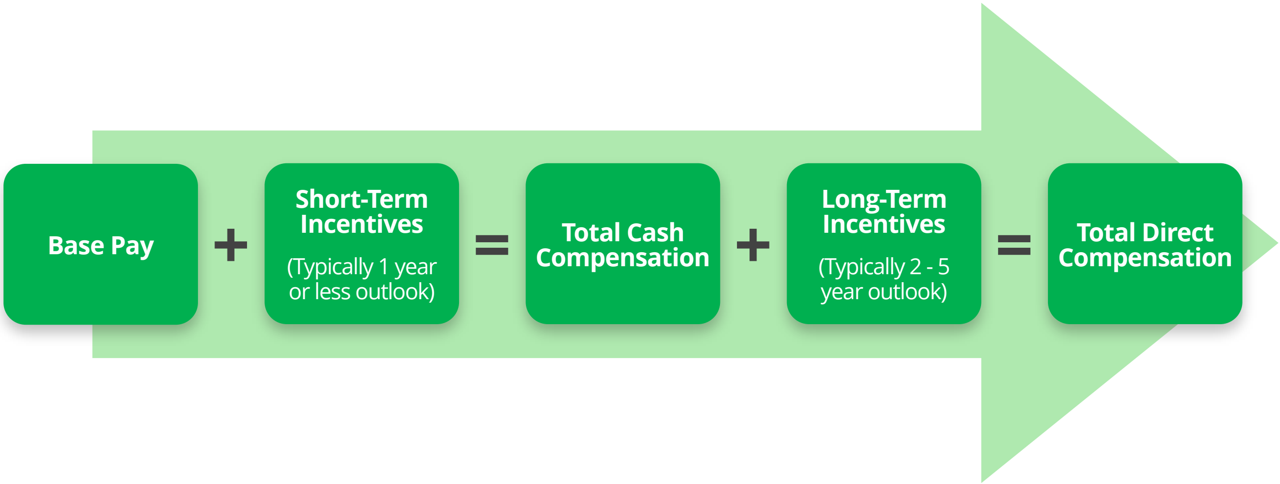
ECONOMIC RESEARCH INSTITUTE

Common Compensation Terms & Formulas

Common Compensation Terms & Formulas

ERI Economic Research Institute is pleased to provide the following commonly used compensation terms and formulas for your ongoing reference:



Aging Salary Survey Data
Age your surveys by using the annual market movement of salaries to pro-rate salary surveys from the effective date of the survey data to the desired effective date of a salary structure.

Survey Aging Factor = (# Months to Age Data/12 Months) x % Annual Market Movement of Salaries

> **Example:**
> 2% Survey Aging Factor = (8 Months/12 Months) x 3% Annual Market Movement of Salaries Survey

Compa-Ratio
A comparison of employee pay to the salary range midpoint calculated as follows:
Compa-Ratio = Employee Salary / Midpoint

> **Example:**
> 0.98 = $78,400 Employee Salary / $80,000 Midpoint
> It is expressed as a decimal (e.g., 0.98).

Compensation Mix

Compensation Mix (also known as “Pay Mix”) represents the relationship of base pay and short-term incentives to total cash compensation. This term is commonly used in sales and executive compensation plan design.

100% = (Base Salary / Total Target Compensation) + (Short-Term Incentive / Total Target Compensation)

> **Example:**
> 40% = $40,000 Base Salary / $100,000 Total Target Compensation
> 60% = $60,000 Commission / $100,000 Total Target Compensation
> **Compensation Mix = 40/60**

For example, a 60/40 plan will have 60% of total target compensation managed at base salary and 40% of total target compensation managed through a short-term incentive plan (e.g., commission).

