**Simple Moving Average**

|  |  |
| --- | --- |
| Year | Sales ($M) |
| 2007 | $2.3 |
| 2008 | $1.9 |
| 2009 | $2.6 |
| 2010 | $3.0 |
| 2011 | $3.3 |
| Total | $13.1 |

Source: Fictitious data, for illustration purposes only – the case study did not have historical data but I wanted to use methods that required this data so I put in my own numbers.

The five-year SMA of closing sales for John Readings is $2.62M

**Regression Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| X  Sales ($M) | Y  # Employees | XY | X2 |
| $2.3 | 22 | 51 | 5.29 |
| $1.9 | 29 | 55 | 3.61 |
| $2.6 | 35 | 91 | 6.76 |
| $3.0 | 43 | 129 | 9.00 |
| $3.3 | 56 | 185 | 10.80 |
| $13.1 | 185 | 511 | 35.46 |

Source: Fictitious data, for illustration purposes only

Average X = 13.1/5 = 2.62

Average Y = 185/5 = 37

**Calculating B**

B=511 – 5 (2.62)(37) B=511 – 409

35.46 – 5 (2.62) 35.46 – 23.6 B = 8.60

**Calculating A**

A = 37 – (8.60)(2.62)

A = 14.47

**Calculate Predicted HR Demand for Personnel**

|  |  |  |
| --- | --- | --- |
| $5 Million | $7 Million | $9 Million |
| Y = A + BX | Y = A + BX | Y = A +BX |
| A = 14.47 | A = 14.47 | A = 14.47 |
| B = 8.60 | B = 8.60 | B = 8.60 |
| X = 5 | X = 7 | X = 9 |
| Y = 14.47 + (8.60)(5) | Y = 14.47 + (8.60)(7) | Y = 14.47 + (8.60)(9) |
| Y = 57.47 | Y = 74.67 | Y = 91.87 |
| 57 Staff Required | 75 Staff Required | 92 Staff Required |

Source: Fictitious data, for illustration purposes only

**Exponential Smoothing**

Smoothing Constant – A = .30

Forecast for Latest Period - $33000

Actual Sales - $38000

F(Next Period) = $33000 +(.30)(38000 – 33000) = $34500

Forecast for next period = $34500