DUMMY VARIABLES

The below given table contains the is the historical data that covers sales from 2010-02-05 to 2012-11-01, in the file Walmart Store sales, it has various variables effecting the sales of the store along with the Holiday flag which is the dummy variable in our data if its value is 1 it represents that day was a holiday and if its value is 0 then that day was a working day.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date | Weekly Sales | Holiday Flag | Temperature | Fuel Price |
| 05-02-2010 | 1643690.9 | 0 | 42.31 | 2.572 |
| 12-02-2010 | 1641957.44 | 1 | 38.51 | 2.548 |
| 12-02-2010 | 2137809.5 | 1 | 38.49 | 2.548 |
| 12-02-2010 | 420728.96 | 1 | 47.93 | 2.548 |
| 19-02-2010 | 1611968.17 | 0 | 39.93 | 2.514 |
| 26-02-2010 | 1409727.59 | 0 | 46.63 | 2.561 |
| 05-03-2010 | 1554806.68 | 0 | 46.5 | 2.625 |
| 12-03-2010 | 1439541.59 | 0 | 57.79 | 2.667 |
| 19-03-2010 | 1472515.79 | 0 | 54.58 | 2.72 |
| 26-03-2010 | 1404429.92 | 0 | 51.45 | 2.732 |
| 02-04-2010 | 1594968.28 | 0 | 62.27 | 2.719 |
| 09-04-2010 | 1545418.53 | 0 | 65.86 | 2.77 |
| 16-04-2010 | 1466058.28 | 0 | 66.32 | 2.808 |
| 23-04-2010 | 1391256.12 | 0 | 64.84 | 2.795 |
| 30-04-2010 | 1425100.71 | 0 | 67.41 | 2.78 |
| 07-05-2010 | 1603955.12 | 0 | 72.55 | 2.835 |
| 14-05-2010 | 1494251.5 | 0 | 74.78 | 2.854 |
| 21-05-2010 | 1399662.07 | 0 | 76.44 | 2.826 |
| 28-05-2010 | 1432069.95 | 0 | 80.44 | 2.759 |
| 04-06-2010 | 1615524.71 | 0 | 80.69 | 2.705 |
| 11-06-2010 | 1542561.09 | 0 | 80.43 | 2.668 |
| 18-06-2010 | 1503284.06 | 0 | 84.11 | 2.637 |
| 10-09-2010 | 1507460.69 | 1 | 78.69 | 2.565 |
| 10-09-2010 | 1839128.83 | 1 | 79.09 | 2.565 |
| 26-11-2010 | 1955624.11 | 1 | 64.52 | 2.735 |
| 26-11-2010 | 2658725.29 | 1 | 62.98 | 2.735 |
| 31-12-2010 | 1367320.01 | 1 | 48.43 | 2.943 |
| 31-12-2010 | 1750434.55 | 1 | 47.3 | 2.943 |
| 11-02-2011 | 1649614.93 | 1 | 36.39 | 3.022 |
| 11-02-2011 | 2168041.61 | 1 | 33.19 | 3.022 |
| 09-09-2011 | 1540471.24 | 1 | 76 | 3.546 |
| 09-09-2011 | 1748000.65 | 1 | 77.97 | 3.546 |
| 25-11-2011 | 2033320.66 | 1 | 60.14 | 3.236 |
| 25-11-2011 | 2614202.3 | 1 | 56.36 | 3.236 |
| 30-12-2011 | 1497462.72 | 1 | 44.55 | 3.129 |
| 30-12-2011 | 1874226.52 | 1 | 44.57 | 3.129 |
| 10-02-2012 | 1802477.43 | 1 | 48.02 | 3.409 |
| 10-02-2012 | 2103322.68 | 1 | 46.98 | 3.409 |
| 07-09-2012 | 1661767.33 | 1 | 83.96 | 3.73 |
| 07-09-2012 | 1898777.07 | 1 | 87.65 | 3.73 |

**MODEL BUILDING: -**

Here we are taking the sales as dependent variable and the independent variables as holiday flag, temperature of the day, and fuel price. Since in general these attributes can affect the sales of a particular Walmart store. Here the holiday flag is the dummy variable because the it takes the value 0 or 1.

**DESCRIPTIVE STATISTICS: -**



**CORRELATION: -**



We can see that that the correlation statistics between the variables of the data is very low, they either have low possibility of correlation or no correlation among them.

**SCATTER PLOT: -**



**LINE & SYMBOL PLOT: -**



**REGRESSION OUTPUT: -**



Estimated model: sales = (112670) +(230941) \*(holiday flag) +(-1324.40) \*(temperature) +(174979) \*(fuel price)

**CONCLUSION: -**

The values of R-squared and Adjusted R-squared are 0.187 and 0.120 respectively which are very low and thus indicates the low explanatory power of our proposed model by calculated by the OLS method. On the other hand, the probability values of the fuel price, holiday flag, temperature and the F-static are also acting as added negatives (since these values are above 0.05) thus making the model statistically insignificant. From our model we can infer that the sales of a particular Walmart store will increase by $ 230,941 if that day were a holiday.

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