

# Analyzing tests and scales essay samples

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Research tools, tests, scales, and population are indispensable to research studies in social sciences. The choice of an instrument, test, and scale to be used in measuring various characteristics of a given population influences the validity and reliability of the research tools employed. The characteristic of a population being measured in a particular study determines the choice of tools most appropriate for the study.

Different tests used in social science studies are related in various ways. Therefore, they are classified based on their relationships. For instance, chi-square, phi, logistic regression, and Cramer's V are applicable where the independent and dependent variables are discrete (Morgan, Reichert and Harrison, 2002). In such cases, nominal or ordinal scales are used. In studies involving continuous independent and discrete dependent variables, logistic regression and point-biserial correlation are preferred (Sirkin, 1999). Studies where the independent variable is discrete, and the dependent variable is continuous often apply the following tests: t-test, regression, ANOVA, and point-biserial correlation. On the other hand, studies in which both dependent and independent variables are continuous apply the following test: regression and correlation among others. Consequently, different tests relate with one another since some of them serve almost similar purposes or are used under similar circumstances.

Scales also relate to one another based on the characteristics being studied in a particular research. For instance, nominal scales are related to the ordinal scales with 2, 3, or 4 levels in the sense that both are used in studies focusing on discrete characteristics. For instance, in studies where gender is the dependent variable, nominal scale is used for the dependent variable.

Similarly, studies involving four distinct colors would involve ordinal scales with 4 levels. Populations of research studies often relate in terms of characteristics. In this case, some populations share similar characteristics while some exhibit significant variations in their characteristics. However, the similarities or differences are influenced by the environment and other factors that may be inherent in particular populations. Reliability and validity of a study tool affect each other. As a matter of fact, tools with high validity are likely to have high reliability. However, there is a possibility of obtaining consistent, but wrong results when using a particular tool. Similarly, it is possible to obtain accurate results but with low level of consistency. Both concepts affect the results of a given study.

An example of tests used in social sciences is the chi-square test for independence. The test is mainly used where two categorical variables are involved in order to investigate the presence of significant association between the two variables. For instance, this test can be used in studies testing the relationship between gender and color preference in which specific number of colors are involved. This test exhibits high validity and reliability when used in studies testing discrete characteristics. The population involved should be able to change its characteristics minimally with time. An example of a scale commonly used in social science studies is the nominal scale. Nominal scales involve two levels (In Vicari, 2014). They classify variables into two categories. For example, gender can be classified into two categories: male and female only.

## **References**

In Vicari, D. (2014). Analysis and modeling of complex data in behavioral and social sciences.

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Sirkin, R. M. (1999). Statistics for the social sciences. Thousand Oaks, Calif: Sage Publications.