Excel Pivot Chart — Displaying an Equation

Displaying an equation and R^2 on an Excel pivot chart can be tricky if it is not used often.
If needed, follow these instructions:

1. Click within the pivot chart
2. Under Pivot Chart Tools (top of screen), click on Design
3. Click on Add Chart Element (left side of screen)
4. Click on Trendline
5. Click on More Trendline Options
6. Under Format Trendline (right side of screen), go to Trendline Option
7. Select Display Equation on Chart
8. Select Display R^2 Value on Chart

FICA Taxation

The 3 tiers of the 2018 FICA taxes are described below:

1. 6.2% Social Security taxes on FICA wages up to the social security wage base of $128,400 for 2018 pay by both the employer and employee (12.4% in total).
2. 1.45% Medicare tax on all FICA wages paid by both the employee and employer (2.9% in total).
3. 0.9% additional Medicare tax withholding on FICA wages greater than $200,000 in a calendar year (paid by the employee).

For more information, see https://www.irs.gov/taxtopics/tc751

Grandfathering
Upon implementation of a new or revised compensation plan, grandfathering will protect the current compensation opportunity of existing employees when performing the same role in the organization. Grandfathering will support in minimizing employee relations issues to contribute to a successful program implementation.

Gross Up
A payment, such as a one-time award, may be grossed up so that an employee will receive the full amount even after taxes. In this instance, the company will bear the cost of the tax gross up.

Gross Amount = Net Amount / (1.00 — the sum of all the payroll taxes expressed as a decimal)

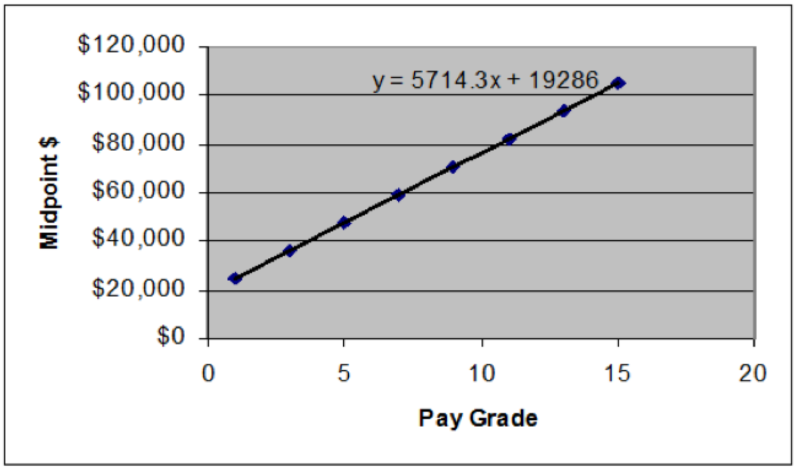
Hours of Work
Assuming a regular, full-time equivalent at 40 hours per week, there are 173.33 work hours per month and 2,080 work hours per year.

Total Hours of Work	Formula
173.33 per month	= (40 hours per week x 52 weeks per year) / 12 months per year
2,080 per year	= 40 hours per week x 52 weeks per year

Linear Regression Analysis
Simple linear regression analysis shows the relationship between an independent variable such as Pay Grade (x-axis) and a dependent variable such as Salary Range Midpoint (y-axis).

Example:

Grade	Market Rate
15	$105,000
14	?
13	$93,572
12	?
11	$82,143
10	?
9	$70,715
8	?
7	$59,286
6	?
5	$47,858
4	?
3	$36,429
2	?
1	$25,000



Midpoint $ (Y) = ($5,714.30 x Pay Grade (X)) + $19,286 (this is the amount of the Y intercept)

Market Pricing

Market pricing is a job evaluation methodology that creates a job-worth hierarchy based on the "applicable market rate" for benchmark jobs in the external marketplace relevant to the business.

Market Ratio

Market Ratio (also known as "Market Index") is a comparison of employee pay to the market rate calculated as follows:

Employee Salary / Market Rate = Market Ratio
It is expressed as a decimal (e.g., 0.98).

Mean (Unweighted Average)

Calculates the average of what ***all companies*** pay in a salary survey for a job.

