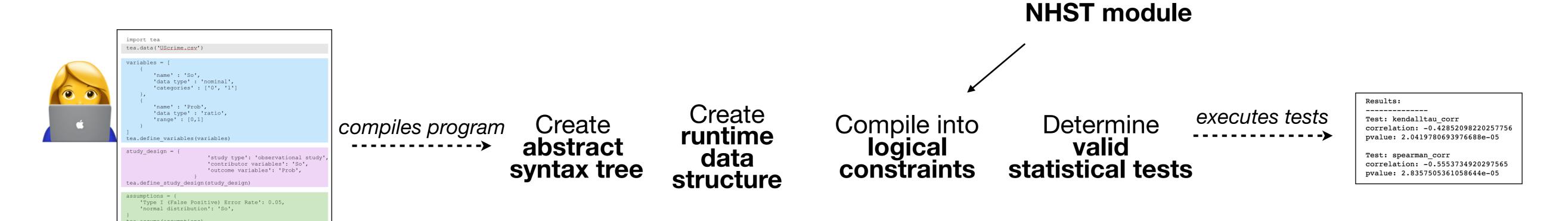


USE ME!

hypothesis = "So:1 > 0"

tea.hypothesize(['So', 'Prob'], hypothesis)



```
# One-sided comparisons between groups
hypothesis = 'Region: Southern > Northern'
hypothesis = 'Region: Northern < Southern'
#Partial orders
hypothesis = 'Region: Southern > Southwest,
           Region: Northeast > Midwest'
# Two-sided comparisons
hypothesis = 'Region: Southern != Northern'
# Positive linear relationships
hypothesis = 'Imprisonment ~ Region'
hypothesis = 'Imprisonment ~ +Region'
# Negative linear relationships
hypothesis = 'Imprisonment ~ -Region'
# Under development
hypothesis = 'Region: Southern > 1.5 * Northern'
tea.hypothesize(['Region', 'Imprisonment'], hypothesis)
```

Hypotheses

Test: students_t

*Test assumptions:

variables involved in analysis: So, Probexplanatory variable: So **Exactly two**

explanatory variable: Exactly one

explained variable: Prob Exactly one

Independent (not paired) observations:

Variable is categorical: So

Variable has

two categories: So (not categorical) data: Prob nce: So, Prob

Continuous (not Equal variance: §

Groups are normally distributed: So, Prob

***Test results:

name = Student's T Test

stic = 4.20213 - 0.00012 statistic

value

= 0.00006value ď adjusted_

alpha = 0.05

45 dof =

Effect size:

1.24262 Cohen's

= 0.83669

= There is no difference in means Null hypothesis

between So = 0 and So = 1 on Prob.

Interpretation = t(45) = 4.20213, p = 0.00006. Reject the null hypothesis at alpha = 0.05. The mean of Prob for So = 1 (M=0.06371, SD=0.02251) is significantly greater than the mean for So = 0 (M=0.03851, SD=0.01778). The effect size is Cohen's d = 1.24262, A12 = 0.83669. The effect size is the magnitude of the difference, which gives

a holistic view of the results [1].
[1] Sullivan, G. M., & Feinn, R. (2012). Using effect size or why the P value is not enough. Journal of graduate medical education, 4(3), 279-282.

```
import tea
tea.data('statex77.csv')
variables = [
        'name' : 'Illiteracy',
        'data type' : 'interval',
        'categories' : [0, 100]
        'name' : 'HS Grad',
        'data type' : 'ratio',
    } ,
        'name' : 'Life Exp',
        'data type' : 'ratio',
tea.define variables (variables)
study design = {
                   'study type': 'observational study',
                   'contributor variables': ['Illiteracy', 'HS Grad'],
                   'outcome variables': 'Life Exp'
tea.define_study_design(experimental_design)
assumptions = {
    'Type I (False Positive) Error Rate': 0.05,
    'normal distribution': ['Illiteracy']
tea.assume(assumptions)
tea.hypothesize(['Illiteracy', 'Life Exp'], ['Illiteracy ~ Life Exp'])
```

