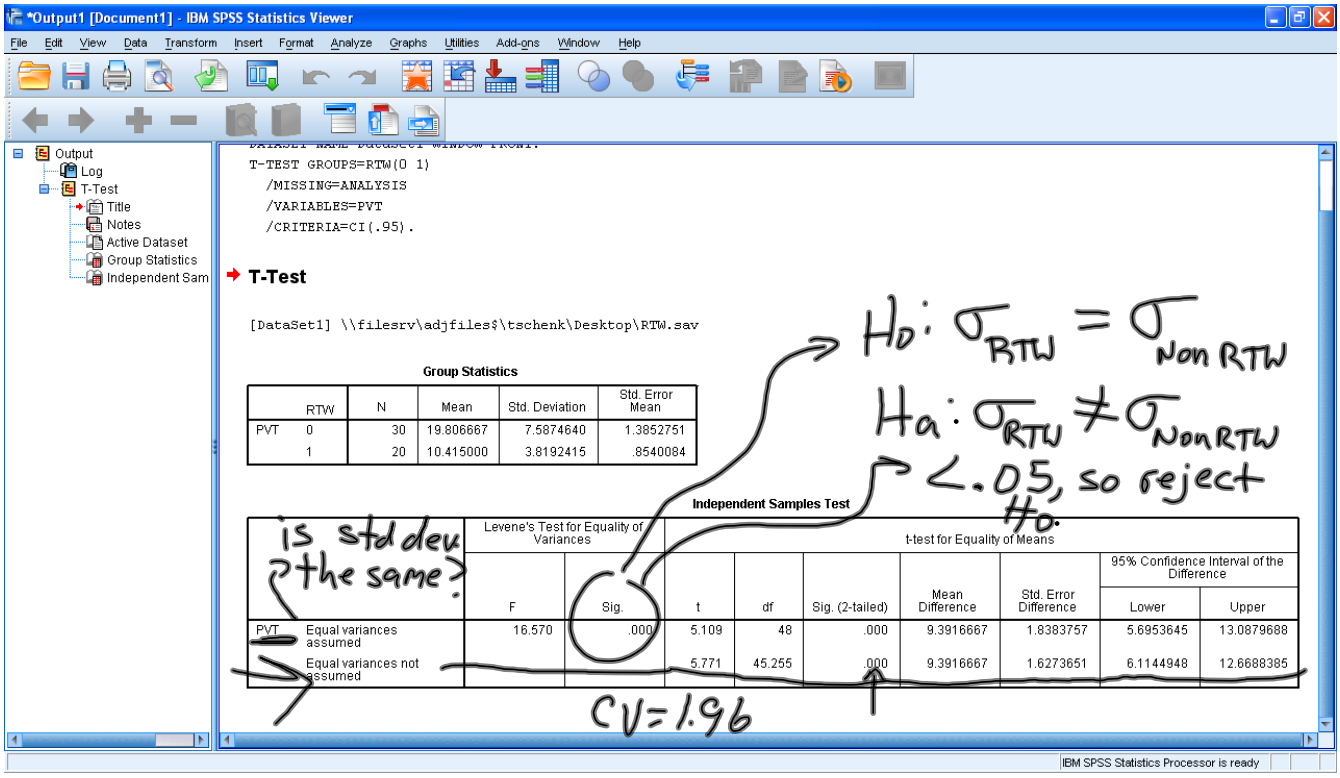
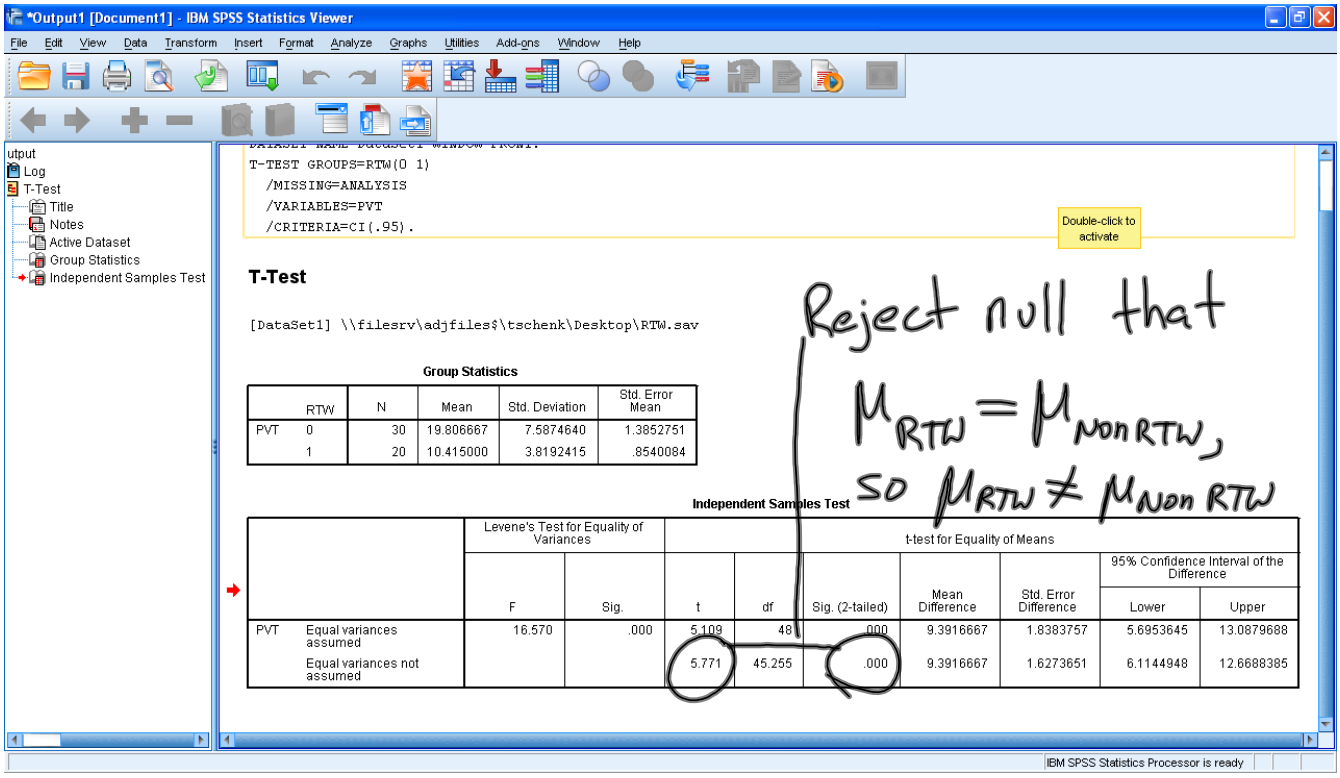
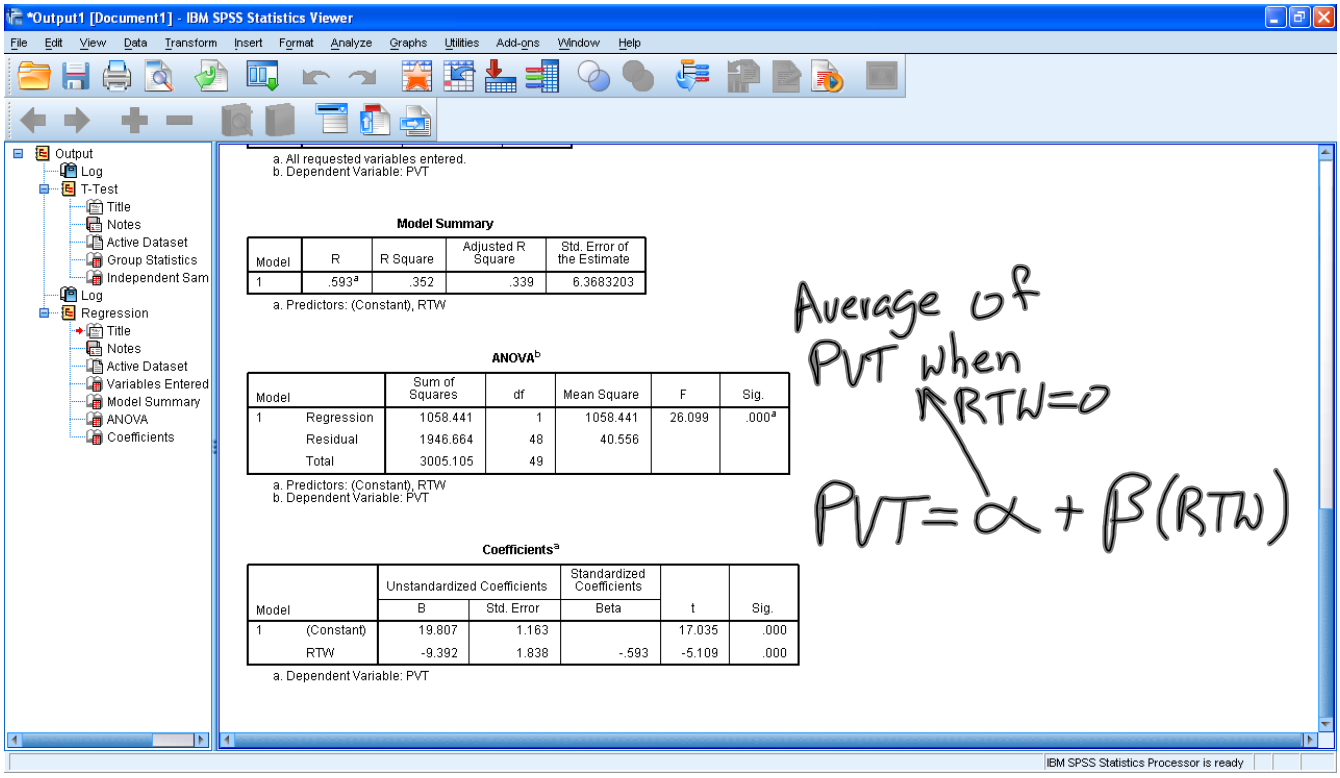
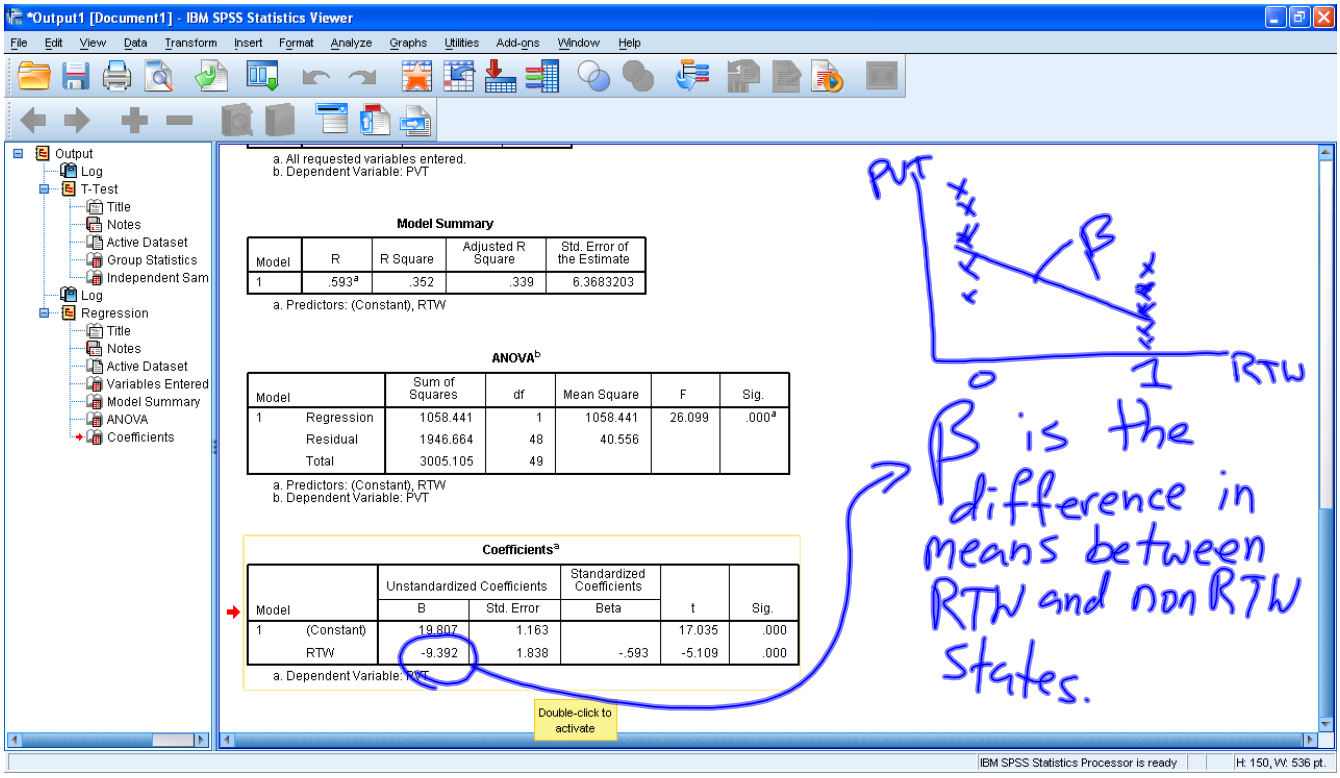

