

Casestudy

[Science](#), [Statistics](#)



Case Study: Determination of the Severance Pay for Laurier Employees
Comparison for Equivalence with the Western Company Buy-out Ngoc
Nguyen Institution:

Course:

Abstract

Determination of wages and other packages for employees requires excellent communication because most employees view their employers with suspicion. For this reason, Lauren ought to communicate the full criteria it uses to pay its employees the severance package, and extend the same to Western Company employees whose jobs have been severed following the buy-out.

Though seemingly late, all staff ought to know that the following factors are used to construct a linear regression model that has been used to predict the pay-off for laid off workers. Using this model the pending appeal by one former Western employee will hopefully be determined.

Problem Definition:

We at Lauren sincerely regret the unavoidable employee lay-off situation that followed our acquisition of Western Company. We have received complaints by former Western employees who feel aggrieved by the amount of severance package we have stepped forward to offer our unfortunate brothers whose esteemed services were cut short at the firm for sustainability reasons. For demonstration we shall pick the case of Bill Smith, a recently laid off Western employee, who we understand is concerned that Lauren is not genuine in the severance package offered to him. To clarify our stand, Lauren has hired the services of a statistician who worked out the

figures contained in the analysis below regarding our severance packages policy.

Analysis:

Data was collected for a random sample of 50 former Lauren employees in order to ascertain whether Lauren has indeed been consistent in its award of severance packages. The points of the data include:

- Number of weeks of severance pay
- Age of employee
- Number of years with the company
- Annual pay (in thousands of dollars)

Coefficients(a)

Model

Unstandardized Coefficients

Standardized Coefficients

t

Sig.

95% Confidence Interval for B

Correlations

B

Std. Error

Beta

Lower Bound

Upper Bound

Zero-order

Partial

Part

1

(Constant)

6.061

2.604

2.328

.024

.820

11.303

AGE

-.008

.066

-.016

-.118

.907

-. 141

. 126

. 670

-. 017

-. 009

YEARS

. 603

. 097

. 873

6. 250

. 000

. 409

. 798

. 831

. 678

. 503

PAY

-. 070

. 052

-. 112

-1. 341

. 186

-. 176

. 035

. 113

-. 194

-. 108

a Dependent Variable: WEEKS

The output above shows the coefficients generated when the data from the randomly picked former Lauren employees is executed. We use the table values to construct a linear model that can be used to determine the amount of severance pay for any employee at the firm and emerging subsidiaries.

The model is supposed to acquire the form:

$y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3$ since we have got three independent variables; employees age at the time of termination of the contract, the length of time the employee has worked with us, and the annual pay of the employee. We have also one dependent variable, weeks of severance pay.

The coefficients (betas) for the function are:

$\beta_0 = 6.061$; $\beta_1 = -0.008$; $\beta_2 = 0.603$; $\beta_3 = -0.070$

We therefore come up with the following equation:

$y =$ Number of weeks of severance pay

$x_1 =$ Age of employee with corresponding predicted constant β_1

$x_2 =$ Number of years with the company with corresponding predicted constant β_2

$x_3 =$ Annual pay (in thousands of dollars) with corresponding predicted constant β_3

$y = 6.061 - 0.008x_1 + 0.603x_2 - 0.070x_3$

This equation can further be made to absorb the variables in their crude

word form.

Number of weeks of severance pay = $6.061 - 0.008 (\text{Age of employee}) + 0.603 (\text{Number of years with the company}) - 0.070 (\text{Annual pay (in thousands of dollars)})$

Severance Pay Determination for Mr. Bill Smith:

We now apply the values of Mr. Smith's employment to calculate the number of severance pay weeks he deserved. The following information is available about him:

Age = 36 years; annual pay = \$ 32000; duration of employment = 10 years

$$y = 6.061 - 0.008 (36) + 0.603 (10) - 0.070 (32000)$$

$$= -2228.2 \text{ weeks}$$

Confidence Intervals for Pay:

Weeks SP

Age

Years

Pay

Confidence Level(95.0%)

0.96

Confidence Level(95.0%)

2.0

Confidence Level(95.0%)

1. 4

Confidence Level(95. 0%)

1. 54

Mean = 10. 26 39. 94 11. 56 35. 1

Therefore the different confidence intervals are:

Weeks SP: [9. 3, 11. 22]

Age: [37. 94, 41. 94]

Years of employment: [10. 16, 12. 96]

Pay: [33. 56, 36. 64]

The most important of the confidence interval values is the number of weeks of severance pay given to employees at the termination of their contracts.

Conclusions:

From the figure obtained above (-2228. 2 weeks), it is clear that the model does not exactly obey the assumption that the pay period is directly related to any linear combination of the factors listed by Lauren as the determining factors of pay period. This is a serious fact because it exposes Lauren as a company that does not honour or follow any pre-set procedures in administration of the severance package.

The negative value indicates that Mr. Smith is supposed to work for firm for another over 2220 weeks, a situation that depicts him as owing Lauren funds, to be recouped through his free services for this very long period.

For this reason, we can safely conclude that the firm has not, in deed, been following a specific model in its allocation of severance packages for its employees. This may put the firm in a rather awkward position when defending its position against Mr. Smith.

Reference list

Freund, J. E. (2004), *Mathematical Statistics with Applications*, 7th Edition-
Chapter 8. pp 11-13.

Appendix

Excel Output:

SUMMARY OUTPUT

Regression Statistics

Multiple R

0. 112985

R Square

0. 012766

Adjusted R Square

-0. 0078

Standard Error

3. 422805

Observations

50

ANOVA

df

SS

MS

F

Significance F

Regression

1

7. 271486

7. 271486

0. 620667

0. 434673

Residual

48

562. 3485

11. 71559

Total

49

569. 62

Coefficients

Standard Error

t Stat

P-value

Lower 95%

Upper 95%

Lower 95. 0%

Upper 95. 0%

Intercept

7. 774809

3. 191422

2. 436158

0. 018605

1. 358024

14. 19159

1. 358024

14. 19159

Pay

0. 070803

0. 089872

0. 787824

0. 434673

-0. 1099

0. 251502

-0. 1099

0. 251502

SUMMARY OUTPUT

Regression Statistics

Multiple R

0. 17253

R Square

0. 029767

Adjusted R Square

0. 009554

Standard Error

6. 995177

Observations

50

ANOVA

df

SS

MS

F

Significance F

Regression

1

72. 0599

72. 0599

1. 472639

0. 230868

Residual

48

2348. 76

48. 9325

Total

49

2420. 82

Coefficients

Standard Error

t Stat

P-value

Lower 95%

Upper 95%

Lower 95. 0%

Upper 95. 0%

Intercept

32. 11661

6. 522301

4. 924122

1. 04E-05

19. 00264

45. 23057

19. 00264

45. 23057

Pay

0. 222889

0. 183671

1. 213523

0. 230868

-0. 14641

0. 592183

-0. 14641

0. 592183