Modes

```
assumptions = {
    'Type I (False Positive) Error Rate': 0.05,
    'normal distribution': ['Illiteracy']
}

tea.assume(assumptions, 'relaxed')

assumptions = {
    'Type I (False Positive) Error Rate': 0.05,
    'normal distribution': ['Illiteracy']
}

tea.assume(assumptions)
```

```
assumptions =
      'Type I (False Positive) Error Rate': 0.05,
      'normal distribution': ['Illiteracy']
 tea.assume(assumptions, 'relaxed')
Running under RELAXED mode.
User asserted property: is_normal, but is
NOT supported by statistical checking.
User assertion will be considered true.
Currently considering pearson_corr
Testing assumption: is_bivariate.
Property holds.
Testing assumption: is_continuous.
Property holds.
Testing assumption: is_continuous.
Property holds.
ਰਿਉਂ ਇੰਡਿੰਡ serted property: is_normal.
Testing assumption: is_normal.
FRED COTT
***Test assumptions:
Exactly two variables involved in analysis:
Illiteracy, Life Exp
Continuous (not categorical) data: Illiteracy
Continuous (not categorical) data: Life Exp
Normal distribution: Illiteracy:
NormalTest(W=0.8831491470336914,
p_value=0.00013962562661617994)
Normal distribution: Life Exp:
NormalTest(W=0.9772397875785828,
p_value=0.44232138991355896)
```

```
assumptions =
      'Type I (False Positive) Error Rate': 0.05,
      'normal distribution': ['Illiteracy']
 tea.assume(assumptions)
Running under STRICT mode.
User asserted property: is_normal, but is
                                                        Modes + output
NOT supported by statistical checking.
Tea will override user assertion.
Currently considering pearson_corr
Test is unsat.
Results:
Test: kendalltau_corr
***Test assumptions:
Exactly two variables involved in analysis:
Illiteracy, Life Exp
Continuous OR ORDINAL (not nominal) data:
Illiteracy
Continuous OR ORDINAL (not nominal) data:
Life Exp
***Test results:
name = Kendall's Tau Correlation
test_statistic = -0.42852098220257756
p_value = 2.0419780693976688e-05
adjusted_p_value = 2.0419780693976688e-05
alpha = 0.05
Null hypothesis = There is no relationship
between Illiteracy and Life Exp.
```

Interpretation = Reject the null hypothesis at

Running under RELAXED mode. User asserted property: is_normal, but is NOT supported by statistical checking. User assertion will be

considered true.

considering pearson_cssumption: is_bivariate. Currently

Testing assumption: Property holds.

continuous. <u>.လ</u> Testing assumption:

Property holds. Testing assumption:

continuous

<u>လ</u>

: is_normal. _normal. rt is _

Property holds.
User asserted propert
Testing assumption: is

fest: pearson_corr
***Test assumptions:

Exactly two variables involved in analysis: Illiteracy, Life Exp

Continuous (not categorical) data: Illiteracy Continuous (not categorical) data: Life Exp

Illiteracy Life Exp Normal distribution: Normal distribution:

Test results:

name = Pearson Correlation test_statistic = -0.5884779255792575 p_value = 6.9692504664204045e-06 adjusted_p_value = 6.9692504664204045e-06 alpha = 0.05

relationship between Illiteracy There is no Null hypothesis =

There is 0.05 at alpha xp. Reject the null hypothesis etween Illiteracy and Life E Interpretation = Reje a relationship betwe

Test: kendalltau

*Test assumptions:

Exactly two variables involved in analysis: Illiteracy, Life Continuous OR ORDINAL (not nominal) data: Illiteracy Continuous OR ORDINAL (not nominal) data: Life Exp

*Test results:

name = Kendall's Tau Correlation test_statistic = -0.42852098220257756 p_value = 2.0419780693976688e-05 adjusted_p_value = 2.0419780693976688e-05 ted_p_v = 0.05

ere is no relationship between Illiteracy and Life Null hypothesis = Th

= 0.05. at alpha a relationship between Illiteracy and Life Exp Interpretation = Reject the null hypothesis

Test: spearman_corr
***Test assumptions:
Exactly two variables involved in analysis: Illiteracy, Life Exp
Continuous OR ORDINAL (not nominal) data: Illiteracy
Continuous OR ORDINAL (not nominal) data: Life Exp

Test results:

name = Spear test_statistic =

me = Spearman's R Correlation st_statistic = -0.5553734920297565 value = 2.8357505361058644e-05 justed_p_value = 2.8357505361058644e-05

adjusted_p_v alpha = 0.05

and Life Null hypothesis = There is no relationship between Illiteracy

Exp.

