Variable Types

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NHANES Data

ID	BMI	Race*	Age	Adult**
62161	23.3	3	22	1
62163	17.3	5	14	0
62164	23.2	3	44	1
62165	27.2	4	14	0
62202	24.7	1	36	1
…	…	…	…	…

*Race is coded such that 1: Mexican American, 2: Other Hispanic, 3: Non-Hispanic White, 4: Non-Hispanic Black, 5: Other

**Adult is coded such that 0: Age is less than 18, 1: Age is greater than or equal to 18,

Think about it…

Could we reasonably compute the average response for each of these two variables?

BMI	Race
23.3	3
17.3	5
23.2	3
27.2	4
24.7	1
…	…
Yes!	No*

Quantitative Variables

- Numerical, measurable quantities in which arithmetic operations often make sense

- Continuous – could take on any value within an interval, many possible values
- Discrete – countable value, finite number of values

Categorical (or Qualitative) Variables

- Classifies individuals or items into different groups

- Ordinal – groups have an order or ranking
- Nominal – groups are merely names, no ranking

IVQ Review

Although age is reported as an integer, it can be modeled as a continuous variable

Age	Adult*
22	1
14	0
44	1
14	0
36	1
…	…

*Adult is coded such that 0: Age is less than 18, 1: Age is greater than or equal to 18,

IVQ Review

- Although age is reported as an integer, it can be modeled as a continuous variable
- Age (a quantitative variable) can be transformed into a categorical variable

Age	Adult*
22	1
14	0
44	1
14	0
36	1
…	…

*Adult is coded such that 0: Age is less than 18, 1: Age is greater than or equal to 18,

Variable Types

- **Different variables provide us with different information which changes how we view and summarize the data**

- **Categorical**
  - Ordinal
  - Nominal
- **Quantitative**
  - Continuous
  - Discrete