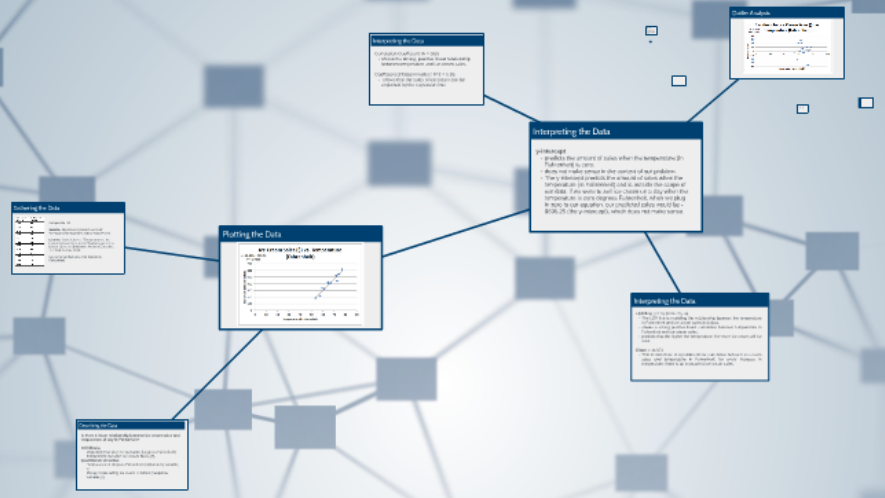
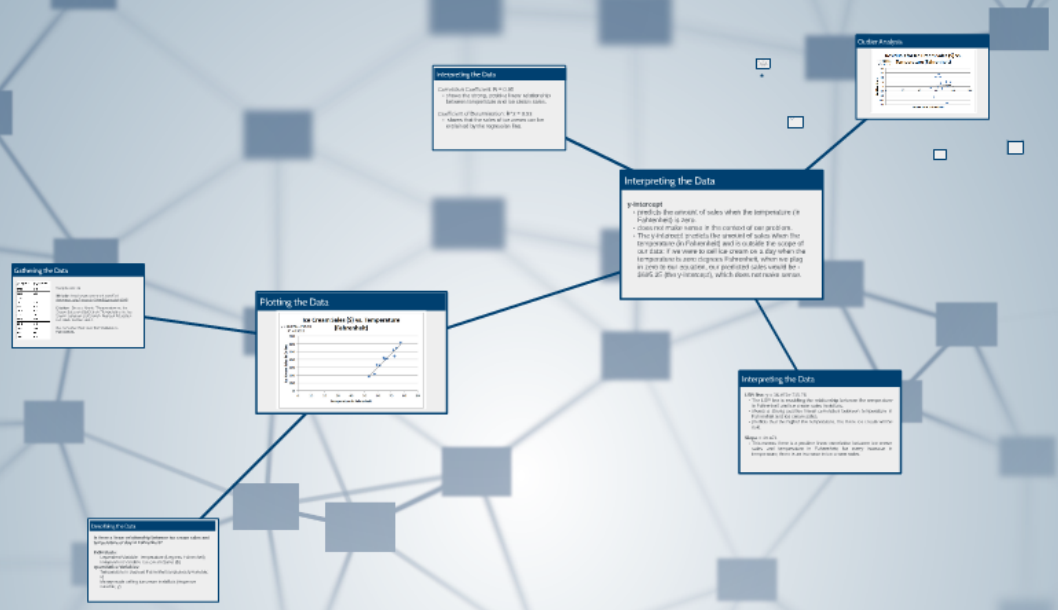
Thecasesolution.com



Statistical Analysis Final Project

Business Analysis Company name: Iced
Jayleen Cienfuegos, Ben Malit, Hana Mukadam
Period 0



Statistical Analysis Final Project

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Period 0

Describing the Data

Is there a linear relationship between ice cream sales and temperature of day in Fahrenheit?

Individuals:

Dependent Variable: Temperature (Degrees Fahrenheit)
Independent Variable: Ice Cream Sales ($)

Quantitative Variables:

Temperature in degrees Fahrenheit (explanatory variable; x)
Money made selling ice cream in dollars (response variable; y)

Gathering the Data

Temperature in Fahrenheit	Ice Cream Sales in Dollars
57.56	215
61.52	325
53.42	185
59.36	332
65.3	406
71.78	522
66.92	412
77.18	614
74.12	544
64.58	421
72.68	445
62.96	408

