



HOMEWORK ASSIGNMENT 2

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Question 1

Using the HW 2 Data posted on eLearning, conduct the appropriate analysis to examine the following: Evaluate if ice cream sales, rainfall and the interaction of ice cream sales and rainfall can predict the number of reported drownings. Report your results in APA format.

APA Format:

A multiple linear regression analysis was performed to determine how well a combination of ice cream sales, rainfall and the interaction of ice cream sales and rainfall predicted the number of reported drownings. The regression analysis revealed that a combination of the variables ice cream sales, rainfall and the interaction of ice cream sales and rainfall accounted for a significant amount of variance in the variable number of reported drownings, $R^2 = .85$, $F(3, 32) = 59.47$, $p < .001$, at the .05 level of significance. The regression analysis also revealed that within the model, the variable ice cream sales accounted for a significant amount of variance in arguments, $b = 1.36$, $t(32) = 8.17$, $p < .001$, as did the interaction of ice cream sales and rainfall, $b = -.25$, $t(32) = -5.42$, $p < .001$. However the variable rainfall did not account for a significant amount of variance in the number of reported drownings, $b = -.01$, $t(32) = -.05$, $p = .964$. $\alpha = .05$.

Question 2

If you wanted to determine whether there is a difference between the amount of ice cream and the number of popsicles sold in a given month, what test would you conduct?

Solution:

I would conduct a correlation analysis to see the difference between the amount of ice cream and the number of popsicles. If there is any kind of positive or negative correlation, I would mean there is a difference in the values of the two variables, else there is no difference.

APA Format:

A Pearson's correlational analysis revealed a significant correlation (difference) between the amount of ice cream sales and the popsicles sales, $r(34) = 1.00$, $p < .001$. $\alpha = .05$.

Question 3

Now, run a 3-step hierarchical regression analysis predicting reported drownings. Start with a simple regression model with the predictor Rain. For step 2, add in the predictor Temperature. For step 3, add in the interaction term for the predictor variables Rain and Temperature. Report the results of your hierarchical regression model using the table below. Make sure to report the standardized regression coefficients and their corresponding p values.

Solution:

	Step 1	Step 2	Step 3
Rain	b=-.73, p<0.001	b=-.32, p=0.008	b=.69, p<0.001
Temperature	***	b=.63, p<0.001	b=.98, p<0.001
Rain x Temperature	***	***	b=-0.90, p<0.001
<i>Adj R²</i>	0.52	0.74	0.88
<i>Adj R² change</i>	0.53	0.23	0.14

Question 4

Determine if average monthly temperature mediates the relationship between ice cream sales and reported drownings. Create two separate diagrams to support your findings, report the relevant b, p, and R^2 for each path. For this question you can make your diagrams by hand or digitally.

Solution:

Attachments

Output graph of the data into SPSS.