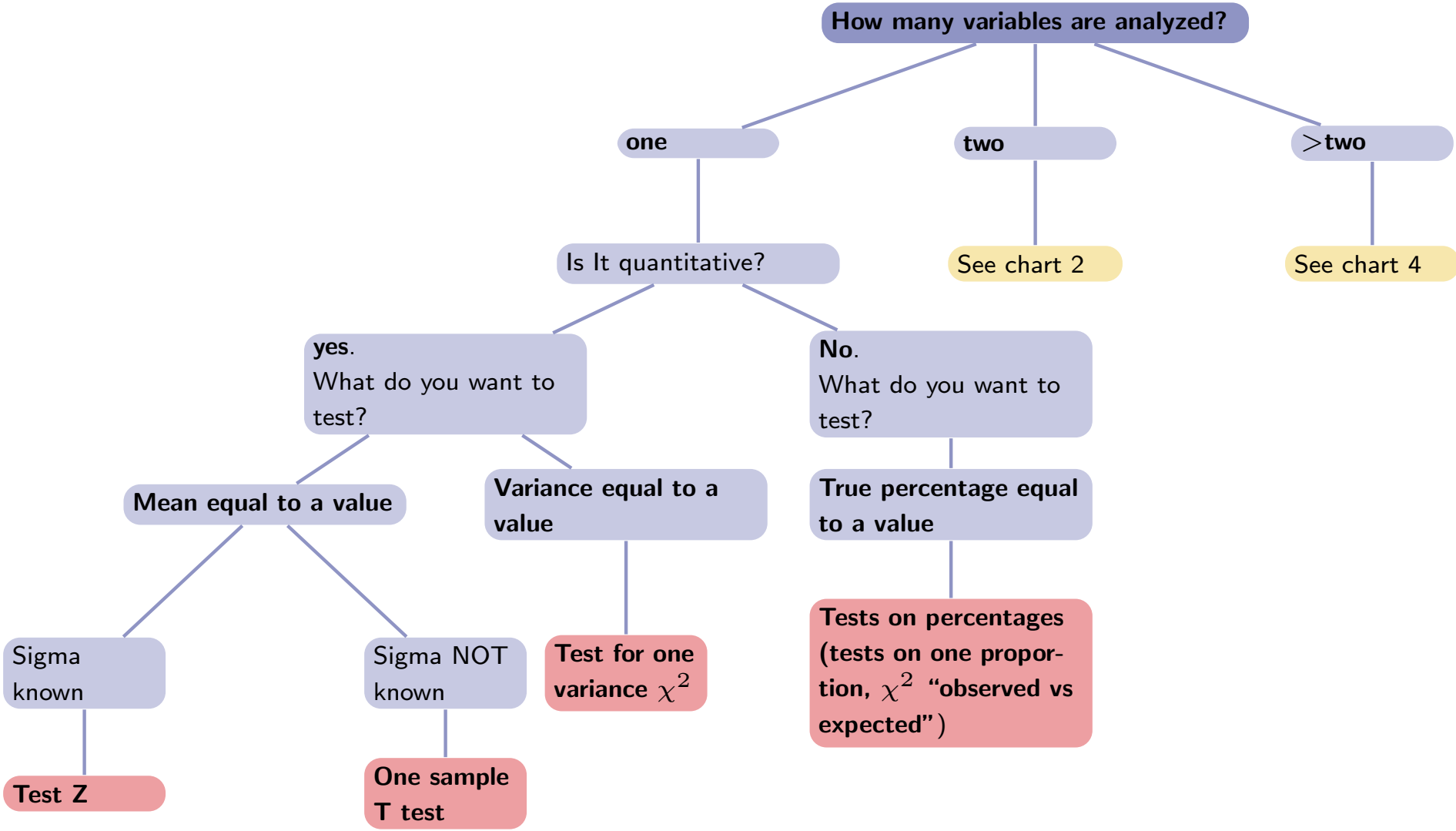
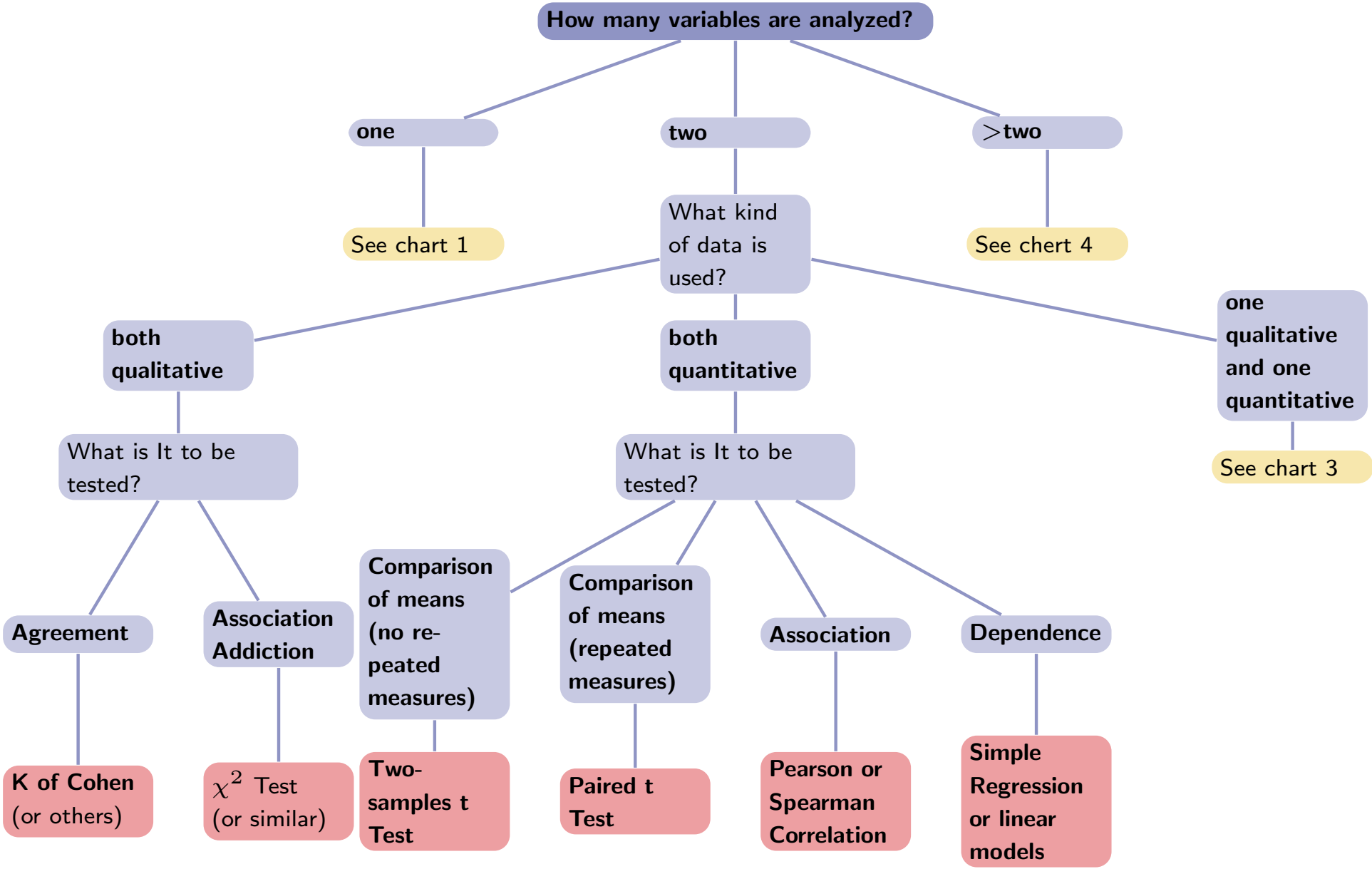
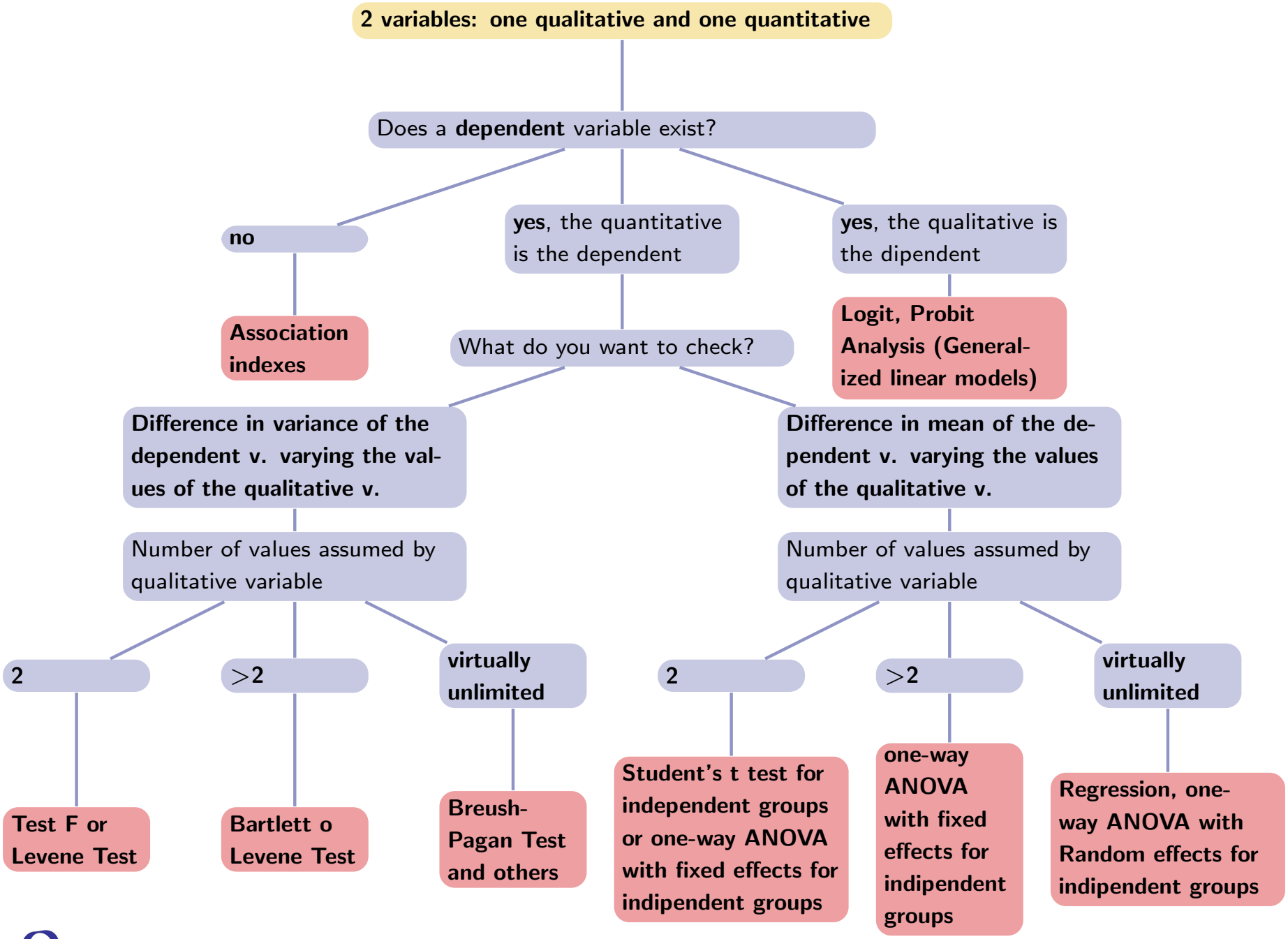
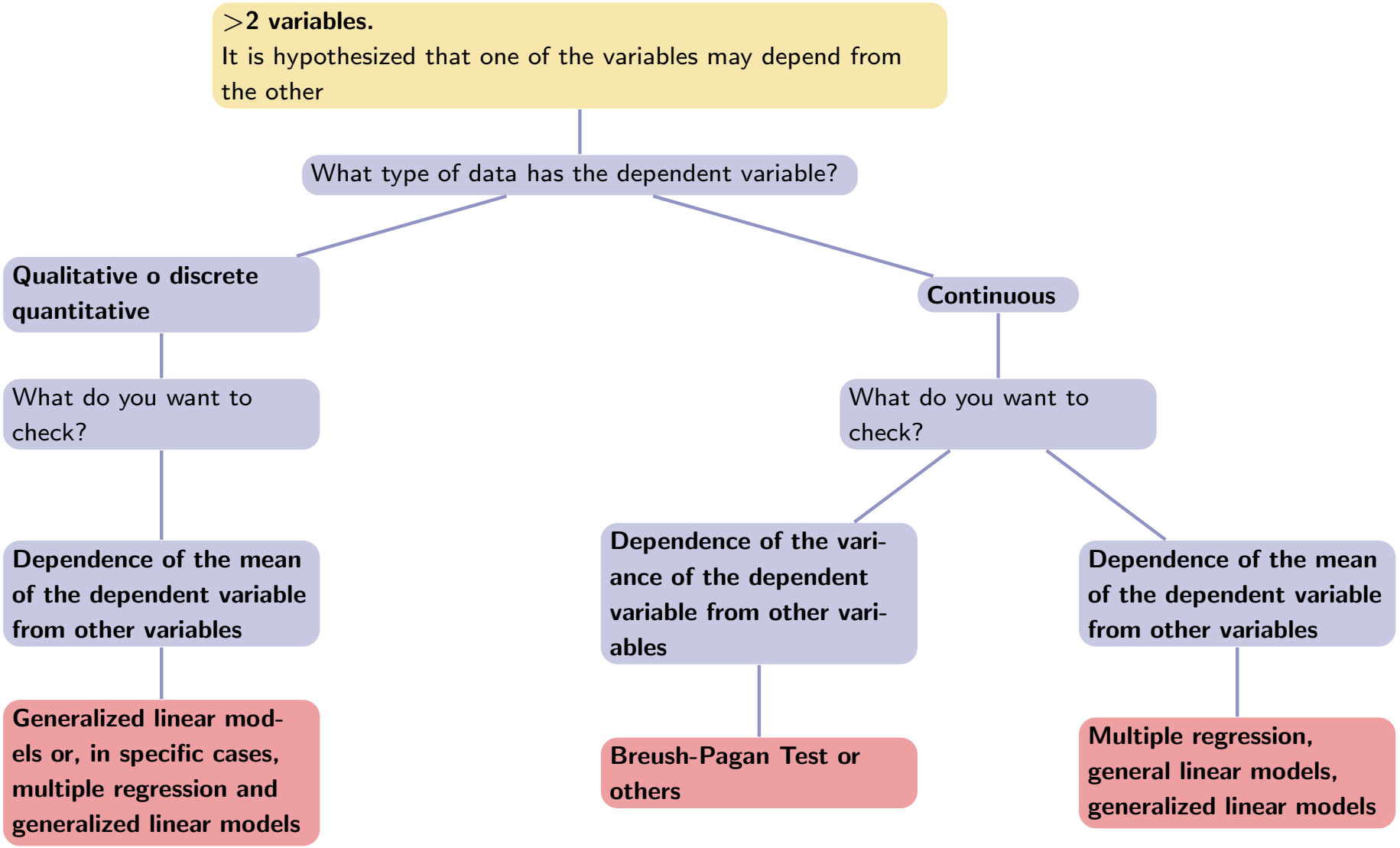
Decision Tree of statistical tests

Choice of the method according to the purpose of the data


How many variables are analyzed?
one
two
>two
Is It quantitative?
See chart 2
See chart 4
yes.
What do you want to test?
No.
What do you want to test?
Mean equal to a value
Variance equal to a value
True percentage equal to a value
Sigma known
Sigma NOT known
Test for one variance χ^2
Tests on percentages (tests on one proportion, χ^2 "observed vs expected")
Test Z
One sample T test


How many variables are analyzed?