*Output1 [Document1] - IBM SPSS Statistics Viewer
File Edit View Data Transform Insert Format Analyze Graphs Utilities Add-ons Window Help
Output
Log
T-Test
Title
Notes
Active Dataset
Group Statistics
Independent Sam
T-TEST GROUPS=RTW(0 1)
/MISSING=ANALYSIS
/VARIABLES=PVT
/CRITERIA=CI(.95).
T-Test
[DataSet1] \\filesrv\adjfiles$\tschenk\Desktop\RTW.sav
Group Statistics
RTW N Mean Std. Deviation Std. Error Mean
PVT 0 30 19.806667 7.5874640 1.3852751
1 20 10.415000 3.8192415 .8540084
Independent Samples Test
Levene's Test for Equality of Variances
t-test for Equality of Means
F Sig. t df Sig. (2-tailed) Mean Difference Std. Error Difference 95% Confidence Interval of the Difference Lower Upper
PVT Equal variances assumed 16.570 .000 5.109 48 .000 9.3916667 1.8383757 5.6953645 13.0879688
Equal variances not assumed 5.771 45.255 .000 9.3916667 1.6273651 6.1144948 12.6688385
Ho: σRTW = σNon RTW
Ha: σRTW ≠ σNonRTW
< .05, so reject Ho.
is std dev the same?
CV = 1.96
IBM SPSS Statistics Processor is ready


