**Lab Assignment 05**

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**1) Please illustrate the study designs in quantitative research and (2) illustrate the types of study design.**

Quantitative research uses three different classifications when examining study designs: the number of contacts with the study population, the reference period of the study, and the nature of the investigation.

Designs based on the number of contacts have three sub-types: cross sectional, before-and-after, and longitudinal. Cross-sectional is the most common and takes a cross-section of the population at one point in time. Before-and-after, also known as pre-test/post-test design, takes two cross-sectional data collection points on the same population to identify the changes. And, longitudinal uses the researched population a number of times; a series of repetitive cross-sectional studies collecting the same information.

Designs based on the reference period consists of retrospective, prospective, and retrospective-prospective. In retrospective designs, the researcher investigates things that happened in the past. For prospective the researcher investigates things that are likely to happen in the future, such as experiments. Lastly, the retrospective-prospective design focuses on past trends and studies them into the future, such as before-and-after studies without a control group.

Designs based on the nature of the investigation are experimental, non-experimental, and quasi-experimental. The experimental type starts from the cause to establish the effect then introduces the intervention that is assumed to cause the change in a controlled or natural environment. The non-experimental begins with the effect to research the cause; the phenomenon is known, and the researcher attempts to establish what caused it. The quasi-experimental design has elements of both experimental and non-experimental studies.

**3) Please illustrate the methods of data collection.**

Data collection consists of two main methods: primary and secondary sources. The primary sources are data collected personally by the researche, like a series of participant or non-participant observations, structured or unstructured interviews, and mailed, collective, or online questionnaires. Secondary sources are existing information or documents that are readily available, like government publications, earlier research, census records, personal records, client histories, or service records.

**4) How to formulate effective questions.**

Good questions use easy and everyday language that are unambiguous. They also avoid asking questions that are double barreled, leading, or based on assumptions which might introduce unintended bias.

**5) Please list the types of attitudinal scales and explain each one.**

There are three types of attitudinal scales: the Likert, Thurstone, and Guttman scales.

The Likert scale is the most common scale and measures the intensity of attitude towards an issue. Each statement has an equal attitudinal value and is measured in terms of categories or numerical value. Scores are assigned to the attitude scale if calculations are used for weighting responses.

The Thurstone scale calculates an attitudinal value for each statement for which a mean score is recorded of each as well. The mean score is equivalent to the attitudinal value assigned by group of judges. The scale reflects the absolute attitudes rather than the relative.

The Guttman scale is also called the cumulative scale and is rarely used. This attitude is represented by a unidimensional ordinal scale (think, multiple questions answered with yes/no or 1/0) which are then cumulatively added to produce an unweighted and absolute ordinal value; unlike the Likert scale that would use weighted ordinals.

**6) Please illustrate validity and list the types of validity.**

Validity is the ability of a research instrument to measure what it is designed to measure. Within qualitative research it is used in five ways: face and content validity based on subjective logic, concurrent and predictive validity based on types of comparison, and construct validity based on statistical procedures.

Face validity is logic linked between research instruments and a research objective. Content validity represent all aspects of the issue being measured.

Concurrent validity judges by how well an instrument compares with a second assessment concurrently done. Whereas the predictive validity judges by the degree to which an instrument can forecast an outcome.

Construct validity is a statistical procedure that establishes the contribution of each important factor (construct).