



Grow the Crop

Handout 27

More Information About Structuring Questionnaires

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A. More information about structuring questionnaires

Yes/no questions

Any question on a survey that has yes or no as a possible response is nominal, and so binomial statistics will be applied whenever a single yes/no question serves as the dependent variable or one of the dependent variables in an analysis.

Likert scales

A special kind of survey question uses a set of responses that are ordered so that one response is greater than another. The term Likert scale is named after the inventor, Rensis Likert, whose name is pronounced "Likert." Generally, this term is used for any question that has about 5 or more possible options.

An example might be: "How would you rate your department administrator?"

1=very incompetent, 2=somewhat incompetent, 3=neither competent, 4=somewhat competent, or 5=very competent.

Likert scales are either ordinal or interval, and many psychometricians would argue that they are interval scales because, when well-constructed, there is equal distance between each value. So, if a Likert scale is used as a dependent variable in an analysis, normal theory statistics are used such as regression would be used.

Physical measures

Most physical measures, such as height, weight, systolic blood pressure, distance etc., are interval or ratio scales, so they fall into the general "continuous" category. Therefore, normal theory type statistics are also used when such a measure serves as the dependent variable in an analysis.

Counts

Counts are tricky. If a variable is measured by counting, such as the case if a researcher is counting the number of days a hospital patient has been hospitalized, the variable is on a ratio scale and is treated as a continuous variable. So normal theory statistics, like correlation, is used. If a researcher is counting the number of subjects in an experiment (or number of cases in the data set), a continuous type measure is not really being used. Counting in this instance is really examining the frequency that some value of a variable occurs. For example, counting the number of subjects in the data set that

report having been hospitalized in the last year, relies on a dichotomous variable in the data set that stands for being hospitalized or not being hospitalized (e.g., from a question such as "have you been hospitalized in the last year?"). Even if one were to count the number of cases based on the question "how many days in the past year have you been hospitalized," which is a continuous measure, the variable being used in the analysis is really not this continuous variable. Instead, the researcher would actually be analysing a dichotomous variable by counting the number of people who had not been hospitalized in the past year (0 days) vs. those that had been (1 or more days).

B. Survey Question and Answer Types

So, you've decided that you need a better understanding of the characteristics of people who visit your website, or of some other business-related question. Developing a focused and effective questionnaire will help you to efficiently and accurately pinpoint the information that will help you make more informed decisions.

Developing a questionnaire is as much an art as it is a science. And just as an artist has a variety of different colours to choose from in the palette, you have a variety of different question formats with which to question an accurate picture of your customers, clients and issues that are important to them.

The Dichotomous question

The dichotomous question is generally a "yes/no" question. An example of the dichotomous question is: Have you ever purchased a product or service from our website?

Yes

No

If you want information only about product users, you may want to ask this type of question to "screen out" those who haven't purchased your products or services. Researchers use "screening" questions to make sure that only those people they are interested in participating in the survey.

You may also want to use yes/no questions to separate people or branch into groups of those who "have purchased" and those who "have not yet purchased" your products or services. Once separated, different questions can be asked of each of these groups.

You may want to ask the "have purchased" group how satisfied they are with your products and services, and you may want to ask the "have not purchased" group what the primary reasons are for not purchasing. In essence, your questionnaire branches to become two different sets of questions.

The multiple-choice questions

The multiple-choice question consists of three or more exhaustive, mutually exclusive categories. Multiple-choice questions can ask for single or multiple answers. In the following example, we could ask the respondent to select exactly one answer from the 7 possible, exactly 3 of the 7, or as many as 3 of the 7 (1,2, or 3 answers can be selected).

For this type of question, it is important to consider including an "other" category because there may be other avenues by which the person first heard about your site that you might have overlooked.

Example:

A multiple-choice question to find out how a person first heard about your website is: How did you first hear about our web site?

