





Comparison of univariate distribution

1. Shape of the distribution: Make a chart – CROSSTAB / CELL COU

symmetric 	asymmetric 
	

2. Central tendency: ... \STA MEA MEDIAN MODE

Binary Variable	Qualitative variable	Quantitative variable with reasonable number of values	Quantitative variable with many values – continuous
<i>Proportion of a single category</i>	<i>Mode</i>	<i>Mean, Median, Mode</i>	<i>Mean (Median)</i>

Vocabulary







<i>The same- equal</i>	<i>Similar, close</i>	<i>Different: higher, lower</i>
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3. Dispersion: ... \STA VAR

Binary Variable	Qualitative variable	Quantitative variable with reasonable number of values	Quantitative variable with many values – continuous
-	<i>Frequency of dominant category</i>	<i>Variance Standard Deviation Min/MAX</i>	<i>Variance Standard Deviation Min/MAX</i>

Comparison of bivariate distribution




1. Shape of the dependency = shape of regression function

lack of dependency 	increasing 	decreasing 	u-shape 	Parabolic 	irregular 
<i>Y does not depend on X</i>	<i>Y positively depends on X; E(Y X) is increasing function of X</i>	<i>Y negatively depends on X; E(Y X) is decreasing function of X</i>	<i>Y is curvilinearly dependent on X</i>	<i>Y is curvilinearly dependent on X</i>	<i>Y depends on X in nonregular way</i>

2. Strength of dependency in the 1st type regression (of means)

In A population Y depends on X: {stronger/weaker/similarly} than in population B, as measured by η^2 coefficient.

3. Linear regression – type of dependency

lack of dependency: $b=0$ 	increasing $b > 0$ 	decreasing $b < 0$ 
<i>Y and X are not linearly correlated</i>	<i>Y and X are positively linearly correlated</i>	<i>Y and X are negatively linearly correlated</i>

4. Linear regression – strength of dependency

In A population Y and X are {stronger/weaker/similarly} linearly correlated than in population B, as measured by Pearson R^2 (R) coefficient.

5. To what degree 1st type regression of Y in regard to X has linear form

In A population regression of means of Y in regard to X is {more/less/similarly} linear than in population B, as measured by R^2/η^2 ratio.

Comparison of multivariate models

Goodness of fit of the model –strength of multiple linear dependency

- In A population Y is {*stronger/weaker/similarly*} linearly dependent on X_1, X_2, X_3, X_4 than in population B, as measured by multiple correlation coefficient. R^2 ;
- In population A multiple linear model predicts (*better/worse/similarly*) dependent phenomenon than in B; as shown by multiple correlation coefficient R^2
- In population A phenomenon Y is (*stronger/weaker/similarly*) determined by predictors X_1, X_2, X_3, X_4 than in population B, as shown by multiple correlation coefficient. R^2

Direction of dependency of dependent variable on each of predictor

In linear model for population A phenomenon Y depends on X_i (*positively/negatively*) while in model for population B Y depends on X_i (*positively/negatively*) [compare signs of B or beta for each predictor]

Relative weights of predictors in determining dependent variable predictions

Relative weight of X_i in the linear model determining predictions of phenomenon Y is (*higher/lower/similar*) in population A than in population B [compare values of beta for each predictor]

Exploratory power of predictors

For population A predictor X_i accounts for (*more/less/similar*) part of variance of Y explained by the model than for population B, as shown by R^2 increase caused by introducing X_i to the linear model of Y [compare R^2 increments for all X_i under fixed order of introducing them to equations]

Outline of a table summarizing results (for both populations)

predictor	Final model		Successive models	
	B	beta	R^2	R^2 increase
Gender [0=female, 1=male]	1115	0,415	17,6%	17,6%
Father's education level [1-5]	5	0,004	18,1%	0,5%
Place of residence [0=rural, 1=urban]	-27	-0,008	18,1%	0,0%
Respondent's education level [years of schooling]	70	0,154	20,0%	1,9%

Chart representing explanatory power of the whole model and individual predictors (for both populations)