0.05 Interpretation = Reject the null hypothesis at alpha a relationship between Illiteracy and Life Exp.

Use me

Running under STRICT mode.
User asserted property: is_normal, but is NOT supported by statistical checking.
Tea will override user assertion.

corr Currently considering pearson_ Test is unsat.

Results:

corr Test: kendalltau

***Test assumptions: Exactly two variables involved in analysis: Illiteracy, Life Exp Continuous OR ORDINAL (not nominal) data: Illiteracy Continuous OR ORDINAL (not nominal) data: Life Exp

*Test results

name = Kendall's Tau Correlation test_statistic = -0.42852098220257756 p_value = 2.0419780693976688e-05 adjusted_p_value = 2.0419780693976688e-05 alpha = 0.05 Null hypothesis = There is no relationship between Illiteracy

Life There is and 0.05. at alpha Interpretation

Reject the null hypothesis a stween Illiteracy and Life Exp relationship b

Test: spearman_corr
***Test assumptions:
Exactly two variables involved in analysis: Illiteracy, Life
Continuous OR ORDINAL (not nominal) data: Illiteracy
Continuous OR ORDINAL (not nominal) data: Life Exp

*Test results:

name = Spearman's R Correlation test_statistic = -0.5553734920297565 p_value = 2.8357505361058644e-05 adjusted_p_value = 2.8357505361058644e-05 alpha = 0.05

alpha = 0.05 Null hypothesis = There is no relationship between Illiteracy and Life

There is 0.05 at alpha Reject the null hypothesis a stween Illiteracy and Life Exp. Interpretation relations

Use me

```
import tea
tea.data('UScrime.csv')
variables = [
        'name' : 'So',
        'data type' : 'nominal',
        'categories' : ['0', '1']
     },
        'name' : 'Prob',
        'data type' : 'ratio',
         'range' : [0,1]
tea.define_variables(variables)
study_design = {
                   'study type': 'observational study',
                   'contributor variables': 'So',
                   'outcome variables': 'Prob',
tea.define_study_design(study_design)
assumptions = {
     'groups normally distributed': [['So', 'Prob']],
     'Type I (False Positive) Error Rate': 0.05
tea.assume(assumptions)
hypothesis = 'So:1 > 0'
tea.hypothesize(['So', 'Prob'], hypothesis)
```

```
import tea
                                                                 import tea
tea.data('UScrime.csv')
                                                             tea.data('UScrime.csv')
   variables = [
                                                                 variables = [
            'name' : 'So',
                                                                          'name' : 'So',
            'data type' : 'nominal',
                                                                          'data type' : 'nominal',
            'categories' : ['0',
                                                                          'categories' : ['0',
                                                             '1']
'1']
            'name' : 'Prob',
                                                                          'name' : 'Prob',
            'data type' : 'ratio',
                                                                          'data type' : 'ratio',
            'range' : [0,1]
                                                                          'range' : [0,1]
   study design = {
                                                                 study design = {
                             'study type': 'observational study',
                                                                                          'study type': 'observational study',
                             'contributor variables': 'So',
                                                                                          'contributor variables': 'So',
                             'outcome variables': 'Prob',
                                                                                          'outcome variables': 'Prob',
                                                                 tea.define_study_design(study_design)
    tea.define_study_design(study_design)
    assumptions = {
                                                                 assumptions =
        'Statistical Test': "Student's T Test",
                                                                      'groups normally distributed': [['So',
        'Type I (False Positive) Error Rate': 0.05
                                                             'Prob']],
                                                                      'equal variance': [['So', 'Prob']],
   tea.assume(assumptions)
                                                                      'Type I (False Positive) Error Rate': 0.05
    hypothesis = "So:1 > 0"
                                                                 hypothesis = "So:1 > 0"
    tea.hypothesize(['So', 'Prob'],
                                                                 tea.hypothesize(['So', 'Prob'],
```

```
שׁ
                                                                                               ea.define_variables(variable).

tudy_design = {
    'study type': 'observational study',
    'contributor variables': ['Illiteracy',
    'outcome variables': 'Life Exp'
}

> define_study_design(experimental_design)
.. n.05,
```

