

Research Design Ideas for Institutional Researchers

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Goal

- Enhance institutional researchers' capacity to produce policy relevant studies for planning and decision-making.

Objectives

- Enhance participants' ability to:
 - design methodologically sound studies
 - translate data into information; and
 - prepare, practically useful research reports.

Topics

- How to:
 - conceptualize a research problem;
 - reconceptualize a request for information as a research problem;
 - use the literature in designing a research study;
 - select and interpret selected statistical techniques;

Topics

- How to:
 - approach analysis of data;
 - extract generalizable research ideas from an institutional study;
 - develop meaningful policy recommendations; and
 - create a research proposal of interest to other institutional researchers.

Overview

- Part I: Research Design and Analysis
- Part II: Enhancing Research Practice and Professional Effectiveness

1. Designing Methodologically Sound Research Studies

- A. The Relationship of Quantitative Research to Institutional Research
- B. Overview of the Research Process
- C. Guiding Principles

Designing Methodologically Sound Research Studies

- D. How to Use the Literature in Designing a Research Study
- E. Understanding How to Formulate a Research Problem

2. Analysis of the Data

- A. Creating the Database for Analysis
- B. Guidelines for Planning the Analysis
- C. Principles for Conducting the Analysis
- D. Recommendations for Interpreting the Results

3. Enhancing the Effectiveness and Impact of Institutional Research

- A. Develop a Research Agenda
- B. Prepare Policy Oriented Reports
- C. Utilize Technology
- D. Convert Reports into Papers

4. Achieving Professional Effectiveness

- A. Clarifying the Role of the Researcher
- B. Coping With the Tension Between Expediency and Rigor
- C. Achieving an Impact on Policy
- D. Creating Professional Papers

1. Designing Methodologically Sound Research Studies

A. The Relationship of Quantitative Research to Institutional Research

Key Differences between Classical Paradigm and Institutional Research

Factor	Classical Paradigm	Institutional Research
Key Concepts	Control, Treatment	Questions crucial
Data	Ideal - random	Usually not random
Focus	Hypothesis Testing	Goal - Decisions
Data Analysis	Confirmatory	Often Exploratory

If Institutional Research is More of an Art than a Science, why Consider "Scientific Approach"?

- Underlying logic is useful.
- Quantitative techniques are useful.
- Some social science principles are directly relevant.
- Applied study may be foundation for basic research.

What is Scientific Research?

- A systematic, controlled, empirical critical investigation of natural phenomena - guided by theory and hypotheses about the presumed relationships among such phenomena.

What are the Major Steps of the Scientific Approach?

- Problem - obstacle idea
- Hypotheses
- Reasoning - deduction
- Observation - test, experiment

B. Overview of the Research Process

- Statement of the Problem
- Formulation of Research Question
- Development of Hypotheses
- Identification of:
 - Constructs
 - Concepts
 - Operational Definitions

Overview of the Research Process

- Design for Testing Hypotheses
 - Research Design
 - Data Source -Population, Sample, Resp. Group
 - Selecting Methods for Analysis
 - link to hypotheses
 - consider both quantitative and qualitative techniques

Overview of the Research Process

- Plan for Conducting the Data Analysis
- Performing the Data Analysis
- Presenting the Results
- Formulating Conclusions
- Developing Recommendations

C. Guiding Principles

Ask questions:

- Why do you want this information?
- What decisions are you going to make?
- Who will make the decision?
- What possible actions will be taken?
- At what level will the actions be taken?

Guiding Principles

Outline the intended final product.

- Include tables, graphs and evaluate how well this will answer the questions.
- Think creatively about the questions. What new perspective can you offer? What other data would make the project more interesting?

Guiding Principles

Quantitative Focus: Measurable Issues

- State the questions you are addressing.
- Write the questions as hypotheses.
- Identify the concepts you are studying.
- Operationally define the concepts.
- Decide what statistical tests you will use to test concepts.

Guiding Principles

Qualitative Focus: the Context

- Think of ways of gaining insight into the context of the study.
- Elicit participants' perspective.

