Ba 253 BUSINESS STATISTICS
Correlations Coefficient (Level of Significance) MODULE 7 QUIZ II

Name_____Date_____Score_____

*1.* The following sample data were obtained from companies to determine should the number of stocks a company have depends on the rate of return. Is it reasonable to conclude that there is a position association in the population between the number of stocks and rate of return by using a .05 significant level. MUCH SHOW YOUR WORK FOR FULL CREDIT.

| Companies | # of Stocks | Rate of Return |
|---|---|---|
| A | 8 | .15 |
| B | 16 | .16 |
| C | 25 | .21 |
| D | 16 | .18 |
| E | 20 | .18 |
| F | 16 | .19 |
| G | 20 | .15 |
| H | 20 | .17 |
| I | 16 | .13 |
| J | 10 | .11 |

Step 1. Specify the population parameter of interest.

Step 2. Formulate the appropriate null and alternative hypotheses

Step 3. Specify the level of significance.

Step 4. Compute the correlation coefficient and the test statistic.

Step 5. Construct the rejection region and decision rule.

Step 6. Reach a decision

Step 7. Draw a conclusion.

Name_____Date_____Score_____

MUST SHOW WORK FOR FULL CREDIT

***2.*** The following hypotheses are given to determine an One-Tail testing**.**

$H_0$: $p \leq 0$

$H_{A:}$ $p > 0$

A random sample of 10 paired observations indicated a correlation (r) of .35. Can we conclude that the correlation in the population is greater than zero by performing the t-statistic?

By using the .05 significance level, what is the p-value or critial value?_____

What is your decision regarding $H_o$ or the null hypothosis?

3. The Airline Passenger Association studied the relationship between the number of passengers on a particular flight and the cost of the flight. It seems logical that more passengers on the flight will result in more weight and more luaggage, which in turn will result in higher fuel costs. For a sample of 13 flights, the correlation between the number of passengers and total fuel cost was .37. Is it reasonable to conclude that there is positive association in the population between the two variables?

   $H_0$: $p \leq 0$

   $H_{A:}$ $p > 0$

Use the 5% significant level, what is the p-value?_____

What is your decision regarding $H_0$ or the hull hypothesis? Reject or Do not Reject_____

Draw a conclusion. Specifically, what does this indicate about the question?

4.The correlation between the number of police on the street and the number of crimes committed, for a sample of 15 comparable sized cities, is 0.45. At the 0.05 significance level is there a positive association in the population between the two variables?

**a**. State the null and alternate hypotheses.

$H_0$: _____

$H_1$: _____

**b**. State the decision rule.

_____

**c**. Compute the value of the test statistic.

**d**. What is your decision regarding the null hypothesis? Interpret the result.

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