Mean (Unweighted Average) = sum of all numbers in a data set / # of items in a data set

		Compensation
Company 1		$41,000
Company 2		$36,000
Company 3		$38,500
Company 4		$43,000
Company 5		$39,000
Sum of All Companies		**$197,500**
Divided By	÷	**5 Companies**
Unweighted Average		**$39,500**

Mean (Weighted Average)
Calculates the average of what ***all employees*** are paid in a salary survey for a job.

Mean (Weighted Average) = ((Company 1 Pay x # of Employees in Company 1) + (Company 2 Pay x # of Employees in Company 2) + (Company 3 Pay x # of Employees in Company 3) + (Company 4 Pay x # of Employees in Company 4) + (Company 5 Pay x # of Employees in Company 5)) / Total # of Employees Reported

	# Employees		Compensation		Total Per Company
Company 1	13	X	$41,000	=	$533,000
Company 2	15	X	$36,000	=	$540,000
Company 3	10	X	$38,500	=	$385,000
Company 4	12	X	$43,000	=	$516,000
Company 5	16	X	$39,000	=	$624,000
Total (All Companies)					**$2,598,000**
Total (All Employees)				÷	**66**
Weighted Average					**$39,364**

Median
Describes the central tendency of the data to minimize the effect of extreme values. It is the middle value in a set of ranked salaries and is also known as the 50th Percentile.

Example 1 (Odd # in Data Set):

Data – High – Low	Middle Value
$40	
$39	
$38	$38,000
$37	
$36	

Example 2 (Even # in Data Set):

Data – High – Low	Middle Value
$14	
$13	
$12	$11
$10	
$10	
$ 8	

Mileage (2018 IRS Standard Mileage Rate)

Business Travel	54.5 cents per mile
Medical Travel/Moving Costs	18 cents per mile
Charitable Mileage Rate	14 cents per mile

For more information, see
https://www.irs.gov/newsroom/standard-mileage-rates-for-2018-up-from-rates-for-2017

Mode
The number that is reported most frequently in a data set.

> **Example** (in low to high order):
> 2%, **3%, 3%, 3%, 3%**, 3.5%, 4%, 5%
> 3% is the mode because it is reported most frequently (4x)

On Target Earning (OTE)
Equivalent to total target cash compensation.

> **Example:**
> $100,000 OTE = $70,000 Base Pay + $30,000 Short-Term Incentives at Target

Percentile
A percentile of a data set will have the same percentage of data falling below it (e.g., 50th, 75th, 90th percentiles).

> To calculate a desired percentile, use the following formula:
> Desired Percentile = (# of Data Points + 1) x Desired Percentile = # from the bottom

Promotional Budgets
Approximately one-half of companies budget for promotions, while the other half of companies typically do not. When promotional increases are not budgeted, they are typically paid for from turnover, vacancies, and other compensation cost savings. A 1% budget is commonly used when budgeting for promotions.

Quartiles
Quartiles are three values obtained by dividing the sorted dataset into four equal parts. The lower or first quartile is the 25th percentile. The median or second quartile is the 50th percentile. The upper or third quartile is the 75th percentile.

Dataset	Quartile	Percentile
$120,000		
$118,000		
$115,000	**Q3**	**75th Percentile**
$112,600		
$110,000		
$108,500	**Q2**	**50th Percentile**
$107,000		
$105,300		
$104,000	**Q1**	**25th Percentile**
$101,800		
$101,500		

Range
The difference between the high and low values of a data set.

Range = High Value of Data Set – Low Value of Data Set

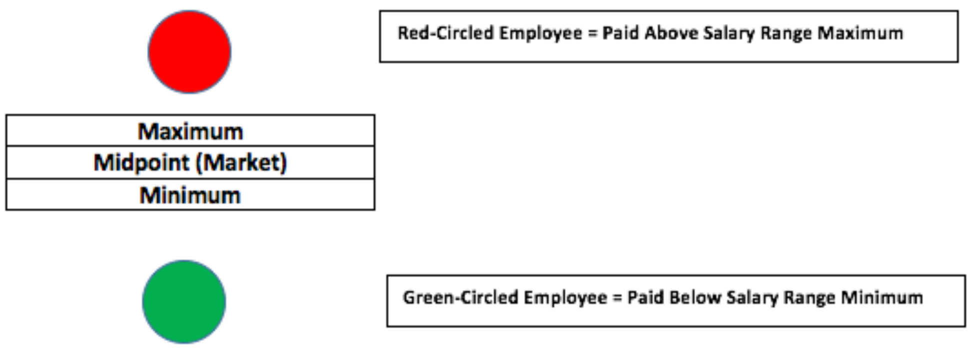
Example:
Data Set:
$25,000, $35,000, $46,000, $50,000, $63,000, $78,000, $80,000, $94,000, $100,000

