Institute of Psychiatry, Psychology and Neuroscience

Module Title: Introduction to Statistics

Session Title: Practical Quiz 1

Topic title: Measurement and graphical representations of data

Practical Quiz 1

Welcome to the Topic 1 Practical Quiz

For this quiz, the data set consists of n=120 members of a gym. The variables being measured are:

- **gender**: the reported gender (1: male, 2: female, 3: other)
- **age**: the member's age (in years)
- **gym**: how often they visit the gym (1=once per week, 2=twice per week, 3=three or more times per week)
- **alc**: alcohol units per week
- **income**: their gross annual income (1:up to £10,000, 2: £10,001 to £20,000, 3: £20,001 to £30,000, 4: £30,001 to £40,000, 5: £40,001 to £50,000, 6: more than £60,000)

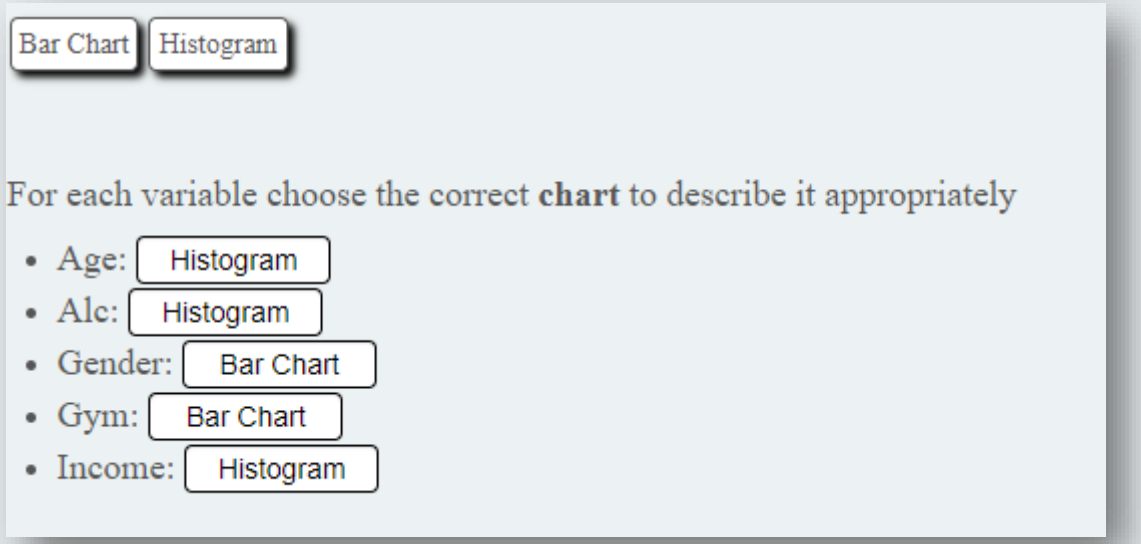
Question 1

Ordinal | Continuous | Interval | Categorical | Numerical | Nominal

To begin with, identify the type of variables in the dataset. Please indicate whether the variable is **'Categorical'** or **'Numerical'** first. Then the type of variable: **'Nominal, Ordinal, Interval, Discrete, Continuous'**

- gender is a Categorical Nominal variable
- age is a Numerical Continuous variable
- gym is a Categorical Ordinal variable
- alc is a Numerical Continuous variable
- income is a Numerical Interval variable

Question 2


Bar Chart
Histogram
For each variable choose the correct **chart** to describe it appropriately
Age: Histogram
Alc: Histogram
Gender: Bar Chart
Gym: Bar Chart
Income: Histogram

Question 3

range=9.90 | normally | symmetrical | 24.74 | 24.50 | 2 | 22.70 | non-symmetrical | SD=1.95

Check the data for typos, note them down and remove them. Then, describe the variable **age** and comment on its distribution, giving answers to 2 decimal places.

There was one typo for the variable 'age', of value [2].

The average age was [24.74] ([SD=1.95]) years. The variable 'age' is [normally] distributed. We can see in the histogram that it is [symmetrical] around the mean.

Question 4

non-normally | normally | below | symmetrical | non-symmetrical | above

Please comment on the distribution of **alc**.

The variable 'alc' is [non-normally] distributed. We can see in the histogram that it is [non-symmetrical] around the mean. Most of the values are [below] 10 units of alcohol.

Question 5

0 100% 3 27.5%

Please check the variable **'gym'** for typos, note them down and remove them if there were any. Comment on what you observe in the values of **'gym'**.

There were 3 typos in the database for this variable.

Among the people in the sample, 27.5% responded that they visit the gym three times or more in a week.

Question 6

a Categorical Nominal | a Normally Distributed Continuous | a Categorical Ordinal | Mean & Standard Deviation | Median & Range | Frequencies and Percentages | a Skewed Continuous

For each variable select the appropriate descriptive indices to describe the data.

- **gender** will be described with [Frequencies and Percentages] because it is [a Categorical Nominal] variable
- **age** will be described with [Mean & Standard Deviation] because it is [a Normally Distributed Continuous] variable
- **gym** will be described with [Frequencies and Percentages] because it is [a Categorical Ordinal] variable
- **alc** will be described with [Median & Range] because it is [a Skewed Continuous] variable
- **income** will be described with [Median & Range] because it is [a Skewed Continuous] variable

Question 7

40.0 | 94.9 | 19.7 to 29.6 | 5.0% | 64 | 23.5 to 26.2 | 2 | 5.1 | mean age=24.7 | £30001 and £40000 | median age = 24.5 | 48 | range=9.90 | up to £10000 | £40001 to £50000 | 6 | 53.3 | sd=1.95 | 10.2 | 5.1% | 40.7 | 54.2 | £20001 to £30000 | £10001 to £20000 | 89.8 | more than | 1.7 | 10.0

Check the remaining variables for any typos and delete them. In the 'clean' dataset, please describe the variables for gender, age and income.

The age of the individuals in our sample ranged from [19.7 to 29.6] years old with [mean age=24.7] ([sd=1.95])years.

In our sample, there were [64] individuals who identified themselves as females ([53.3]%), [48] individuals who identified themselves as males ([40.0]%), and [6] individuals who chose "other" as their gender identity ([5.0%]). There were [2] individuals who did not respond to this question ([1.7]%).

Most individuals earned between [£30001 and £40000] a year. Half of the individuals earned [more than] £30001 a year. [10.2]% of those who responded earned more than £60000.