D. How to Use the Literature in Designing a Research Study

- Purpose:
 - To raise the methodological sophistication and theoretical relevance of your work
- Perspective:
 - Balance value of literature review with practical constraints

How to Use the Literature in Designing a Research Study

- Sources:

- ERIC
- Psych. Abstracts
- NDIR publications
- Conference Proceedings
- Research in Higher Education
- Higher Education Handbook of Theory and Research

How to Use the Literature in Designing a Research Study

- Method:
 - Focus on the most recent years.
 - Select most relevant articles.
 - Analyze articles individually in terms of purpose, methods and results.
 - Conduct a meta analysis across studies

E. Understanding How to Formulate a Research Problem

- How do work related challenges affect institutional researchers' job quality and effectiveness?
- How well did the new graduate curriculum prepare students for their career?
- How competitive is our graduate school in attracting the best students?
- How well is the college doing in terms of student satisfaction and student perception of the impact of their education?
- What are the determinants of success for our alumni?

2. Analysis of the Data

A. Types of Analyses

- Instrument Design
- Research Studies

B. Planning the Analysis

- When:
 - Initial Design Stage
- Why:
 - Need to have data...
 - Appropriate level
 - Sufficient numbers
 - Correct types of analysis

Planning the Analysis

- Guidelines:
 - Link Analysis to Questions
 - Focus analysis on actionable issues.
 - Consider theoretical issues on research.
 - Outline final report ~ include tables during the initial stage
 - Consider both quantitative and qualitative techniques.
- Resources:
 - SPSS - guide to data analysis
 - Statistics Course: Inferential and Multivariate

C. Conducting the Analysis

- Verify accuracy of data set:
 - Use List cases
 - Examine Outliers
- Follow Systematic Approach:
 - Univariate
 - Bivariate
 - Multivariate
- Emphasize:
 - Simplicity
 - Making meaning of data
 - Take the perspective of the reader and audience

Conducting the Analysis

- Very Useful Tools for Quantitative Analysis:
 - Factor Analysis - Understand patterns in data
 - Regression - Predicting Outcome
- General Approach to Qualitative Data:
 - Focus on themes
 - Consider representativeness
 - Select well written, constructive comments.

D. Interpreting the Results

- Evaluate whether the data meets assumptions of the tests.
- In the text, explain results in clear, easy to understand language.
- Include statistical explanations in footnotes and appendices.
- Focus interpretation on research questions.
- Enhance interpretation with your own insights.



3. Enhancing the Effectiveness and Impact of Institutional Research

A. Develop a Research Agenda

- Create the Agenda
- Listen to your Audience
- Take a Pro-Active Role
- Balance Research and Reporting
- Consider Potential Influence on Policy

B. Prepare Policy Oriented Reports

- Review Original Questions
- Focus on Actionable Items
- Consider Implications of Results on Individual People and Departments
- Emphasize Major Results
- Provide a Positive, Constructive Perspective

Prepare Policy Oriented Reports

- Use Graphs
- Provide Different Level Reports, e.g. Departmental and School
- Take Time to Translate Results into Recommendations
- Prepare an Executive Summary
- Conduct Follow-Up to Assess Implementation of Recommendations

C. Utilize Technology

- Impact
 - Enhances Quality
 - Increases Productivity
 - Reduces Clerical Work and Costs
- Applications
 - Administrative Website
 - Electronic Fact Book
 - Web Surveys



4. Achieving Professional Effectiveness

A. Clarifying the Role of the Researcher

- Information Provider
- Policy Advisor
- Change Agent
- Other

B. Managing the Tension between Expediency and Rigor

- Research Standards
- Practical Constraints
- Political Considerations
- Short and Long Term Strategies

C. Achieving An Impact On Policy

- Acquire a High Level of Research Competence
- Meet High Standard of Integrity in the Research
- Develop a Sensitivity to the Political Climate
- Continuously Evaluate the Relevance of your Work to Institutional Needs

D. Creating Professional Papers

- Recognize Limitations of Single Institutional Data
- Develop Methodology Relevant for Other Institutions
- When Possible, Plan Research Paper During the Initial Stages of Institutional Research Project



Thank You