Range = $100,000 High Value - $25,000 Low Value

Red-Circled and Green-Circled Employees

Red-circled employees are paid above the salary range maximum. Typically, a red-circled employee is not eligible for a salary increase until the salary range increases and exceeds the rate the employee is paid. Occasionally, a modest increase or a lump sum increases may be provided.

Green-circled employees are paid below the salary range minimum. They should be brought to the salary range minimum to ensure they are paid within the salary range.



R Squared (R^2)
R^2 is the coefficient of determination. It is a percentage that indicates how well data fits into a statistical model—sometimes simply a straight or curved regression line. A high R^2 is typically 85% to 100% and a good fit (where 100% is a perfect fit). A low R^2 of 70% or less indicates a less desirable fit of the data.

Salary Range
A salary range represents the minimum, midpoint, and maximum rates that a business is willing to pay employees performing a job. Typically, the midpoint or control point is set to provide market competitive, fair, and equitable salaries based on the competitive marketplace for a business.

Salary Range (Employee Placement)

Salary Range	Incumbents Will Typically:
Maximum	Exceed essential responsibilities over time. Ready for promotion. Highly experienced.
Midpoint or Control Point	Meet essential responsibilities over time. Fully competent. Experienced. Independent.
Minimum	Need guidance and training to learn essential responsibilities. Entry. Learner. Dependent.

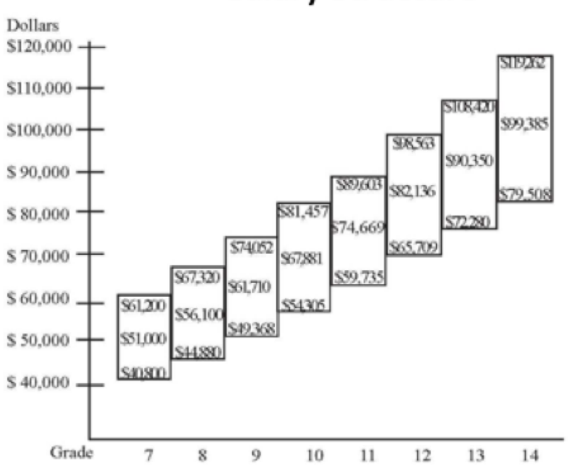
Salary Range Midpoint Progression
It is common to see salary range midpoint progressions (the percent difference between midpoints) within a salary structure as follows:

Administrative/Operative: 5-10%
Professional/Management: 10-15%
Executive: 15-20%

Example:

Midpoint Progression

Grade	Midpoint	Midpoint Progression
7	$51,000	10%
8	$56,100	10%
9	$61,710	10%
10	$67,881	10%
11	$74,669	10%
12	$82,136	10%
13	$90,350	10%
14	$99,385	10%



Salary Range Spread
It is common to see salary range spreads (the percent difference between the minimum and maximum) within a salary structure as follows:

Administrative/Operative: 40% +
Professional/Management: 50%+
Executives: 50-65% +

Salary Range Minimum and Maximum Formula
To calculate the salary range minimum and maximum from the salary range spread and midpoint (assumes a 75,000 midpoint and a 50% range spread):

Salary Range Minimum = Midpoint / (1+ 0.5 x Range Spread)
60,000 = 75,000 / 1.25

Salary Range Maximum = Minimum x (1+ Range Spread)
90,000 = 60,000 x 1.50

Salary Range Overlap

To calculate the salary range overlap:

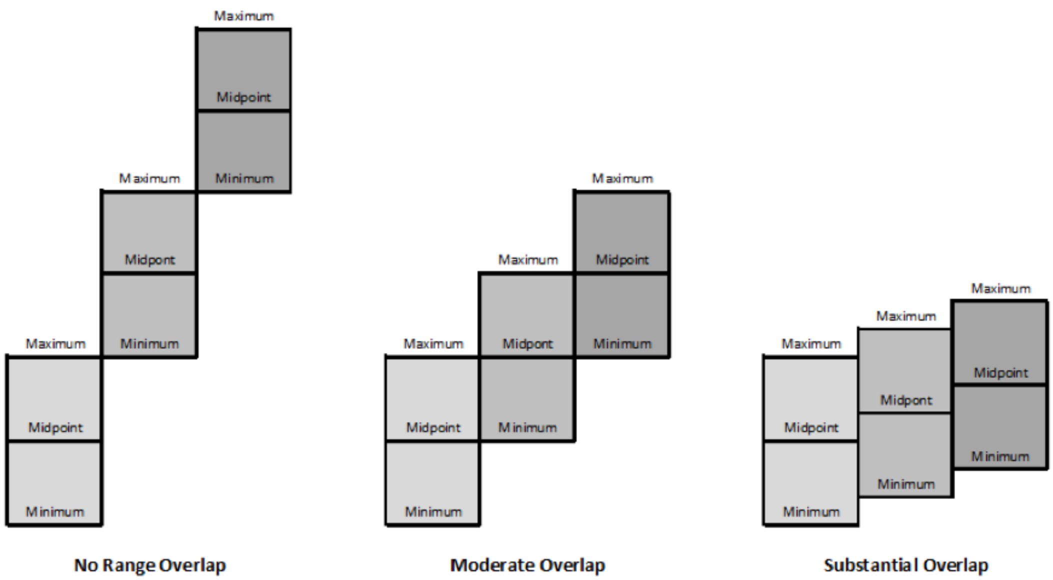
$$\text{Overlap} = \frac{(\text{Max. Rate of Lower Grade} - \text{Min. Rate of Higher Grade})}{(\text{Max. Rate of Higher Grade} - \text{Min. Rate of Higher Grade})}$$

Here are 3 examples of salary range overlap:

1st Example: 0% overlap will not work unless it is a step structure.

2nd Example: 50-60% overlap is moderate. This should be the goal of a typical salary structure.

3rd Example: Shows a substantial overlap. This would occur if there are too many salary grades or too little difference in market rates between salary grades. Pay equity issues may occur when substantial range overlap occurs.



Salary Range Penetration

Range Penetration = (Employee Salary - Range Min.) / (Range Max. - Range Min.)

80% = ($54,880 - $39,200) / ($58,800 - $39,200)

Salary Range Spread
To calculate the salary range spread from the maximum and minimum of a salary range:

Range Spread = (Maximum - Minimum) / Minimum
0.50 or 50% = ($90,000 - $60,000) / $60,000

To calculate the salary range spread from a minimum percent and maximum percent:

Range Spread = ((1 + Maximum Percent) / (1 - Minimum Percent)) - 1
0.50 or 50% = (1.20 / 0.80) - 1

Salary Range Spread on Either Side of Midpoint
To calculate the salary range spread from the minimum to midpoint and the midpoint to maximum:

Minimum as % of Midpoint = (Midpoint - Minimum) / Midpoint
- 20% = ($75,000 - $60,000) / $75,000

Maximum as % of Midpoint = (Maximum - Midpoint) / Midpoint
+ 20% = ($90,000 - $75,000) / $75,000

Salary Structure Adjustment
A salary structure adjustment may be used in lieu of repricing an existing structure. In this case, a flat percentage (based on the market movement of salary structure adjustment projections) is typically applied to the midpoints of the existing salary structure to adjust them to the upcoming year.

