

Introduction to Research Methods

Prepared by Associate Professor/
Ahmed Rageh Ismail

MGM333

Introduction to Research Methods

Lecture 4



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Learning Outcomes

1. Understand how to create effective surveys with clear research questions and data collection instruments.
2. Comprehend the use of probability sampling techniques and the collection of standardized data.
3. Discuss analyzing survey data using statistical techniques and presenting findings clearly.

Learning Outcomes

4. Gain insight into designing and conducting in-depth case studies to explore specific phenomena.
5. Learn how the difference between true and quasi-experimental designs with controlled variables.
6. Appreciate the principles of assessing the validity and reliability of research findings across different methods.

Survey Research



Introduction to Survey Research

- The purpose of survey research is to gather and analyze information by questioning individuals who are either representative of the research population or are the entire research population.
- A study that uses a representative sample is termed a 'survey,' while if the entire population is involved, it is termed a 'census.'
- In survey research, questions must be asked using a standardized questioning procedure that is applied equally and consistently to all research participants.

Aims of Survey Research

- The primary aim of survey research is to study relationships between specific variables, which are identified at the outset and stated as either a hypothesis or a research question.
- Alternatively, surveys can describe certain characteristics of a population. The findings from surveys can be generalized to the wider population.
- While survey research can include both qualitative and quantitative elements, it is usually quantitative with a limited qualitative element that tends to be anecdotal rather than truly qualitative.

Survey vs. Questionnaire

- The term 'survey' is often used interchangeably with 'questionnaire,' but the two are not the same.
- A survey is a research method designed to structure the collection and analysis of standardized information from a defined population using a representative sample. It involves standardized data collection procedures and may include various data collection options.
- A questionnaire, however, is a specific data collection technique that can be used within various research methods. Understanding this distinction is crucial to avoid confusion.

Importance of Probability Sampling

- Probability sampling is essential in survey research to make valid generalizations about the wider population.
- This sampling method ensures that every individual in the population has an equal chance of being selected, enhancing the representativeness of the sample.
- When non-probability sampling is used, researchers must be cautious with any generalizations made to the wider population, as the sample may not accurately reflect the diversity and characteristics of the population

Types of Surveys: Descriptive and Explanatory

There are two main types of surveys: descriptive and explanatory.

- **Descriptive surveys** aim to estimate as precisely as possible the nature of existing conditions or attributes of a population. Examples include demographic composition, attitudes towards abortion, religious beliefs, voting intentions, and child-rearing practices.
- **Explanatory surveys**, on the other hand, seek to establish cause-and-effect relationships, although true causation cannot be definitively proven in natural settings. It is possible to apply both methods in the same study for a comprehensive analysis

Descriptive Surveys

- The purpose of a descriptive survey is to describe a situation and look for trends and patterns within the sample group that can be generalized to the defined population of the study.
- Data gathered in descriptive surveys typically include measurements, counts, and brief narratives, which are analyzed using descriptive statistics such as measures of central tendency and standard deviation.
- The approach to sampling in descriptive surveys is usually random, and the results are interpreted based on current facts gathered and previous research.

Explanatory Surveys

- Explanatory surveys seek to establish cause-and-effect relationships without experimental manipulation. For instance, they may investigate the effects of merit schemes on teachers' motivation or the effects of social climate on adolescent values.
- While definitive causation cannot be established in natural settings, explanatory surveys can demonstrate probable links between variables. These surveys often begin with a hypothesis and use inferential statistical techniques to analyze numerical data and establish relationships between variables

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Combining Descriptive and Explanatory Methods

- In some studies, both descriptive and explanatory methods are applied to provide a comprehensive understanding.
- For example, a researcher might start with a descriptive survey to outline the current state of a population and follow up with an explanatory survey to delve into the reasons behind observed patterns.
- Combining these approaches allows for a richer analysis and more robust conclusions, addressing both the "what" and the "why" questions in research.

Combining Descriptive and Explanatory Methods

- Survey research is widely used across various fields such as market research, healthcare, social sciences, and education. It is a versatile method that can be adapted to different research goals and populations.
- By carefully designing surveys and using appropriate sampling methods, researchers can gather valuable insights and make informed decisions.
- Effective survey research requires attention to detail in question design, sampling, data collection, and analysis to ensure the validity and reliability of the findings.