one
two
>two
See chart 1
What kind of data is used?
See chert 4
both qualitative
both quantitative
one qualitative and one quantitative
See chart 3
What is It to be tested?
What is It to be tested?
Agreement
Association Addiction
Comparison of means (no re-peated measures)
Comparison of means (repeated measures)
Association
Dependence
K of Cohen (or others)
χ^2 Test (or similar)
Two-samples t Test
Paired t Test
Pearson or Spearman Correlation
Simple Regression or linear models


2 variables: one qualitative and one quantitative
Does a dependent variable exist?
no
yes, the quantitative is the dependent
yes, the qualitative is the dipendent
Association indexes
What do you want to check?
Logit, Probit Analysis (Generalized linear models)
Difference in variance of the dependent v. varying the values of the qualitative v.
Difference in mean of the dependent v. varying the values of the qualitative v.
Number of values assumed by qualitative variable
Number of values assumed by qualitative variable
2
>2
virtually unlimited
2
>2
virtually unlimited
Test F or Levene Test
Bartlett o Levene Test
Breush-Pagan Test and others
Student's t test for independent groups or one-way ANOVA with fixed effects for indipendent groups
one-way ANOVA with fixed effects for indipendent groups
Regression, one-way ANOVA with Random effects for indipendent groups


>2 variables.
It is hypothesized that one of the variables may depend from the other
What type of data has the dependent variable?
Qualitative o discrete quantitative
Continuous
What do you want to check?
What do you want to check?
Dependence of the mean of the dependent variable from other variables
Dependence of the variance of the dependent variable from other variables
Dependence of the mean of the dependent variable from other variables
Generalized linear models or, in specific cases, multiple regression and generalized linear models
Breush-Pagan Test or others
Multiple regression, general linear models, generalized linear models