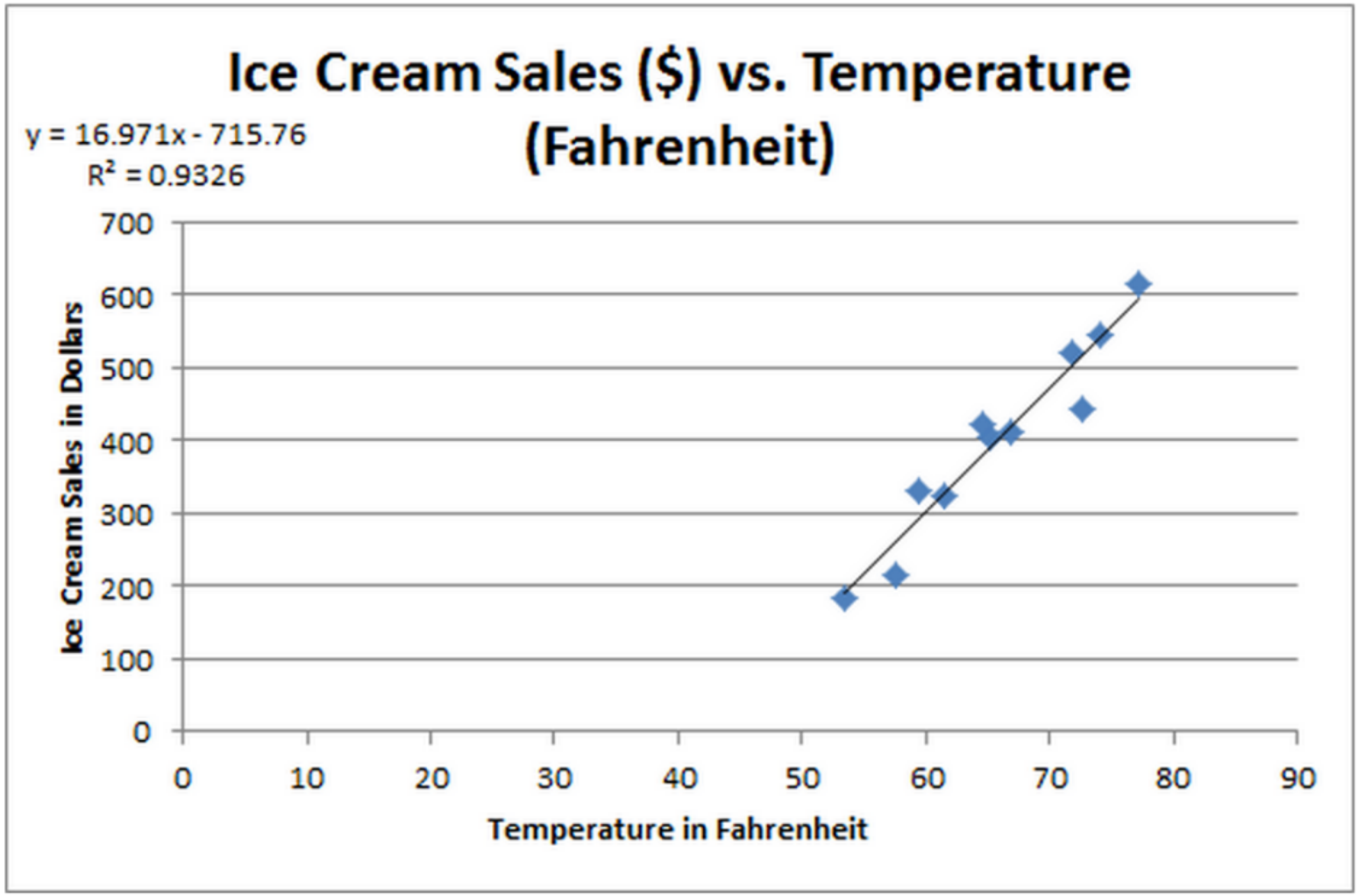
Sample size: 12

Website: http://www.statcrunch.com/5.0/viewreport.php?reportid=34965&groupid=1848

Citation: Delach, Alexis. "Temperature vs. Ice Cream Sales on StatCrunch."Temperature vs. Ice Cream Sales on StatCrunch. Pearson Education, n.d. Web. 16 Dec. 2014.

We converted their data from **Celsius** to **Fahrenheit.**

Plotting the Data



Interpreting the Data

LSR line: y = 16.971x-715.76

- The LSR line is modeling the relationship between the temperature in Fahrenheit and ice cream sales in dollars.
- shows a strong positive linear correlation between temperature in Fahrenheit and ice cream sales.
- predicts that the higher the temperature, the more ice cream will be sold.

Slope = 16.971

- This means there is a positive linear correlation between ice cream sales and temperature in Fahrenheit; for every increase in temperature, there is an increase in ice cream sales.

Interpreting the Data

y-intercept

- predicts the amount of sales when the temperature (in Fahrenheit) is zero.
- does not make sense in the context of our problem.
- The y-intercept predicts the amount of sales when the temperature (in Fahrenheit) and is outside the scope of our data: if we were to sell ice cream on a day when the temperature is zero degrees Fahrenheit, when we plug in zero to our equation, our predicted sales would be -$695.25 (the y-intercept), which does not make sense.

Interpreting the Data

Correlation Coefficient: R = 0.95

- shows the strong, positive linear relationship between temperature and ice cream sales.

Coefficient of Determination: R^2 = 0.93

- shows that the sales of ice cream can be explained by the regression line.