## Comparison of All Variables Except for Binary Variables

| DV: Sales ( SQRT) | | | | | | |
|---|---|---|---|---|---|---|
| **Variable** | **R Square** | **P Value(Significant or Not)** | **F Value** | **Coefficient** | **Residual Plot** | **Line Fit** |
| Average Return Traffic SQRT | 64.80% | Significant | 327.025 | 14.364 | No Pattern | No Pattern |
| Weather Index | 1.80% | Not Significant | 3.345 | 2.048 | Radiation | No Pattern |
| Daily Traffic Index Log | 1.80% | Not Significant | 3.272 | 0.913 | No Pattern | No Pattern |

***The Model***

**1st Model:**

**Variables Entered/Removed[a]**

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | LPB, 0.96, Average Return Traffic SQRT, 0.86, 0.99[b] | . | Enter |

a. Dependent Variable: Sales SQRT

b. All requested variables entered.

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .856[a] | .732 | .724 | 2.03626 |

a. Predictors: (Constant), LPB, 0.96, Average Return Traffic SQRT, 0.86, 0.99

b. Dependent Variable: Sales SQRT

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1972.369 | 5 | 394.474 | 95.138 | .000[b] |
| | Residual | 721.465 | 174 | 4.146 | | |
| | Total | 2693.835 | 179 | | | |

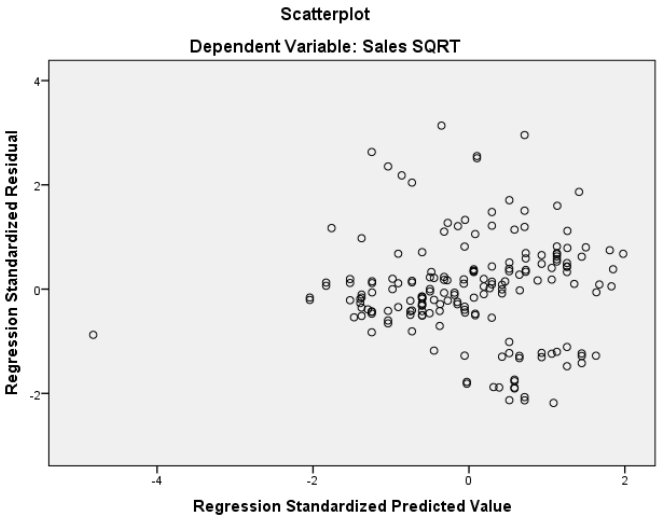
a. Dependent Variable: Sales SQRT

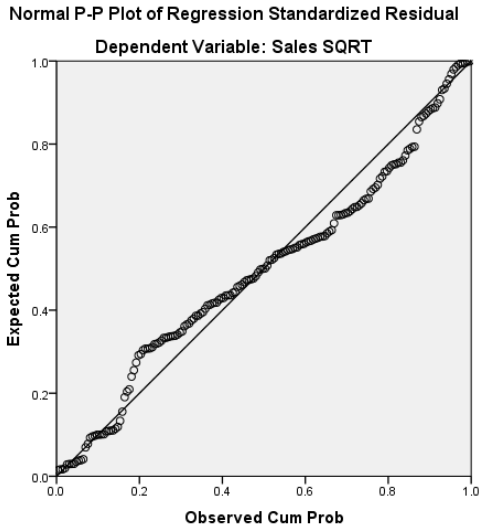
b. Predictors: (Constant), LPB, 0.96, Average Return Traffic SQRT, 0.86, 0.99

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 3.665 | .737 | | 4.970 | .000 |
| | Average Return Traffic SQRT | 15.096 | .745 | .846 | 20.258 | .000 |
| | 0.86 | -2.638 | .406 | -.267 | -6.495 | .000 |
| | 0.96 | -1.880 | .510 | -.149 | -3.687 | .000 |
| | 0.99 | -1.805 | .466 | -.167 | -3.871 | .000 |
| | LPB | .432 | .306 | .056 | 1.412 | .160 |

a. Dependent Variable: Sales SQRT




**Regression Model:**

$$\boldsymbol{Y(Sales\ SQRT) = 3.665 + 15.096 \times Average\ Return\ Traffic\ SQRT - 2.638 \times Seasonality\ 0.86 - 1.88 \times Seasonality\ 0.96 - 1.805 \times Seasonality\ 0.99 + 0.432 \times LPB}$$

**Conclusion:**

R Square is 73.2% which is very good. Significance of the whole model is almost zero. However, the significance of the coefficient of LPB is 0.16 which is above 0.05. LPB should be eliminated.

