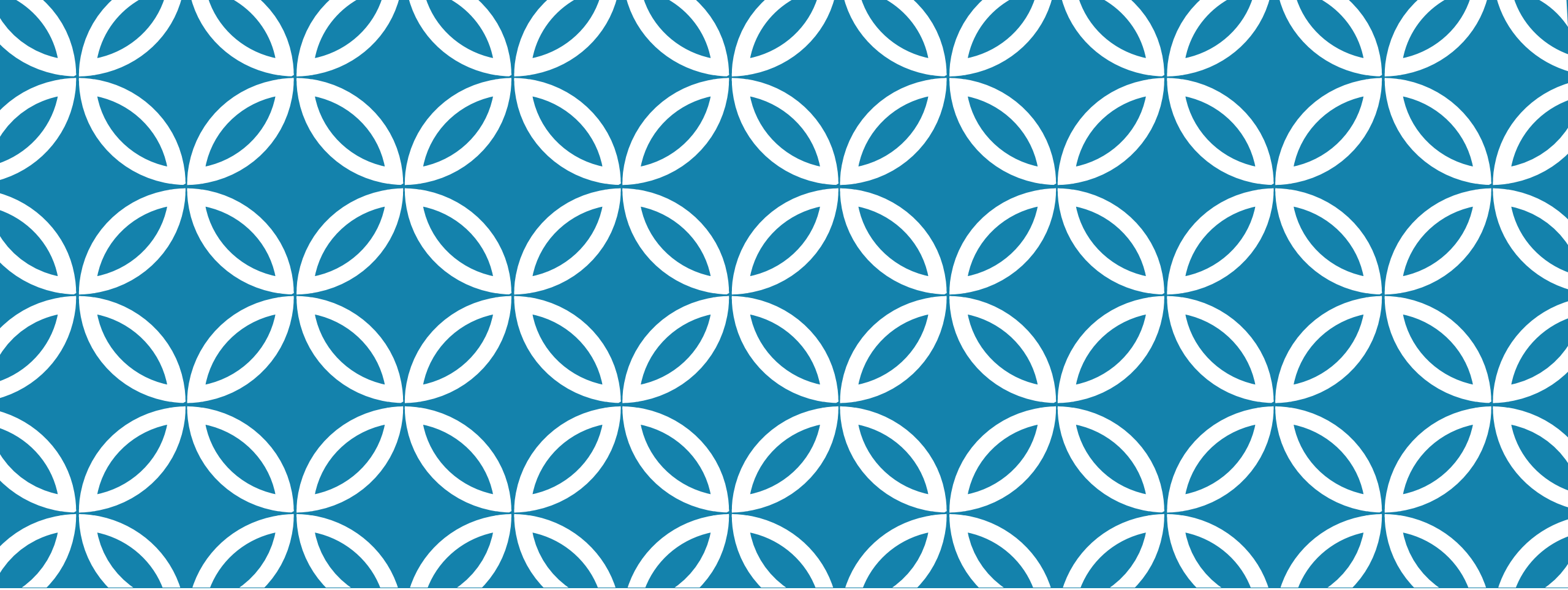

PRACTICAL GUIDE TO BIVARIATE TESTS

VARIABLES

Chi Square Test of Independence (X^2)
- IV: categorical (e.g. nominal, ordinal)
- DV: categorical (e.g. nominal, ordinal)

Independent Samples T-test (*t*)
- IV: categorical (e.g. nominal, ordinal)
  - Only two groups/categories compared
- DV: continuous (e.g. interval-ratio)

One-Way Analysis of Variance / ANOVA (*F*)
- IV: categorical (e.g. nominal, ordinal)
  - Three or more groups/categories compared
- DV: continuous (e.g. interval-ratio)

Correlation (*r*)
- IV: continuous (e.g. interval-ratio)
- DV: continuous (e.g. interval-ratio)

	Dependent Variable	
Independent Variable	Nominal or Ordinal	Interval-Ratio

Nominal or Ordinal	• Chi Square (X^2)	• Independent Samples t-Test (*t*):
		  • only 2 groups (categories) for IV
		• One-Way ANOVA (*F*):
		  • 3 or more groups (categories) for IV

Interval-Ratio	N/A	• Correlation (*r*)

HYPOTHESES

Chi Square Test of Independence (X^2)

- H_0: No relationship between the variables / variables are independent of one another
- H_1: Relationship between variables / variables are NOT independent of one another

Independent Samples T-test (t)

- H_0: No mean difference between two groups / mean of the DV does NOT vary by group
- H_1: Mean difference between two groups / mean of the DV DOES vary by group

One-Way Analysis of Variance / ANOVA (F)

- H_0: No mean difference between three or more groups / mean of the DV does NOT vary by group
- H_1: Mean difference between three or more groups / mean of the DV DOES vary by group

Correlation (r)

- H_0: No relationship between the variables / variables are unrelated
- H_1: Relationship between the variables / variables are related

ALPHA (α) AND SIGNIFICANCE (*p*) LEVELS

Alpha (α)

- Chance of Type I error (reject null when not supposed to) that we're willing to tolerate
- Conventionally: α = .05 (5 percent chance of Type I error)
- Threshold/cutoff/finish line for our obtained value to reach
  - beyond which difference/association is considered so extremely different from the null that that we reject the null hypothesis
- Selected beforehand

Significance level (*p*)

- Probability that the null hypothesis is true, given the data
- Compared to alpha (α)
- If small (smaller than our prior selected alpha), the null hypothesis is very unlikely, and can reject
- Determined by the data