Types of Variables

Independent variable	**Variable that a researcher changes.** ***e.g. application of fertilizer x in this experiment***
Dependent variable	Variable affected by change in the independent variable. *e.g. plant growth, number of leaves, number of fruits etc.*
Nominal variable **(≡ Categorical variable)**	Named variables *e.g. place of residence; gender; political preferences*
Ordinal variable **(≡ Discrete variable)**	Named + ordered variables e.g. grades, satisfaction, happiness
Interval variable	Named + ordered + proportionate interval between variables *e.g. temperature, time, calendar years, income*
Ratio variable	Named + ordered + proportionate interval between variables + has a true zero point (where 0 = non-existence). *E.g. What is your daughter's current height? (<5 ft, 5'1-5'5, 5'6-6, >6')*
Continuous variable (means, normal distribution)	Any value within a range of values (fractions, decimals…).
Discrete variable **(≡ Ordinal variable)** (medians, skewed, non-normal,)	Whole numbers (integers). *e.g. ranks, scores*
Categorical variable (proportions, dichotomous, binomial)	Qualitative values representing one of a finite number of categories. *e.g. species (possible values: human, dolphin…)*
Binary Response variable	A response variable that has only two possible outcomes. *e.g. patient rejects kidney = 1, patient does not reject kidney = 0*
Random variable	Assigns a number to every outcome in the sample space of an experiment. *e.g. in the experiment of a coin toss, a random variable may assign 1 to heads or 0 to tails.*
Response variable (Y) (≡ Outcome variable)	The variable being modeled or predicted. *E.g. student's grade*
Predictor variable (X) (≡ Exposure variable)	The variable used to predict the response. *E.g. hours a student spends studying*
Standardized variable	A variable that has been adjusted to mean = 0, standard deviation = 1.