*Output1 [Document1] - IBM SPSS Statistics Viewer
File Edit View Data Transform Insert Format Analyze Graphs Utilities Add-ons Window Help
utput
Log
T-Test
Title
Notes
Active Dataset
Group Statistics
Independent Samples Test
T-TEST GROUPS=RTW(0 1)
/MISSING=ANALYSIS
/VARIABLES=PVT
/CRITERIA=CI(.95).
Double-click to activate
T-Test
[DataSet1] \\filesrv\adjfiles$\tschenk\Desktop\RTW.sav
Group Statistics
RTW N Mean Std. Deviation Std. Error Mean
PVT 0 30 19.806667 7.5874640 1.3852751
1 20 10.415000 3.8192415 .8540084
Independent Samples Test
Levene's Test for Equality of Variances
t-test for Equality of Means
F Sig. t df Sig. (2-tailed) Mean Difference Std. Error Difference 95% Confidence Interval of the Difference Lower Upper
PVT Equal variances assumed 16.570 .000 5.109 48 .000 9.3916667 1.8383757 5.6953645 13.0879688
Equal variances not assumed 5.771 45.255 .000 9.3916667 1.6273651 6.1144948 12.6688385
Reject null that
$\mu_{RTW} = \mu_{NonRTW}$,
so $\mu_{RTW} \neq \mu_{NonRTW}$
IBM SPSS Statistics Processor is ready