## 2nd Model:

**Variables Entered/Removed[a]**

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | 0.99, 0.96, 0.86, Average Return Traffic SQRT[b] | . | Enter |

a. Dependent Variable: Sales SQRT

b. All requested variables entered.

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .854[a] | .729 | .723 | 2.04204 |

a. Predictors: (Constant), 0.99, 0.96, 0.86, Average Return Traffic SQRT

b. Dependent Variable: Sales SQRT

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1964.099 | 4 | 491.025 | 117.754 | .000[b] |
| | Residual | 729.735 | 175 | 4.170 | | |
| | Total | 2693.835 | 179 | | | |

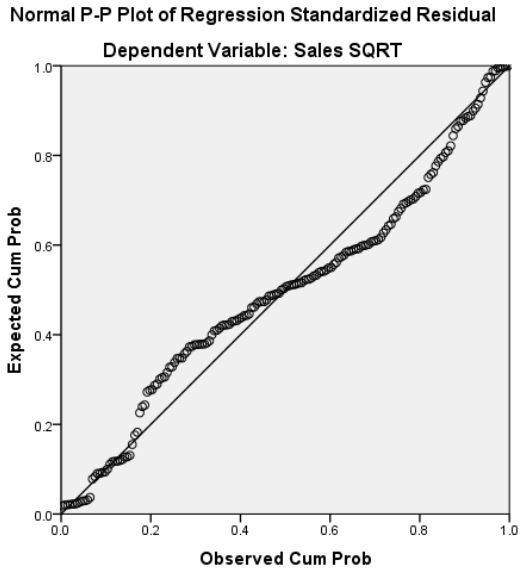
a. Dependent Variable: Sales SQRT

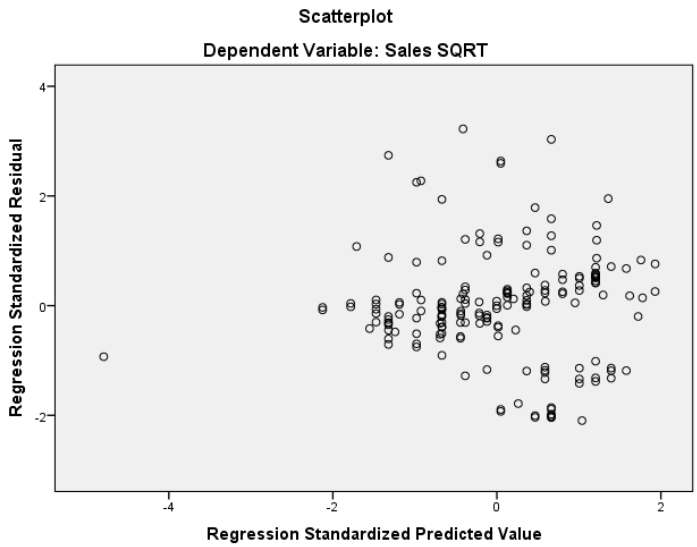
b. Predictors: (Constant), 0.99, 0.96, 0.86, Average Return Traffic SQRT

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 3.795 | .734 | | 5.173 | .000 |
| | Average Return Traffic SQRT | 15.191 | .744 | .851 | 20.412 | .000 |
| | 0.86 | -2.660 | .407 | -.269 | -6.535 | .000 |
| | 0.96 | -1.894 | .511 | -.150 | -3.705 | .000 |
| | 0.99 | -1.789 | .468 | -.165 | -3.826 | .000 |

a. Dependent Variable: Sales SQRT




**Regression Model:**

$$\boldsymbol{Y(Sales\ SQRT) = 3.795 + 15.191 \times Average\ Return\ Traffic\ SQRT\text{-}2.66 \times Seasonality\ 0.86 - 1.894 \times Seasonality\ 0.96 - 1.789 \times Seasonality\ 0.99}$$

1. R Square = 72.9%
2. 72.9% of the dependent variables can be explained by Average Traffic SQRT, Seasonality 0.86, Seasonality 0.96 and Seasonality 0.99. All of the variables combined together have a strong power in explaining the dependent variable.
3. The overall significance is close to zero which means that the combined effect of all factors is significant enough for the model.
4. Significance of each factor is close to zero. All of the variables selected are significant.
5. There is no pattern in residual plot. The Normal Probability Plot also indicates that observed values fit well with expected values.