The Survey Process Overview

- Survey research follows a linear and structured process, with clearly defined steps that rarely overlap.
- This process consists of the following stages, each crucial for conducting a successful survey: identifying a general topic area, investigating the literature, establishing a hypothesis or aims and objectives, identifying variables, selecting a suitable population, applying an appropriate sampling technique, designing data collection instruments, piloting the instruments, collecting data, analyzing data, and presenting findings and conclusions.

Identify a General Topic Area

- The first step in the survey process is to identify a general topic area.
- This may be a specific topic assigned to you within your workplace or chosen as part of an academic qualification with guidance from course tutors.
- It is important to select a topic that will maintain your interest and motivation throughout the research.
- Engaging with a topic that enthuses you will make the research process more enjoyable and sustainable.

Investigate the Literature

- Research begins with exploring what is already known about the topic. Familiarize yourself with the context and background by reading reports of past research.
- This will provide valuable insights into appropriate design features for your survey, such as sampling techniques, areas to cover in your questioning, and potential pitfalls to avoid.
- Reviewing the literature helps in grounding your research in existing knowledge and identifying gaps your study can address.

Establish Hypothesis, Aims, and Objectives

- Clearly define your hypothesis or research question, along with the aims and objectives of your study.
- Keep the hypothesis simple and clear. Remember, a survey will not prove a hypothesis but may support or refute it.
- Descriptive surveys typically have aims and objectives, while explanatory surveys state a hypothesis.
- This clarity at the outset guides the direction of your research and helps in maintaining focus.

Identify a Suitable Population

- Define the entire population you will make generalizations about from the outset. This step is crucial for the credibility of your findings.
- You are not attempting to generalize about everyone or everything, only the identified population.
- Clear definition of your population sets the foundation for effective sampling and valid conclusions.

Select and Design Data Collection Instruments

- Decide on how to collect your data, whether through questionnaires, interviews, structured observations, etc.
- Design your data collection instruments to produce standardized responses, ensuring questions are clear and unambiguous.
- Pay close attention to question wording to avoid misinterpretation by respondents.
- Well-designed instruments facilitate accurate data collection and ease the subsequent analysis process.

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Pilot the Data Collection Instruments

- Pilot your data collection instruments to identify and rectify any issues.
- This step is crucial to ensure clarity and effectiveness of your questions. Piloting helps in detecting ambiguities and improving the instrument based on feedback.
- Conducting a thorough pilot ensures that the final instrument is robust and capable of gathering reliable data.

Collect Data

- Conduct the actual data collection through observing, interviewing, and administering questionnaires.
- Efficiently manage the logistics and administrative aspects of data collection.
- This stage requires careful planning and execution to gather high-quality data.
- Ensuring consistent application of data collection procedures across all respondents is vital for maintaining the integrity of your research.

Analyze Data

- Data analysis typically begins after all data has been collected, although in staged surveys, analysis may occur after each round.
- Preparing for analysis early, by constructing well-designed questions and pre-coding responses, makes this stage smoother.
- Data analysis is often the most challenging aspect, requiring thorough preparation and a clear understanding of what to look for and how to find it.

Present Findings and Conclusions

- Present your findings clearly, using graphs, tables, and charts where appropriate. Link conclusions directly back to the original research purpose, ensuring a logical flow from data to conclusions.
- The presentation stage can be demanding, requiring motivation and careful thought to effectively communicate your discoveries.
- Conclusions should be clear and directly derived from the data, leaving readers with a thorough understanding of the study's implications.

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The Linear Nature of Survey Research

- Survey research is attractive for its linear and structured process, providing a broad framework and stable procedure.
- This structured approach offers a sense of security, especially for new researchers. However, conducting a survey involves engaging in rigorous research activity that must demonstrate validity.
- While the process may appear straightforward, each stage can be complex and demanding, requiring careful attention and diligence



Experimental Research

Introduction to Experimental Research

- Experimental research epitomizes the positivist paradigm. While it has its place in management research, its application to studies involving human subjects is often problematic.
- The numerous unstable elements and complex variables involved in human conditions make it difficult to construct a true experiment.
- Experiments are more feasible on systems with stable functions and controllable variables, unlike the human condition, which is subject to many internal and external variables.