*Output1 [Document1] - IBM SPSS Statistics Viewer
File Edit View Data Transform Insert Format Analyze Graphs Utilities Add-ons Window Help
Output
Log
T-Test
Title
Notes
Active Dataset
Group Statistics
Independent Sam
Log
Regression
Title
Notes
Active Dataset
Variables Entered
Model Summary
ANOVA
Coefficients
a. All requested variables entered.
b. Dependent Variable: PVT
Model Summary
Model | R | R Square | Adjusted R Square | Std. Error of the Estimate
1 | .593[a] | .352 | .339 | 6.3683203
a. Predictors: (Constant), RTW
ANOVA[b]
Model | | Sum of Squares | df | Mean Square | F | Sig.
1 | Regression | 1058.441 | 1 | 1058.441 | 26.099 | .000[a]
Residual | 1946.664 | 48 | 40.556
Total | 3005.105 | 49
a. Predictors: (Constant), RTW
b. Dependent Variable: PVT
Coefficients[a]
Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig.
1 | (Constant) | 19.807 | 1.163 | | 17.035 | .000
RTW | -9.392 | 1.838 | -.593 | -5.109 | .000
a. Dependent Variable: PVT
Average of PVT when RTW=0
PVT = α + β(RTW)
IBM SPSS Statistics Processor is ready

