlebutt about wages that is passed around at fraternal or professional society meetings, and to what is read in the newspapers or heard on radio and television. From this polyglot of "data" come decisions such as, "I guess we'd better raise our workers' pay by 25 cents if we're going to keep them here."

Despite the questionable reliability and validity of this informal survey process, the small-to-medium-sized firms for the most part succeed in attracting and maintaining a sufficient number of qualified employees to keep the firm going—but at what cost? A 25 cents per hour overpayment in a labor-intensive firm could be disastrous to the firm's ability to compete and to its long-term survival. On the other hand, a 25 cents per hour underpayment could result in increased turnover, rising recruitment costs, hiring of lower-skilled employees, increased break-in and training costs, and lowering of the total motivation level within the firm.

Pay levels that are neither too high nor too low are essential to firms of all sizes, and, while informal data sources should not be ignored in wage determination, proper administration demands the study of formal wage and salary surveys to assure external equity.

Sources of Surveys

Wage and salary surveys are readily available to every business person. For example, the regional offices of the federal Bureau of Labor Statistics maintain surveys of nationwide data, as well as information on specific

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geographic areas; these surveys are available for the asking. Furthermore, most firms are members of a Chamber of Commerce, trade or industry association, or manufacturers' association that develops survey data for its member firms. In addition, private companies, consultants, and professional societies engage in surveying. This is not to imply that the latter organizations will give away their surveys to anyone who asks for them. Usually, to receive the data a firm must have been a participant in the survey, providing its own wage data for compilation with that of the other contributors, and the firm will have agreed to maintain the confidentiality of the information in the survey.

Obtaining surveys, then, is a matter of calling associations, government agencies, and other organizations to find out what surveys are available, agreeing to participate in surveys, and agreeing to protect the security of the data received. However, the relative ease with which surveys may be obtained should not be construed to mean that all available survey data is useful—it is necessary to screen such information carefully before putting it to use.

What Surveys to Use

Of primary concern to the firm in determining what survey information is useful is the concept of "market." Each work group within the firm has its own market from which job applicants are drawn. For the clerical force this market is probably the geographic area within a relatively short commuting distance from the firm. Craft and semi-skilled workers may commute a slightly greater distance than clerical ones, but like the latter group they are unlikely to relocate for a new job. Engineers, sales professionals, administrators, and executives, on the other hand, are different in that their market is at least regional, probably

national, and possibly even international in scope.

The "market" concept naturally limits the use of some surveys. Nationwide averages of clerical salaries mean little to the geographically centralized firm, and a local survey of rates paid to digital engineers may likewise not be representative of the actual market from which engineers are drawn. Accordingly, the firm will have to use some judgment determining which surveys to use.

To illustrate this point, analysis of the firm's clerical workforce may demonstrate that 90 percent of these employees live within twenty-minutes' commuting time from the firm. For this reason it would make sense to use surveys that include salary data from firms located within this range. Two factors must be considered, however, in determining which firms are of interest: first, twenty minutes on a modern thruway is considerably farther away in miles than is twenty minutes on a congested secondary road; second, employees who commute twenty minutes to work could as easily travel from their homes in a direction away from the firm as toward it, so it is necessary to seek surveys that include firms considerably beyond the average commuting distance if the firm is to be certain of obtaining data from the appropriate market.

Other questions to consider when selecting wage and salary surveys include: Do the firm's employees sometimes quit to go to work for companies that participate in the survey, and does the firm occasionally hire employees from participating employers? Does the survey include a representative sample of competitive firms? Are the participants in the survey of roughly similar size to the firm so that comparison will not be solely to a few corporate giants? Does the average company have sufficient weight in the survey or is the information heavily

affected by a few high- or low-paying firms? Does the survey deal with a sufficient number of jobs that are similar to those in the firm? Do the participants have good, formal wage and salary programs, or are their rates the result of guesswork?

Surveys of competitive companies within an appropriate geographic market that have sound pay practices and are not unduly biased by a few large wage-leaders are prime sources for comparable wage data.

Analyzing Survey Data

Analysis of survey data first requires the selection of jobs in the survey that are similar to those in the firm. Therefore, it is necessary to study the brief job descriptions provided with the survey, compare these to the firm's job descriptions, and reject those that are not well-related. For example, if the machinists in the survey are really machine operators while those in the firm both set up and operate, the jobs are not comparable. Some organizations that conduct wage and salary surveys will require that a wage analyst visit each participating company to assure that the data reported is for truly similar work, but the time and expense of this process precludes its use in most surveys. Nevertheless, brief, accurate job descriptions should be included in both the original survey questionnaire and the final survey results because comparison based on job titles alone is likely to be highly unreliable.

Once comparable jobs have been selected it is essential to be certain that the rates of pay reported in the survey are clearly defined. Base rates, as an illustration, should not include shift differentials, overtime rates, or other premium payments; also, comparison of incentive rates to daywork rates should be avoided. The intention here is to eliminate as fully as possible the extraneous variables that will reduce the accuracy of the comparison.

From among the comparable jobs in the survey select a set of key or "benchmark" jobs for detailed analysis. These jobs should meet a number of criteria. In addition to being similar to jobs in the firm, the key jobs should be relatively stable in terms of job content and should be performed relatively similarly in surveyed firms—jobs such as clerk-typist, bookkeeper, plant guard, custodian, and truck driver tend to meet these criteria. Again, such careful job selection reduces extraneous variables that may cause wide fluctuations in rates of pay from one organization to the next.