Challenges in Human Experiments

- Experiments involving human subjects often face significant challenges. Controlling all variables acting on a human subject at any one time is nearly impossible, leading to unavoidable experimental errors.
- Experimental error occurs when changes in the dependent variable (DV) are caused by variables other than the independent variable (IV).
- Identifying and measuring these errors is a complex task, often making true experiments with human subjects unreliable..

Nature of Experimental Research

- Experimental research involves a controlled research situation where unwanted variables and external influences are excluded from the experimental environment.
- The researcher establishes experimental conditions down to the smallest details.
- A true experiment eliminates the effects of all intervening, spurious, and antecedent variables, ensuring that changes in the DV are solely due to manipulation of the IV.

Key Variables in Experimental Research

- In experimental research, we deal with several types of variables:
- **Independent Variable (IV):** The phenomenon or situation manipulated by the researcher.
- **Dependent Variable (DV):** The behavior or effect measured as a result of the manipulation.
- **Moderator Variable (MV):** A factor measured, manipulated, or selected to determine if it changes the relationship between the IV and DV.
- **Control Variable (CV):** A potential IV that is artificially held constant throughout the experiment.

Quasi-Experimental Research

- Many studies claiming to be experimental are, at best, quasi-experimental.
- A quasi-experiment aims to establish levels of correlation between observable variables without the strict control of a true experiment. It is more feasible in natural settings but cannot definitively establish causality.

Quasi-Experimental Design

- Quasi-experiments include non-equivalent group designs and time series designs.
- Non-equivalent group designs do not use random selection and are conducted in field settings.
- Time series designs involve multiple observations at various intervals pre- and post-test, providing more data on progressive change or continuity.
- While quasi-experiments have stronger external validity, they struggle with internal validity due to lack of control over intervening variables.

True Experimental Design

- A true experiment aims to empirically verify or corroborate the hypothesis of a causal relationship between variables.
- It measures the degree of relationship between identified variables by assuming temporal precedence of the IV and eliminating all other variables.
- A basic true experiment model includes the subject, the IV, and the measured DV.
- True experiments require at least two clean tests on two random groups to isolate the cause-and-effect relationship.

Challenges in True Experiments

- True experiments face challenges in both internal and external validity.
- While they can claim high internal validity due to control over intervening variables, their external validity is often reduced.
- The artificial conditions of laboratory settings may not be applicable to natural settings.
- Factors such as subject maturation and learning from pre-tests can also introduce biases, affecting the reliability of the findings.

Establishing Causality in Experiments

- Experimental research attempts to establish causality by demonstrating that changes in the DV are a direct result of manipulation of the IV.
- This requires showing that the effect (DV) is preceded by the cause (IV) and that this relationship is consistent and repeatable.
- However, causality is a theoretical concept that cannot be empirically verified.
- The best we can achieve is covariance, where changes in X and Y vary together predictably.

Introduction to Case Studies

- Case study Investigates a contemporary phenomenon within its real-life context.
- Boundaries between phenomenon and context are not clearly evident. It utilizes multiple sources of evidence.
- Case study can be either qualitative or quantitative.

CASE STUDY



RESEARCH



DATA



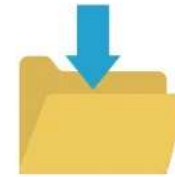
CONDITIONS



EXAMINATION



METHOD



IN-DEPTH



ANALYZING



RESULT

Case Study Research

- Case study aims to provide a comprehensive understanding and in-depth knowledge through detailed descriptions in context.
- Sometimes it is used as a catch-all for non-experimental methods.
- Misused as synonyms for ethnography, participant observation, and fieldwork.

Types of Case Studies

1. Intrinsic Case Study

Its purpose is to understand the case itself. For example, studying an organization for its own sake. The organization and its complexities, not specific phenomena within it.

