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After administering the survey, the next step in survey research process is to analyze the responses of the participants. Handling survey data includes conducting a precise survey data analysis which lets you interpret the results accurately.

Survey data analysis is a process that involves five steps:

1. data validation
2. response partitioning
3. coding
4. standard analysis
5. ordinal and nominal data analysis

Data Validation

Data validation ensures that the survey questionnaires are completed and present consistent data. In this step, you should not include the questions that were not answered by most respondents in the data analysis as this would result to bias in the results. However, in the case of incomplete questionnaires, you must count the actual number of respondents that were able to answer a particular question. This should be the same for the rest of the questions.

Response Partitioning

Homogenous subgrouping of the responses makes data analysis faster and easier. Based on the demographic data gathered from the survey, you may partition the responses into subgroups. For instance, you may want to compare the answers of male and female respondents, or young and old participants.

Data Coding

Before inputting the survey data into electronic data files, data coding must be done. Data coding simply means converting the nominal and ordinal scale data in such a way that the statistical package to be used can handle the survey data [1] accurately. This step is actually performed when you design the questionnaire, but the data codes become helpful during data analysis. In order to perform data coding, read through the responses and group them into categories. For instance, responses that are related to customer service can be coded under the category "Customer Service".

Unlike closed-ended questions, open-ended questions are more difficult to code since it needs human expertise to determine if one response is equivalent to another. In this case, several experts are asked to code the responses in order to minimize bias [2].

Standard Data Analysis

The type of survey method used as well as the type of response formats [3] are two factors that affect the specific method of data analysis the survey requires. Basically, standard data analysis includes computing for the proportion of variables [4] and standard errors [5].

Analyzing Ordinal and Nominal Data

Numerical survey data can be easily handled and analyzed straightforwardly using statistical equations [6]. On the other hand, ordinal and nominal data need a different way of analyzing survey results. It is a usual practice that ordinal scales (five-point scale, seven-point scale, etc) are converted into their numerical equivalents, as in a five-point scale, where in "strongly agree" is equivalent to "5" whereas "strongly disagree" is equal to "1". On the other hand, it is best to use advanced statistical procedures such as Spearman's rank correlation [7] and Kendall's tau to determine the relationship among the ordinal scale variables [8].

Handling nominal data usually includes identifying the percentage of responses per category. Chi-square tests [9] and multi-way [10] tables are commonly used to measure the relationship between nominal scale variables.

Links
[1] http://www.idi.ntnu.no/grupper/su/publ/ese/kitchenham-survey6.pdf
[2] https://explorable.com/research-bias
[3] https://explorable.com/survey-response-formats
[4] https://explorable.com/variables-and-statistics

[5] https://explorable.com/standard-error-of-the-mean
[6] https://explorable.com/statistics-tutorial
[7] https://explorable.com/spearman-rank-correlation-coefficient
[8] https://explorable.com/measurement-scales
[9] https://explorable.com/chi-square-test
[10] https://explorable.com/repeated-measures-anova