9 Running under STRICT mode. User asserted property: is_normal, but is NOT su by statistical checking. Tea will override user assertion. tea.assume(assumptions)

ပ

analysis: Illiteracy, Life minal) data: Illiteracy minal) data: Life Exp Test: kendalltau_corr
***Test assumptions:
Exactly two variables involved in ar
Exp
Continuous OR ORDINAL (not nom

***Test results:
name = Kendall's Tau Correlation
test_statistic = -0.42852098220257756
p_value = 2.0419780693976688e-05
adjusted_p_value = 2.0419780693976688e-05
alpha = 0.05
Null hypothesis = There is no relationship between Illiteracy and Life Exp.
Interpretation = Reject the null hypothesis at alpha = 0.05.
There is a relationship between Illiteracy and Life Exp.

Test: spearman_corr
***Test assumptions:
Exactly two variables involved in analysis: Illiteracy, Lif
Exp
Continuous OR ORDINAL (not nominal) data: Illiteracy
Continuous OR ORDINAL (not nominal) data: Life Exp

***Test results:
name = Spearman's R Correlation
test_statistic = -0.5553734920297565
p_value = 2.8357505361058644e-05
adjusted_p_value = 2.8357505361058644e-05
alpha = 0.05
Null hypothesis = There is no relationship between Illiteracy and Life Exp.
Interpretation = Reject the null hypothesis at alpha = 0.05.
There is a relationship between Illiteracy and Life Exp.

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is NOT Running under RELAXED mode.
User asserted property: is_normal, but is by statistical checking.
User assertion will be considered true.

(—

Continuous (not categorical) data: Illiteracy Continuous (not categorical) data: Life Exp Normal distribution: Illiteracy Normal distribution: Life Exp

is at alpha = 0 and Life Exp. ***Test results:

name = Pearson Correlation
test_statistic = -0.5884779255792575
p_value = 6.9692504664204045e-06
adjusted_p_value = 6.969250466420404
alpha = 0.05
Null hypothesis = There is no relationship
and Life Exp.
Interpretation = Reject the null hypothesi
There is a relationship between Illiteracy

Test: kendalltau_corr
***Test assumptions:
Exactly two variables involved in analysis: Illiteracy, Lif
Exp
Continuous OR ORDINAL (not nominal) data: Illiteracy
Continuous OR ORDINAL (not nominal) data: Life Exp

name = 1...

test_statistic = -0.42.

test_statistic = -0.42.

p_value = 2.041978069397600...

adjusted_p_value = 2.041978069397600...

alpha = 0.05

Null hypothesis = There is no relationship between Illiteracy and Life Exp.

Interpretation = Reject the null hypothesis at alpha = 0.05.

There is a relationship between Illiteracy and Life Exp.

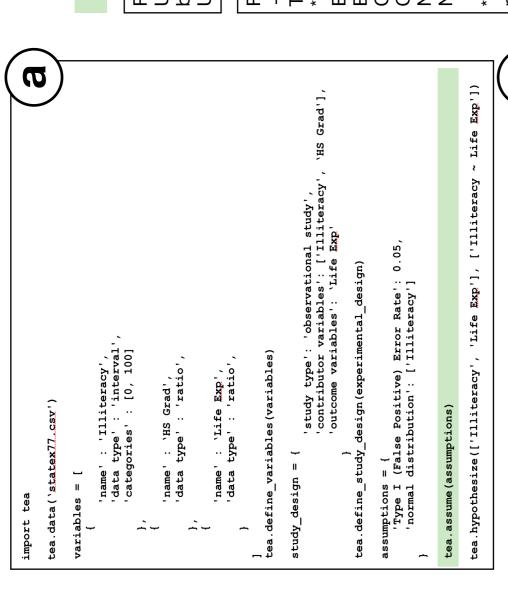
There is a relationship between Illiteracy and Life Exp.