2. Instrumental Case Study

Its purpose is to investigate a particular phenomenon or theory. For example, studying how crises are managed within the organization. In this type, the case is less important than the phenomenon being investigated.

3. Collective Case Study

- Its purpose is to investigate particular phenomena using multiple cases.
- For example, a study on multiple organizations to understand a broader phenomenon.
- Usually involves several instrumental case studies.

Triangulation in Case Studies

Purpose and Approach

- Collect information from multiple sources to corroborate facts or phenomena.
- Select sources with different biases and strengths to complement each other.
- Using various methods like interviews, observations, and documents.
- Gathering data from different sources to achieve triangulation.

Case Study Research as an Iterative Process

- The design of case study research is iterative. Once in the field, the researcher allows the study design to develop as insights into salient issues are gained.
- This iterative approach means having a flexible post-fieldwork plan that allows for discovery and exploration.
- Lincoln and Guba's naturalistic inquiry identifies three major phases in the research process:

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Designing a Conceptual Framework

Phase 1: Orientation and Overview

Phase 2: Focused Exploration

Phase 3: Member Checking

Phase 1: Orientation and Overview

- The first step is to establish a research focus with a broad aim and specific objectives. This focus helps in maintaining direction throughout the study.
- It is important to define the boundaries of the case to prevent the research from growing beyond its original aims. During this phase, the researcher determines whether to use a single or multiple case design.
- Selecting an appropriate site that provides rich, detailed insights is crucial. Building rapport and trust with participants and informants is essential for gaining access to relevant information.

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- Deciding on the unit of analysis is another key step, whether it's a person, group, program, or system.
- Purposive sampling is used to identify information-rich sources within the case, including key informants who provide deep insights.
- Setting up a case database is necessary for organizing and managing the vast amounts of data collected.
- The emergent nature of case study research means that data collection techniques cannot be fully determined in advance but should be adaptable as the study progresses.

Phase 2: Focused Exploration

- In this phase, data collection begins. Engaging with the sample and gathering data using a variety of techniques such as interviews, observations, document analysis, and focus groups is crucial.
- Maintaining rapport with the sample group is important as the researcher spends significant time in the field.
- The iterative nature of analysis allows the researcher to adapt data collection based on emerging themes and initial findings.

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- As data collection progresses, it is essential to remain open to all possibilities and not let prior theory drive the analysis.
- Categories should emerge directly from the data, ensuring that the analysis is grounded in the collected evidence.
- This iterative process continues until data saturation is achieved, and no new information emerges from the fieldwork.

Phase 3: Member Checking

- Member checking involves verifying data and interpretations with participants to ensure credibility. This can be done through workshops, individual readings, or full case study reports. It allows participants to confirm the accuracy of their stories and contribute to the interpretation of cross-case themes.
- Member checking not only adds to the credibility of the study but also improves the quality of the final report. It is essential to balance participant feedback with the researcher's analysis to yield maximum information.

Cross-Case Analysis for Multiple Case Designs

- In multiple-case designs, cross-case analysis can only occur after all individual cases are completed. This involves identifying themes that emerge from each case and using them for the overall analysis.
- The goal is to present rich, descriptive narratives that provide detailed contextual judgments, allowing readers to transfer findings to other settings.
- The cross-case analysis also draws out concepts and theoretical tenets, enhancing the overall understanding of the studied phenomena.

Exiting the Field

- An exit strategy should be designed early in the research process, with information redundancy as the primary criterion for leaving the field. This means ending fieldwork when no new information is obtained.
- Managing participant expectations about the study's end is important. Providing participants with a study outline, including estimated dates, helps set clear expectations.
- As the fieldwork concludes, communicating the impending end of the study helps participants understand the research timeline.

Writing up the Case Study

- Case study research can be presented through convincing stories, relying on descriptive narratives to create rich pictures. Visual descriptions, including diagrams and evidence, can also be used.
- Constructing narratives is a form of analysis, and writing theory as it emerges from the field is recommended. Ensuring trustworthiness involves establishing credibility, transferability, confirmability, and dependability.
- The final report should balance detailed descriptions with analytical insights, providing a comprehensive account of the case study



Thank You