Lastly, select surveyed jobs that are representative of the full range of work being performed in the firm. As an example, if the purpose of analyzing the survey is to review rates paid to non-exempt employees, jobs should be selected that cover a broad range of pay grades—as from clerk at the lowest level to executive secretary at the highest, with a representative sampling of those in between. They should also be selected from a number of different non-exempt job families, such as clerical, accounting, drafting, and data processing. Selection based on these criteria will assure the availability of data for comparison to most, if not all, non-exempt pay grades, and further assumes that the data will not be overly biased by labor shortages in one particular job family.

Making Sense of the Numbers

Once the surveys have been selected and the benchmark jobs picked out, it becomes necessary to choose the statistical measure upon which the comparisons will be based. Surveys typically report the following measures:

Mean: The weighted average. The mean is the most sensitive measure of the central tendency of data because any variation in the data, especially any unusually high or low numbers,

tends to be reflected in the resulting mean.

Median: That number which, when the data are arrayed from high to low, splits the data in half; in other words, that number that is larger than half the data and smaller than half the data. The median is a good measure of central tendency that is not greatly influenced by a few high or low numbers.

Mode: The number that appears most frequently. This measure is usually not of much use in wage survey analysis.

Middle 50 percent: Also termed the inter-quartile range, this measure is the range of data resulting from discarding the highest 25 percent and lowest 25 percent of the reported data.

For several reasons the ideal measure for survey comparison is the mean of the middle 50 percent of reported rates. The exclusion of the high and low quartiles eliminates from the data the trainees and persons who are grossly overpaid and with whom comparison is not desired anyway; this reduces the main drawback of the mean, its sensitivity to extremes, and yields the most accurate possible measure of central tendency for survey analysis.

By way of illustration, consider the following hypothetical array of reported survey data: \$140, 140, 140, 150, 150, 150, 160, 160, 160, 160, 170, 180, 180, 180, 190, 220. The mean reported rate in this array is \$164.38, which is somewhat higher than either the median of \$160 or the mode, also \$160. This discrepancy between the mean and the median results from the inclusion of a few very high rates, especially the one at \$220. By excluding the highest and lowest 25 percent of the data, we reduce the range of the array, which is now \$140 to \$220, down to \$150 to \$180; the mean of this middle 50 percent range

then becomes \$161.25, which is considerably closer to the median, because of the elimination of the extreme rates.

If the mean of the middle 50 percent is not provided, then the mean of the total range of data should be used. The exception to this would be when the reported mean and median for the same job are quite different, indicating that a number of extreme rates are skewing the mean; in such case it is reasonable to use the median.

An additional point—it should be recognized that survey data are often published months after being collected. In some Bureau of Labor Statistics surveys, for instance, the survey may not be made available until as long as nine months after the data were collected, and rates of pay in the market will of course have changed in that time. One way to deal with this lag for the short period is to update the survey data in proportion to the change in the cost of living, as measured by the Consumer Price Index. In this way survey data several months old may be made usable, as increases in rates of pay tend to be fairly closely correlated to increases in the CPI.

A final consideration is the possible impact of the firm's participation in the survey on the reported statistical measure. The firm obviously desires not to compare itself to itself, but rather to other firms; therefore, if the firm participated in the survey, its rates should be deleted from the reported survey data before a comparison is made. This can be done in several ways; a simplified approach is demonstrated in the following example.

Assume the survey reports a mean weekly salary for 121 clerk-typists of \$144; also assume that included in those 121 clerk-typists are 13 from your firm, for whom a mean rate of \$136 was reported at the time the

survey was taken. The mean salary for the companies excluding your firm may be calculated as follows:

$$\frac{\text{The total number of employees times their mean, divided by the number of employees reported by the other companies, or (using the data given)}}{121 (\$144 - 13 (\$136))} = \$145$$

In the example given, the mean of the rates reported by companies not including your firm would thus be \$145. Where the number of employees reported by a particular firm is a small proportion of the total, the impact of the firm's rates will be minimal. Nevertheless, this potential impact should be considered and dealt with if necessary.

Summarizing the Survey Data

It is beyond the intended scope of this paper to treat the detailed analysis of the information generated by the process described above. Generally speaking, a good place to begin a detailed statistical analysis would be a

simple summary, such as shown in Table 1, which reflects the figures resulting from abstracting data from several surveys. Analysis beyond this point might include the preparation of scatter charts, calculation of the community wage curve through use of a least-squares conversion, and other approaches.

Instead, this paper has concentrated on the need for and method of careful selection of survey data, with the intent of assuring the greatest possible degree of comparability and accuracy in the data, prior to statistical analysis. The method of selection is important because even the most careful analysis of bad data produces only more bad data. Despite the foregoing comment, however, it should be recognized that a certain degree of judgment is necessary when dealing with wage and salary surveys. Particular company conditions, industry situations, geographical considerations, and general economic factors do vary, and allowances must be made for these if the firm is to do a truly effective job of assuring wage equity.

Table 1

SUMMARY OF DATA OBTAINED FROM WAGE AND SALARY SURVEYS

Labor Grade	Firm's Job Evaluation Points	Benchmark Job Title	Survey Data			Firm's Actual Mean Weekly Salaries
			Mean of Middle 50%			
			Survey 1	Survey 2	Survey 3	
1	120	Clerk	\$131	\$127	\$126	\$117
2	147	Clerk-Typist	151	141	145	136
3	162	Keypunch Operator	170	151	150	142
	168	Junior Accounting Clerk	167	156	.....	146
	170	Switchboard Operator	.....	.....	161	147
4	193	Junior Draftsperson	173	169	171	160
	205	Stenographer	178	171	175	158
5	236	Computer Console Operator	208	176	.....	188
	236	Secretary	.....	.....	186	173
	247	Senior Clerk	176	177	.....	169
6	278	Senior Accounting Clerk	209	221	.....	201
7	299	Senior Draftsperson	210	211	227	207
	310	Executive Secretary	220	206	234	213

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