

Quantitative research



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Quantitative research often is the preferred approach to problem design as results are precise. Many researchers prefer the exact measurement and statistical analysis that quantitative research offers. Observation in quantitative research allows classification and the statistical models built document the outcome of a study. The data collected in a quantitative investigation creates answers in numbers and statistics. Deductive reasoning is used to design quantifiable tools that collect pertinent data.

Results are accurately measured and presented, as a “ quantitative research paradigm is empirical in nature; it is also known as the scientific research paradigm” (Atieno, 2009, p. 14). Characteristics of a Quantitative Problem Statement The problem statement explains and justifies the decision to use quantitative analysis methods. The problem statement is a succinct and definite, implying data gathering and examination. “ Quantitative research is a means for testing objective theories by examining the relationship among variables,” (Creswell, 2008, p.). Creswell (2009) indicated if a problem calls for factors that influence the result or a best outcome approach, then a quantitative approach should be used. Characteristics of a Quantitative Purpose Statement As Jenkins (2009) discussed, an effective purpose statement is in alignment with the problem statement. The nature of the study, data collection methods, and the study population identify the design approach. Variables identified in the design and logic of the problem contributes to the project design and hypothesis.

Formulation of Quantitative Research Questions and Hypotheses The quantitative research questions and hypothesis clearly seek to answer the problem statement. The hypothesis is the premise of the study, the expected

outcome of the study presents anticipated results in a quantitative manner. The questions and hypothesis create a logical basis to identify data collection methods suitable for problem solving. Quantitative Data Collection Procedures Data collection processes reflect the activities as originally outlined in the problem and purpose statements.

The construction of formal instruments occurs to measure the quantifiable data gathered and analyzed. Constraints to data collection procedures such as organization, budget, time, and access to the survey population factor into the design process (Jenkins, 2009). Quantitative Data Analysis Procedures The results from the data collection process derived from trend analysis and surveys use statistical methods of measurement (Atieno, 2009). The results provide an exact result numerically measured.

The precision offered by gathering data through easily quantifiable tools give reliable results. The data alone does not provide an answer; statistical methods for analysis provide a reliable means of clarifying a large data set (Jenkins, 2009). Statistical analysis is used to mitigate risk when a degree of uncertainty is present. Numbers from the researched data set use statistical analysis and reporting for analysis. Descriptive statistics allow the presentation of results using graphs and charts (Jenkins, 2009).

Visual communications provides a clear graphic representation that allows simple cognition of complex data. Research Fundamentals Quantitative research is a preferred method of problem-solving because of its precision. A properly designed problem statement and purpose statement drives the research process and deductive logic is used in the data gathering design. Results are analyzed using statistical methods to create a result set.

Presentation of results may include visual communication tools such as charts and graphs, providing simple tools to understand complex trends and ratios.