Exactly two variables involved in analysis: Illiteracy, LITEXP Continuous OR ORDINAL (not nominal) data: Illiteracy Continuous OR ORDINAL (not nominal) data: Life Exp

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sis at alpha = 0.05. \prime and Life Exp. ***Test results:
name = Spearman's R Correlation
test_statistic = -0.5553734920297565
p_value = 2.8357505361058644e-05
adjusted_p_value = 2.8357505361058644e
alpha = 0.05
Null hypothesis = There is no relationship b
and Life Exp.
Interpretation = Reject the null hypothesis a
There is a relationship between Illiteracy an

b



tea.assume(assumptions)

ပ Running under STRICT mode. User asserted property: is_normal, but is NOT su by statistical checking. Tea will override user assertion.

analysis: Illiteracy, Life minal) data: Illiteracy minal) data: Life Exp Test: kendalltau_corr
***Test assumptions:
Exactly two variables involved in ar
Exp
Continuous OR ORDINAL (not nom

***Test results:
name = Kendall's Tau Correlation
test_statistic = -0.42852098220257756
p_value = 2.0419780693976688e-05
adjusted_p_value = 2.0419780693976688e-05
alpha = 0.05
Null hypothesis = There is no relationship between Illiteracy and Life Exp.
Interpretation = Reject the null hypothesis at alpha = 0.05.
There is a relationship between Illiteracy and Life Exp.

Test: spearman_corr
***Test assumptions:
Exactly two variables involved in analysis: Illiteracy, Lif
Exp
Continuous OR ORDINAL (not nominal) data: Illiteracy
Continuous OR ORDINAL (not nominal) data: Life Exp

***Test results:
name = Spearman's R Correlation
test_statistic = -0.5553734920297565
p_value = 2.8357505361058644e-05
adjusted_p_value = 2.8357505361058644e-05
alpha = 0.05
Null hypothesis = There is no relationship between Illiteracy and Life Exp.
Interpretation = Reject the null hypothesis at alpha = 0.05.
There is a relationship between Illiteracy and Life Exp.

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is NOT Running under RELAXED mode.
User asserted property: is_normal, but is by statistical checking.
User assertion will be considered true.

(+

Continuous (not categorical) data: Illiteracy Continuous (not categorical) data: Life Exp Normal distribution: Illiteracy Normal distribution: Life Exp

9

is at alpha = 0 and Life Exp. ***Test results:

name = Pearson Correlation
test_statistic = -0.5884779255792575
p_value = 6.9692504664204045e-06
adjusted_p_value = 6.96925046642040
alpha = 0.05
Null hypothesis = There is no relationsh
and Life Exp.
Interpretation = Reject the null hypothes
There is a relationship between Illiteracy

Test: kendalltau_corr
***Test assumptions:
Exactly two variables involved in analysis: Illiteracy, Lif
Exp
Continuous OR ORDINAL (not nominal) data: Illiteracy
Continuous OR ORDINAL (not nominal) data: Life Exp

name = r.c..
test_statistic = -0.4zc._
test_statistic = -0.4zc._
p_value = 2.0419780693976688e-v.
adjusted_p_value = 2.0419780693976688e-v.
alpha = 0.05
Null hypothesis = There is no relationship between Illiteracy and Life Exp.
Interpretation = Reject the null hypothesis at alpha = 0.05.
There is a relationship between Illiteracy and Life Exp.
There is a relationship between Illiteracy and Life Exp. Test results.

ame = Kendall's Tau Correlation

st_statistic = -0.42852098220257756

v_value = 2.0419780693976688e-05

djusted_p_value = 2.0419780693976688e-05

Ipha = 0.05

Iull hypothesis = There is no relationship betwee

Exactly two variables involved in analysis: Illiteracy, LITEXP Continuous OR ORDINAL (not nominal) data: Illiteracy Continuous OR ORDINAL (not nominal) data: Life Exp

44e-05

***Test results:
name = Spearman's R Correlation
test_statistic = -0.5553734920297565
p_value = 2.8357505361058644e-05
adjusted_p_value = 2.8357505361058644e
alpha = 0.05
Null hypothesis = There is no relationship b
and Life Exp.
Interpretation = Reject the null hypothesis a
There is a relationship between Illiteracy an

sis at alpha = 0.05. / and Life Exp.

b

```
(a)
                                                                                                         design = {
    'study type': 'observational study',
    'contributor variables': ['Illiterac',
    'outcome variables': 'Life Exp'
    'outcome variables': 'Life Exp'
    'outcome variables': 'Life Exp'
    '...mental_design)
```

a.assume(assumptions)

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 $oldsymbol{(o)}$ Running under STRICT mode. User asserted property: is_normal, but is NOT by statistical checking. Tea will override user assertion.

