

Please select the correct answer number for each question. There are more answers than questions. Answers may be repeated.

- 1) Nominal Level
- 2) Ordinal Level
- 3) Interval Level
- 4) Ratio Level
- 5) Sampling
- 6) Experiments
- 7) Simulation
- 8) Census
- 9)

1. Nominal Level:

The nominal level variables are organized into non-numeric categories that cannot be ranked or compared quantitatively. So it puts the variables into some categories. These categories of variables has no ordering and are mutually exclusive (i.e each case can only fit into one category) and exhaustive (i.e there is a category for each possible case). Eg: Shoes can be categorized based on type (sports, casual, others) or color (black, brown, others). These categories of shoes has no ordering (greater than, less than, equal to), are mutually exclusive and exhaustive. Hence the **type** variable for entity shoe is measured at nominal level.

2. Ordinal Level:

In the ordinal level of measurement, the variables are still classified into categories, but these categories are ordered and there is no equivalent distance between the categories. Eg: **class** variable for a person can have values like upper class, lower class, middle class etc. These values puts a person into a particular category and there is also a defined relative ordering between the classes like upper class > middle class > lower class. But there is no equivalent distance or boundaries between these classes, hence the class variable is measured at the ordinal level of measurement. The categories still must be mutually exclusive and exhaustive, but also have a logical order that allows them to be ranked.

3. Interval Level:

In the interval level of measurement, the variables are still classified into ordered categories, but there is an equivalent distance between these categories. This allows for a direct comparison between categories such that the difference between any two sequential data points is exactly the same as the difference between any other two sequential data points. The problem with interval level variables is that there is an arbitrary zero point i.e we can only add and subtract two interval

level variables but we can't multiply or divide them. Eg: Shoe size. We can say that the difference between size 3 and size 4 shoe is equal to the distance between size 7 and size 8 shoe, but size 6 shoe is not equal to 2 * size 3 shoe. Also, size 0 shoe does not mean that there is no shoe, its simply a shoe with zero size i.e an arbitrary zero point.

4. Ratio Level:

The ratio level variables have all of the characteristics of nominal, ordinal and interval variables, but also have a meaningful zero point. So the zero point is real and not arbitrary, and a value of zero actually means there is nothing. So we can add, subtract, divide and multiply the two ratio level variables. Eg: Weight of a person. It has a real zero point, i.e zero weight means that the person has no weight. Also, we can add, subtract, multiply and divide weights at the real scale for comparisons.

Among these four levels of measurement, the nominal level is considered to be the lowest. This is followed by the ordinal level, the interval level, and finally the ratio level, which is the highest level of measurement.

10)

Name – Nominal

Age – ratio

Year of birth – Interval

Height – ratio

Social Security Number – Interval

Color of your hair – Nominal

Color of your eyes – Nominal

Address – Nominal

Phone Number – Interval

Place of Birth – Nominal

Number of Years of Formal Education – Interval

College Major – Nominal

Distance from School – ratio

11)

Name – Nominal

Age – Interval

Year of birth – Interval

Height – Interval

Social Security Number – Interval

Color of your hair – Nominal

Color of your eyes – Nominal

Address – ratio

Phone Number – Interval

Place of Birth – Nominal

Number of Years of Formal Education – Interval

College Major – Nominal

Distance from School – ratio

12)

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Among these four levels of measurement, the nominal level is considered to be the highest. This is followed by the ordinal level, the interval level, and finally the ratio level, which is the lowest level of measurement.