Peer-graded Assignment: Assignment Two: Hypothesis Testing

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Review assignments

Instructions   My submission   Discussions

Assignment two: Hypothesis Testing

Submitted on May 1, 2020   Shareable Link

PROMPT

You are to test the claim by a mineral water bottle manufacturer that its bottles contain an average of 1000 ml (1 litre). A random sample of $n = 12$ bottles resulted in the measurements (in ml): 992, 1002, 1000, 1001, 998, 999, 1000, 995, 1003, 1001, 997 and 997.

It is assumed that the true variance of water in all bottles is $\sigma^2 = 1.5$, and that the amount of water in bottles is normally distributed.

Test the manufacturer's claim at the 1% significance

RUBRIC

The assignment requires:

- the calculation of the sample mean from the raw observations
- the formulation of the hypotheses, H_0 and H_1
- calculation of the test statistic value
- calculation of the $$p$-value$
- a decision of whether or not to reject H_0

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means about the manufacturer's claim, and if an error might have occurred which type of error it would be.

In summary, the assignment requires:

- the calculation of the sample mean from the raw observations
- the formulation of the hypotheses, H_0 and H_1
- calculation of the test statistic value
- calculation of the $$p$-value$
- a decision of whether or not to reject H_0
- an inferential conclusion about what the test result means
- indication of which type of error might have occurred.

- indication of which type of error might have occurred.

Dr. Andreas Raba

calculation of the $$p$-value$: 0.000406952

Arzu Garaeva

the calculation of the sample mean from the raw observations

Abraham Panjaitan

Except the p-value, everything else is correct

The assignment requires:

- the calculation of the sample mean from the raw observations

  ⊙ **1 point**
  The sample mean is 998.75.

PROMPT

The assignment requires:

- the formulation of the hypotheses, H_0 and H_1

H0 : u = 1000ml
H1: u != 1000ml

The sample mean is 998.75.

RUBRIC

Please select which of the below matches the learners answer.

⊙ **2 points**
$H_0 : \mu = 1000$ vs. $H_1 : \mu \neq 1000$.

○ 0 points
Anything else.

PROMPT

The assignment requires:

- calculation of the test statistic value

test statistic value = (998.75 - 1000)/ (1.22/ 3.46)
= -3.54928

RUBRIC

Please select which of the below matches the learners answer.

⊙ **2 points**
Test statistic value
$$\frac{\bar{x} - \mu}{\sigma/\sqrt{n}} = \frac{998.75 - 1000}{\sqrt{1.5/12}} = -3.54$$

○ 0 points
Anything else.

The assignment requires:

- calculation of the p-value

The P-Value is 0.49992

Please select which of the below matches the learners answer.

- ○ 2 points
  Calculation of the p-value using
  =NORMSDIST(-3.54)*2 = 0.0004

- ◉ **0 points**
  Anything else.

PROMPT

The assignment requires:

- a decision of whether or not to reject H_0

The result is not significant at p < .01.
Reject the H0 hypothesis.

RUBRIC

Please select which of the following matches the learners answer.

- ◉ **1 point**
  Decision of rejecting H_0 since
  $0.0004 < 0.01.$

- ○ 0 points
  Anything else.

The assignment requires:

- an inferential conclusion about what the test result means

The test results show that the claim does not seems to be correct

Please select which of the following matches the learners answer:

- ◉ **1 point**
  We conclude that the
  manufacturer's claim is false, since
  we have rejected H_0.

- ○ 0 points
  Anything else.

PROMPT

The assignment requires :

- indication of which type of error might have occurred.

Type 1 error might have occured

RUBRIC

Please select which of the following matches the learners answer:

- ◉ **1 point**
  As we have rejected H_0, if an error
  has occurred it would be a Type I
  error.

- ○ 0 points
  Anything else.

Edit submission

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