*Test assumptions: *Test assumptions: xactly two variables involved in analysis: Illi

Exactly two variables IIIVOLVOLDED BY EXP Continuous OR ORDINAL (not nominal) data: Illiteracy Continuous OR ORDINAL (not nominal) data: Life Exp

***Test results:
name = Kendall's Tau Correlation
test_statistic = -0.42852098220257756
p_value = 2.0419780693976688e-05
adjusted_p_value = 2.0419780693976688e-05
alpha = 0.05
Null hypothesis = There is no relationship between Illiteracy and Life Exp.
Interpretation = Reject the null hypothesis at alpha = 0.05.
There is a relationship between Illiteracy and Life Exp.

est: spearman_corr **Test assumptions: :xactly two variables involved in analysis: Illiteracy, Life :xp :ontinuous OR ORDINAL (not nominal) data: Illiteracy

***Test results:
name = Spearman's R Correlation
test_statistic = -0.5553734920297565
p_value = 2.8357505361058644e-05
adjusted_p_value = 2.8357505361058644e-05
alpha = 0.05
Null hypothesis = There is no relationship between Illiteracy and Life Exp.
Interpretation = Reject the null hypothesis at alpha = 0.05.
There is a relationship between Illiteracy and Life Exp.

(**D**)

tea.assume(assumptions, 'relaxed')

Running under RELAXED mode. User asserted property: is_normal, but is NO by statistical checking. User assertion will be considered true.

Test: pearson_corr
***Test assumptions:
Exactly two variables involved in analysis: Illite
Exp
Continuous (not categorical) data: Illiteracy
Continuous (not categorical) data: Life Exp
Normal distribution: Illiteracy
Normal distribution: Life Exp

***Test results:

name = Pearson Correlation

test_statistic = -0.5884779255792575

p_value = 6.9692504664204045e-06

adjusted_p_value = 6.9692504664204045e-06

alpha = 0.05

Null hypothesis = There is no relationship between Illiteracy and Life Exp.

Interpretation = Reject the null hypothesis at alpha = 0.05.

There is a relationship between Illiteracy and Life Exp.

Test: kendalltau_corr
***Test assumptions:
Exactly two variables involved in analysis: Illiteracy, Life
Exp
Continuous OR ORDINAL (not nominal) data: Illiteracy
Continuous OR ORDINAL (not nominal) data: Life Exp

***Test results:

name = Kendall's Tau Correlation
test_statistic = -0.42852098220257756
p_value = 2.0419780693976688e-05
adjusted_p_value = 2.0419780693976688e-05
alpha = 0.05
Null hypothesis = There is no relationship between Illiteracy and Life Exp.
Interpretation = Reject the null hypothesis at alpha = 0.05.
There is a relationship between Illiteracy and Life Exp.

Test: spearman_corr ***Test assumptions: Exactly two variables involved in a

Exactly two variables Involved and Exp Exp Continuous OR ORDINAL (not nominal) data: Illiteracy Continuous OR ORDINAL (not nominal) data: Life Exp

nship betw

t alpha = 0.05. I Life Exp. ***Test results:
name = Spearman's R Correlation
test_statistic = -0.5553734920297565
p_value = 2.8357505361058644e-05
adjusted_p_value = 2.8357505361058644e-05
alpha = 0.05
Null hypothesis = There is no relationship between Life Exp.
Interpretation = Reject the null hypothesis at alpha is a relationship between Illiteracy and Life

design = {
 'study type': 'observational stud'
 'contributor variables': ['Illite'
'outcome variables': `Life Exp' umptions = {
 'Type I (False Positive) Error Rate': 0.05
 'normal distribution': ['Illiteracy'] 'name' : 'Life Exp', 'data type' : 'ratio',

import tea tea.data('statex77.csv') variables = ['name' : 'Illiteracy', 'data type' : 'interval', 'categories' : [0, 100] 'name' : 'HS Grad', 'data type' : 'ratio', 'name' : 'Life Exp', 'data type' : 'ratio', tea.define_variables(variables) study_design = { 'study type': 'observational study', 'contributor variables': ['Illiteracy', 'HS Grad'], 'outcome variables': 'Life Exp' tea.define_study_design(experimental_design) assumptions = { 'Type I (False Positive) Error Rate': 0.05, 'normal distribution': ['Illiteracy'] tea.assume (assumptions) tea.hypothesize(['Illiteracy', 'Life Exp'], ['Illiteracy ~ Life Exp']) tea.assume(assumptions)