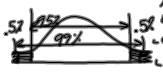

*Output1 [Document1] - IBM SPSS Statistics Viewer
File Edit View Data Transform Insert Format Analyze Graphs Utilities Add-ons Window Help
Output
Log
T-Test
Title
Notes
Active Dataset
Group Statistics
Independent Sam
Log
Regression
Title
Notes
Active Dataset
Variables Entered
Model Summary
ANOVA
Coefficients
a. All requested variables entered.
b. Dependent Variable: PVT
Model Summary
Model | R | R Square | Adjusted R Square | Std. Error of the Estimate
1 | .593a | .352 | .339 | 6.3683203
a. Predictors: (Constant), RTW
ANOVAb
Model | | Sum of Squares | df | Mean Square | F | Sig.
1 | Regression | 1058.441 | 1 | 1058.441 | 26.099 | .000a
Residual | 1946.664 | 48 | 40.556
Total | 3005.105 | 49
a. Predictors: (Constant), RTW
b. Dependent Variable: PVT
Coefficients a
Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig.
1 | (Constant) | 19.807 | 1.163 | | 17.035 | .000
RTW | -9.392 | 1.838 | -.593 | -5.109 | .000
a. Dependent Variable: PVT
Double-click to activate
PVT
B
0
1
RTW
B is the difference in means between RTW and non RTW states.
IBM SPSS Statistics Processor is ready
H: 150, W: 536 pt.

BSAD 239
PSYC 239
POLS 239

Schenk

Last class

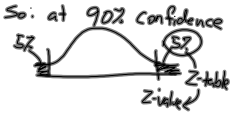
- Hypothesis test and statistical tests
  - Confidence levels & Confidence intervals
    - e.g. 95% confidence level (5% margin of error)



Confidence levels determine the critical values.

→ Set confidence level, then use Z-table to determine CV.

So: at 90% confidence



Confidence is related to sample size.

$$\text{Confidence Interval} = \beta \pm \overset{(CV)}{t} * SE$$

$$\rightarrow SE = \frac{\sigma}{\sqrt{n}}$$

As $n \uparrow$, SE must $\downarrow$

↓

Which produces a narrow confidence interval.

Statistical tests

1. Comparing a mean of a sample/population to a number.
   (e.g. is the avg age of this class equal to 21?)
   → t-test
2. Is the average of a group the same between two periods?
   - Paired t-test
3. Are the means of two groups the same?
   e.g. is the avg PVT the same between RTW and non-RTW states?
4. The tests 1 through 3 are subsets of regressions.
   ↳ The benefit of regression is that it can easily handle multiple variables

---

Psychology

- Framing as

Lotto: What would you prefer?

→ A) $500

B) A 50% chance at $1,000

Insurance: What would you prefer

A) To lose $500

→ B) A 50% chance of losing $1,000

Monty Hall Problem