STAT 426

Wenxiao Yang[*]

[*]Department of Mathematics, University of Illinois at Urbana-Champaign

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1 Basic of Categorical Data

1.1 Variable Measurement
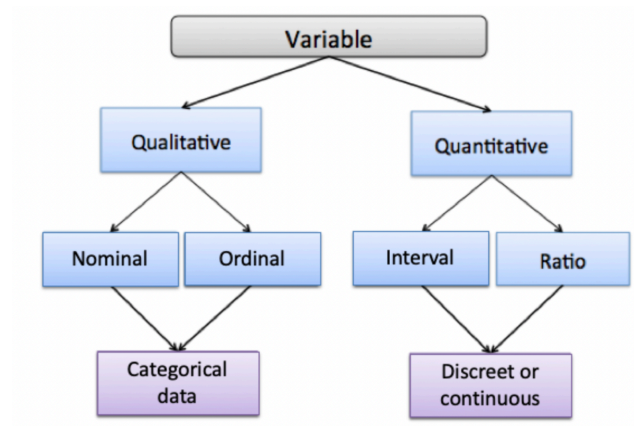

图 1: Variable Type

a) Nominal: Categories do not have a natural order. Ex. blood type, gender.

b) Ordinal: Categories have a natural order. Ex. low/middle/high education level

c) Interval: There is a numerical distance (difference between two different values is meaningful) between any two values. Ex. blood pressure level, 100 blood pressure doesn't mean the double degree of 50 pressure.

d) Ratio: An interval variable where ratios are valid (presence of absolute zero, i.e. zero is meaningful). Ex. weight, 4g is double degree of 2g.

A variable's level of measurement determines the statistical methods to be used for its analysis.
Variables hierarchy: Ratio > Interval > Ordinal > Nominal
Statistical methods applied to variables at a lower level can be used with variables at a higher level, but the contrary is not true.