Practical Extension of Introductory Statistics in Psychology using R : : CHEAT SHEET

Introductory Statistics

- One Sample t-test
- Dependent Samples t-test
- Independent Samples t-test
- One-Way Analysis of Variance (ANOVA)
- Factorial ANOVA
- Correlation
- Simple Linear Regression

General Linear Model

Ordinary Least Squares (OLS) Regression

$$Y = \beta X + \varepsilon$$

Introductory Statistics

Regression

```
lm()
```

Correlation

```
cor.test()
```

One, Dependent, or Independent Samples *t*-test

```
t.test()
```

One-Way or Factorial Analysis of Variance (ANOVA)

```
aov()
```

Model as GLM

Use lm() function for all the traditional univariate statistics

```
model <- lm()
```

View Results

ANOVA Source Table

```
Anova(model, type = 3)
```

Coefficients Table

```
summary(model)
```

Book Examples

Regression

```
lm(formula = salary ~ 1 + yrs.since.phd, data = datasetSalaries)
```

Correlation

```
lm(formula = scale(salary) ~ 1 + scale(yrs.since.phd), data = datasetSalaries)
```

One Sample *t*-test

```
lm(formula = salary - 50211 ~ 1, data = datasetSalaries)
```

Dependent Samples *t*-test

```
lm(formula = PostWeight - PreWeight ~ 1, data = datasetSalaries)
```

Independent Samples *t*-test

```
lm(formula = salary ~ 1 + discipline, data = datasetSalaries)
```

One-Way ANOVA

```
lm(formula = salary ~ 1 + rank, data = datasetSalaries)
```

Factorial ANOVA

```
lm(formula = salary ~ 1 + discipline * sex, data = datasetSalaries)
```

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