Running under STRICT mode.

User asserted property: is_normal, but is NOT supported by statistical checking.

Tea will override user assertion.

Results:

Test: kendalltau_corr
***Test assumptions:

Exactly two variables involved in analysis: Illiteracy, Life

Continuous OR ORDINAL (not nominal) data: Illiteracy Continuous OR ORDINAL (not nominal) data: Life Exp

***Test results:

name = Kendall's Tau Correlation test_statistic = -0.42852098220257756 p_value = 2.0419780693976688e-05 adjusted_p_value = 2.0419780693976688e-05 alpha = 0.05 Null hypothesis = There is no relationship between Illiteracy

and Life Exp.

Interpretation = Reject the null hypothesis at alpha = 0.05.

There is a relationship between Illiteracy and Life Exp.

Test: spearman_corr

***Test assumptions:

Exactly two variables involved in analysis: Illiteracy, Life

Continuous OR ORDINAL (not nominal) data: Illiteracy Continuous OR ORDINAL (not nominal) data: Life Exp

***Test results:

name = Spearman's R Correlation test_statistic = -0.5553734920297565 p_value = 2.8357505361058644e-05 adjusted_p_value = 2.8357505361058644e-05 alpha = 0.05

Null hypothesis = There is no relationship between Illiteracy and Life Exp.

Interpretation = Reject the null hypothesis at alpha = 0.05. There is a relationship between Illiteracy and Life Exp.

++++++++++

tea.assume(assumptions, 'relaxed')

Running under RELAXED mode.

User asserted property: is_normal, but is NOT supported by statistical checking.

(e)

User assertion will be considered true.

Results:

Test: pearson_corr

***Test assumptions:

Exactly two variables involved in analysis: Illiteracy, Life

=xp

Continuous (not categorical) data: Illiteracy Continuous (not categorical) data: Life Exp Normal distribution: Illiteracy

Normal distribution: Life Exp

***Test results:

name = Pearson Correlation

test_statistic = -0.5884779255792575 p_value = 6.9692504664204045e-06

adjusted_p_value = 6.9692504664204045e-06

alpha = 0.05

Null hypothesis = There is no relationship between Illiteracy and Life Exp.

Interpretation = Reject the null hypothesis at alpha = 0.05. There is a relationship between Illiteracy and Life Exp.

Test: kendalltau_corr

***Test assumptions:

Exactly two variables involved in analysis: Illiteracy, Life

Continuous OR ORDINAL (not nominal) data: Illiteracy Continuous OR ORDINAL (not nominal) data: Life Exp

***Test results:

name = Kendall's Tau Correlation test_statistic = -0.42852098220257756 p_value = 2.0419780693976688e-05 adjusted_p_value = 2.0419780693976688e-05 alpha = 0.05

Null hypothesis = There is no relationship between Illiteracy and Life Exp.

Interpretation = Reject the null hypothesis at alpha = 0.05. There is a relationship between Illiteracy and Life Exp.

Test: spearman_corr ***Test assumptions:

Exactly two variables involved in analysis: Illiteracy, Life Exp

Continuous OR ORDINAL (not nominal) data: Illiteracy Continuous OR ORDINAL (not nominal) data: Life Exp

***Test results:

name = Spearman's R Correlation test_statistic = -0.5553734920297565 p_value = 2.8357505361058644e-05 adjusted_p_value = 2.8357505361058644e-05 alpha = 0.05 Null hypothesis = There is no relationship between Illiteracy

and Life Exp.

Interpretation = Reject the null hypothesis at alpha = 0.05. There is a relationship between Illiteracy and Life Exp.

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(g)