

Frequency Distributions and Relative Frequency Distributions

- What is frequency?
- What is *relative* frequency???
- What is a distribution?
- What is the difference between a frequency distribution and a relative frequency distribution???

What is frequency???

- Frequency is
 - the number of occurrences within a given time period
 - the number of occurrences, in general
 - the number of responses of a particular type
 - the count for the responses of interest

What is frequency???

- Frequency is
 - a count

What is relative frequency???

- Relative frequency is
 - the proportion of occurrences of a particular type
 - the proportion of responses of a particular type
 - the proportion for the responses of interest

What is relative frequency???

- Relative frequency is
 - the ratio of the number of occurrences of a particular type to the total number of occurrences
 - the ratio of the number of occurrences of interest to the total number of occurrences

What is relative frequency???

- Relative frequency is
 - the ratio n/N for n the number of occurrences of a particular type and N the total number of occurrences

What is relative frequency???

Since relative frequency is a ratio n/N for n the number of occurrences of a particular type and N the total number of occurrences

- Relative frequency can be represented as
 - a fraction

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- Relative frequency can be represented as
 - a decimal value between 0 and 1, inclusive

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Since relative frequency is a ratio n/N for n the number of occurrences of a particular type and N the total number of occurrences

- Relative frequency can be represented as
 - a percentage

How should we represent relative frequency???

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- The decimal value????
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- NO!!**

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- NO!!**
NO!
Yes!

How should we represent relative frequency???

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For relative frequency, we will use the **percentage** representation.

What is a distribution?

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- A frequency distribution for a variable is a table providing the values of the variable and the corresponding frequency for each value of the variable.

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- A distribution is an arrangement of values of a variable showing their observed or theoretical frequency of occurrence
- A relative frequency distribution for a variable is a table providing the values of the variable and the corresponding relative frequency for each value of the variable.

Tabular representations of data

Frequency distribution

- Table
 - Two columns
 - ◉ First column: the values of the variable
 - ◉ Second column: frequency for each value of the variable

Frequency Distribution

Frequency distribution - a tabular representation

- **Table**
 - **Two columns**
 - First column: the values of the variable
 - Second column: frequency for each value of the variable
- **Must have**
 - **Title**
 - **Column headings**
 - First column: the variable
 - Second column: *Frequency or Count*

Relative Frequency Distribution

Relative Frequency distribution
- a tabular representation

- **Table**
 - **Two columns**
 - First column: the values of the variable
 - Second column: relative frequency for each value of the variable
- **Must have**
 - **Title**
 - **Column headings**
 - First column: the variable
 - Second column: *Relative Frequency, in percent*

Cautions about Frequency Distributions

- Frequency table
 - Lists counts for a variable
 - Two columns *only*
 - *First column* for the variable
 - *Second column* for the frequency
 - NO scratch work
 - NO tally column!!!
 - Must have title
 - Must label columns
 - The variable
 - Frequency or Count

Cautions about Relative Frequency Distributions

- Relative Frequency table
 - Lists relative frequency, *as a percentage*, for a variable
 - Two columns *only*
 - *First column* for the variable
 - *Second column* for the relative frequency
 - NO scratch work
 - NO tally column!!!
 - NO frequency column!!!
 - Must have title
 - Must label columns *and* include units, percent, for relative frequency

Cautions about Relative Frequency Distributions

- Percentage is not a unit
- The units for a percentage are percent.
- Note: Percentage contains the word percent.

Percentage??

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The units for a **percentage** are percent.