In the United States, salary structure adjustments are approximately 1% below the market movement of base salaries.

For example, let's assume a 2% projection for salary structure adjustments:

Grade	2018 50% Range Spread			2019 (+2.0%) 50% Range Spread		
	Minimum 80%	Midpoint 100%	Maximum 120%	Minimum 80%	Midpoint 100%	Maximum 120%
1	$40,000	$50,000	$60,000	$40,800	$51,000	$61,200
2	$44,800	$56,000	$67,200	$45,696	$57,120	$68,544
3	$50,176	$62,720	$75,264	$51,179	$63,974	$76,769
4	$56,197	$70,246	$84,295	$57,321	$71,651	$85,981
5	$62,941	$78,676	$94,411	$64,200	$80,250	$96,300

Salary Structure Design (Excel Rate Formula)
The Microsoft Excel Rate Formula can be used to develop salary range midpoints by inputting three numbers into the formula: (1) the desired number of salary grades, (2) the desired lowest midpoint, and (3) the desired highest midpoint. The result will calculate the following:
(4) suggested midpoint percent progression.

Excel Formula
= Rate((Number of Salary Grades-1),0,(Desired Lowest Midpoint*-1),Desired Highest Midpoint,1)

Example:

1) Desired # of Grades	**11**
2) Desired Lowest Midpoint	**$61,882**
3) Desired Highest Midpoint	**$227,958**
4) Midpoint % Progression	**13.92763% (Outcome of Rate Formula)**

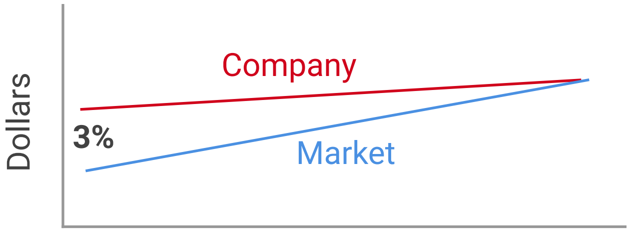
Salary Grade	Midpoint
1	**$61,882**
2	**$70,501**
3	**$80,320**
4	**$91,506**
5	**$104,251**
6	**$118,771**
7	**$135,313**
8	**$154,159**
9	**$175,629**
10	**$200,090**
11	**$227,958**

Salary Structure Strategies

Lead the Market
A lead the market strategy will set the salary range midpoints at the defined market rate at the end of the plan year. A lead the market approach might be used by highly successful companies in a highly competitive labor market. These companies will have the financial resources to pay at a lead the market strategy.

Lead the Market Formula =
Market Data x {1+ [Annualized Market Movement of Salaries x (# of Months to End of Plan Year / 12 Months in a Year)]}

Example:
$103, 750 = $100,000 x { 1 + [3% Annualized Market Movement of Salaries x (15 Months to End of Plan Year / 12 Months in a Year)]}

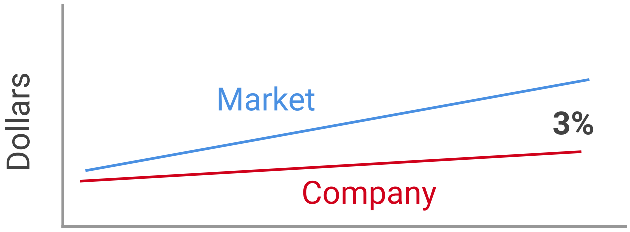


Time
(Lead the Market)

Lag the Market
A lag the market strategy will set the salary range midpoints at the defined market rate at the beginning of the plan year. A lag the market approach might be used by a start-up organization or an organization that does not have the financial resources to pay at a higher level. Training programs might be offered in lieu of higher cash compensation.

