Major Dimensions of Research - Methods and Analysis

Research Objective
- Exploratory Research
- Descriptive Research
- Predictive
- Explanatory Research

Unit of Analysis
- Individual
- Group
- Organization
- Artifact

Variables
- Independent
- Dependent
- Intervening
- Control

Measurement
- Nominal
- Ordinal
- Interval
- Ratio

Time Dimension
- Cross-sectional Research
- Longitudinal Research
  - Trend Studies
  - Cohort Studies
  - Panel Studies
  - Controlled Case Studies

Measurement Methods
- Direct (See Data Collection)
- Indirect Methods (See Data Collection)

Sampling
- Sample Size
- Random
- Non-Random

Designs
- Experiments
- Surveys
- Field Studies
- Evaluative Research

Data Collection
- Direct Methods
  - Observation
    - Unstructured
    - Structured
    - Participant as Observer
    - Observer as Participant
    - Non-participant Observer
  - Questioning
    - Interviews
      - Semi-structured
      - Structured Interview Schedule

Questionnaire
- Administered Questionnaire
- Mail Questionnaire

Indirect Methods
- Unobtrusive Measures
- Secondary Data
- Trace Evidence
- Accretion
- Erosion

Data Analysis
- Number of Variables
  - Univariate
  - Bivariate
  - Multivariate

Analysis Presentation options
- Graphs
  - Pie-Chart
  - Histogram
  - Polygon

Statistics
- Type of Statistic
  - Non-parametric
  - Parametric

Purpose of Analysis
- Description
  - Frequencies
  - Central Tendency
    - Mode
    - Median
    - Mean

- Dispersion
  - Inter-quartile Deviation
  - Range
  - Coefficient of Variation
  - Variance

- Symmetry
  - Skewness

- Peakedness
- Kurtosis

Inference
- Single Variable
  - Goodness of Fit Chi Square

Bivariate
- Chi Square Test for Association
- Student's T
- Pearson's Product Moment Correlation Coefficient
- ANOVA One-Way
- Regression

Multivariate
- Partial-Correlation
- ANOVA N-Way
- Multiple Regression