Television

Radio

Newspaper

Magazine

Word-of-mouth

Internet

Other: Please Specify _____

Rank order scaling

Rank order scaling questions allow a certain set of brands or products to be ranked based upon a specific attribute or characteristic. Perhaps we know that Toyota, Honda, Mazda, and Ford are most likely to be purchased. You may request that the options be ranked based upon a particular attribute. Ties may or may not be allowed. If you allow ties, several options will have the same scores.

Example:

Based upon what you have seen, heard, and experienced, please rank the following brands according to their reliability. Place a "1" next to the brand that is most reliable, a "2" next to the brand that is next most reliable, and so on. Remember, no two cars can have the same ranking.

___ Honda

___ Toyota

___ Mazda

The rating scale

A rating scale question requires a person to rate a product or brand along a well-defined, evenly spaced continuum. Rating scales are often used to measure the direction and intensity of attitudes. The following is an example of a comparative rating scale question: Which of the following categories best describes your last experience purchasing a product or service on our website? Would you say **that your experience was...?**

- Very pleasant
- Somewhat pleasant
- Neither pleasant nor unpleasant
- Somewhat unpleasant
- Very unpleasant

The semantic differential scale

The semantic differential scale asks a person to rate a product, brand, or company based upon a seven-point rating scale that has two bi-polar adjectives at each end. The following is an example of a semantic differential scale question.

Notice that unlike the rating scale, the semantic differential scale does not have a neutral or middle selection. A person must choose, to a certain extent, one or the other adjective.

Example:

Would you say our website is...

(7) Very Attractive

(6)

(5)

(4)

(3)

(2)

(1) Very Unattractive

The staple scale

The staple scale asks a person to rate a brand, product, or service according to a certain characteristic on a scale from +5 to -5, indicating how well the characteristic describes the product or service. The following is an example of a staple scale question:

When thinking about Data Mining Technologies, Inc. (DMT), do you believe that the word "innovative" aptly describes or poorly describes the company?

On a scale of +5 to -5 with +5 being "very good description of DMT" and -5 being "poor description of DMT," how do you rank DMT according to the word "innovative"?

- (+5) Describes very well
- (+4)
- (+3)
- (+2)
- (+1)
- Innovative
- (-1)
- (-2)
- (-3)
- (-4)
- (-5) Describes Poorly

Example:

The following question asks you to divide 100 points between a set of options to show the value or importance you place on each option. Distribute the 100 points giving the more important reasons a greater number of points. The computer will prompt you if your total does not equal exactly 100 points.

When thinking about the reasons you purchased our *TargetFind* data mining software, please rate the following reasons according to their relative importance.

Seamless integration with other software _____

User friendliness of software _____

Ability to manipulate algorithms _____

Level of pre- and post-purchase service _____

Level of value for the price _____

Convenience of purchase/quick delivery _____

Total 100 points

The constant sum question

A constant sum question permits collection of "ratio" data, meaning that the data is able to express the relative value or importance of the options (option A is twice as important as option B).

This type of question is used when you are relatively sure of the reasons for purchase, or you want input on a limited number of reasons you feel are important. Questions must sum to 100 points and point totals are checked by JavaScript.

The open-ended question

The open-ended question seeks to explore the qualitative, in-depth aspects of a particular topic or issue. It gives a person the chance to respond in detail.

Although open-ended questions are important, they are time-consuming and should not be over-used.

Example:

An example of an open-ended question might be: (If the respondent indicates they did not find what they were looking for...) What products or services were you looking for that were not found on our website? If you want to add an "Other" answer to a multiple-choice question, you would use branching instructions to come to an **open-ended question to find out What Other...**

The Demographic question

Demographic questions are an integral part of any questionnaire. They are used to identify characteristics such as age, gender, income, race, geographic place of residence, number of children, and so forth. For example, demographic questions will help you to classify the difference between product users and non-users. Perhaps most of your customers come from the Northeast, are between the ages of 50 and 65, and have incomes between R50,000 and R75,000.

And by better understanding the type of people who use or are likely to use your product, you can allocate promotional resources to reach these people, in a more cost-effective manner. Psychographic or life style questions are also included in the template files. These questions provide an in-depth psychological profile and look at activities, interests and opinions of respondents.