Lag the Market Formula =
Market Data x {1+ [Annualized Market Movement of Salaries x (# of Months to Start of Plan Year / 12 Months in a Year)]}

Example:
$100, 750 = $100,000 x { 1 + [3% Annualized Market Movement of Salaries x (3 Months to Start of Plan Year / 12 Months in a Year)]}

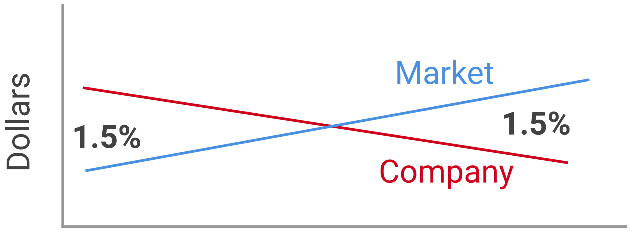


Time
(Lag the Market)

Lead-Lag the Market
A lead-lag the market strategy will set the salary range midpoints at the defined market rate at the middle of the plan year. This is the most prevalent of the market strategies. It ensures a very competitive position to the market place and will be slightly ahead of the market for six months of the year and slightly below the market for six months of the year.

Lead-Lag the Market Formula =
Market Data x {1+ [Annualized Market Movement of Salaries x (# of Months to Middle of Plan Year / 12 Months in a Year)]}

Example:
$102, 250 = $100,000 x { 1 + [3% Annualized Market Movement of Salaries x (9 Months to Middle of Plan Year / 12 Months in a Year)]}



Time
(Lead-Lag the Market)

Salary Structure Types

Broadbands

Typical Design Characteristics	Advantages	Disadvantages
Range spreads of 80-200% and typically no defined midpoint	Flexibility; reduction in the number of requests for job re-evaluation	Lack of structure; lack of control; requires greater HR guidance

Traditional Graded Salary Structure

Typical Design Characteristics	Advantages	Disadvantages
Range spreads of 20-40% and midpoint progressions of 5-10% with many salary grades	Provides control of variance in rates paid for jobs in same grade; supports internal equity	Employees tend to "max out;" difficult to remain competitive with highly skilled workforce

Step Structures

Typical Design Characteristics	Advantages	Disadvantages
Range spreads of 20-40% and midpoint progression of less than 5-10%	Simple to administer; costs are predictable	Inability to recognize for performance

Market-Based Salary Structures

Typical Design Characteristics	Advantages	Disadvantages
Range spreads of 40-80% and midpoint progression of 10-15%+	The vast majority of companies today use market pricing; flexibility and control over salary costs and internal equity	More frequent analysis of market required
"Blended market pricing" typically includes one salary range per grade	Most common approach; internal equity; generally market competitive; simple to manage	Some jobs will be underpaid to the market while other jobs will be overpaid to the market
"Pure market pricing" will include multiple ranges within grades and represents the actual market value of jobs	High demand jobs in a robust market can have highly competitive salary ranges as required; grades ensure internal equity; grades can manage short- and long-term incentive plan eligibility	Structure is more complex to develop and requires strong market data

Salary Survey - Annual
An annual salary survey will typically collect and publish market data one time each year.

Salary Survey - Crowdsourced
A salary survey obtained through crowdsourced data will obtain data from the masses. It may not be as reliable as other salary surveys since the job matches and data are typically self-reported.

Salary Survey - Evergreen
An evergreen salary survey collects and publishes market data throughout the year. Typically, participants will submit the data one time per year, and the data collection cycle is staggered so that the database is refreshed throughout the year.

Standard Deviation
A square root of the variance. It is a measure of dispersion which indicates a relative distance between each data point and the mean. When data is spread further from the mean, the standard deviation will increase.

Standard Error
It is the standard deviation of the sampling distribution of a statistic, most commonly of the mean.

Weighted Survey Data
Salary survey data can be weighted to place greater emphasis on the results of one survey over another.

Example:

Job Title: Nuclear Medicine Technologist						
Survey	**Survey Effective Date**	**Market Rate**	**Match**	**Aged Market Rate**	**Weighting**	**Aged Weighted Market Rate**
Survey 1	01 Jul 2017	$31.75	=	$32.70	75%	$24.53
Survey 2	01 Dec 2017	$33.50	-	$34.09	25%	$ 8.52
						$33.05

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