

Field Work in Human Geography

Reasons for Carrying out Fieldwork

1. To obtain original information or data about a geographical feature or aspect. Such information may not exist in a documented form.
2. To obtain up-to-date information about an area. This is because the environment is always changing.
3. To gather first hand information that may not be distorted in any way.
4. To relate the research topic with real examples in the field in order to understand them better.
5. ...

Methods of Gathering Information in the Field

1. **Observation:-** Involves the use of the eye to see geographical features in the field.
2. **Interviewing:-** Involves asking questions about what is being studied especially about what cannot be observed easily.
3. **Recording:-** Involves taking a permanent record of what is being studied e.g. making notes, Photography, video recording etc.
- 4. **Sketching:-** Field sketching involves drawing sketch diagrams and maps in the field.

Methods (continued)

5. **Measuring:-** This involves obtaining information on distance, height, depth, width etc. It also involves the measurement of the elements of weather and climate.
6. **Pacing:-** Involves the use of strides or paces to obtain rough estimates for a distance.
- 7. **Sampling:-** This involves selecting a specimen to be used for further analysis or study. A specimen sample chosen should be representative of the rest. It may be random or selective sampling.
- 8. **Questionnaire:** Involves the use of printed or written questions given to appropriate persons to fill in or provide answers (information) at their own time and pace.

Methods (continued)

9. **Map Reading:** Involves the use of survey maps to obtain information about unfamiliar routes, features or places. One can also obtain information about height or altitude of an area through map reading. This is referred to as secondary data collection.
10. **Photo reading:-** This involves the use of aerial photographs or satellite images of an area to identify features or areas as well as routes in the area of study. These aerial photographs may also help one to sketch more accurate maps of the area of study.

Methods (continued)

- 11. Map Orientation:-** Involves placing or adjusting a map in such a way that the direction on the ground is the same or corresponding with that on the map. In such way, one is able to read a survey map correctly or fill in a base map correctly.
- 12. Documentary Method:-** Involves obtaining information from the records of an organization like a farm, factory etc. Information may also be obtained from textbooks, atlases, video tapes, audio tapes or CDs etc. This is referred to as secondary data collection.

Stages of Fieldwork

There are three stages of field work which include the following:-

1. Preparation stage
2. Fieldwork proper stage
3. Follow up stage

Preparation Stage

This is the stage before going out into the field. In this stage one makes preparation for the field study such as the following:

- Formulating the topic and objectives of study.
- Conducting a pilot study
- Designing the methods to use (**questionnaire design**).
- Selecting the equipment to use
- Seeking permission from the school authority and from where you could wish to visit (**IRB process**).
- Making other preparations such as organizing transport, eats and drinks, protective gear etc.

Fieldwork Proper Stage

This is the stage when one is in the field gathering information using the various methods and techniques such as asking questions, observing, sketching, taking notes etc.

Follow up Stage

This is the stage when one is back from the field. In the follow up stage one analyses the raw information collected and writes a report after interpreting the information.

Fieldwork Equipment

1. Stationery
2. Maps/compass/mobile
3. Binocular
4. Camera
5. Audio recorder
6. Questionnaires
7. ...

Questionnaire Design

Questionnaires in Social Science Research

- Much of the data in social science research is gathered using questionnaires or interviews.
- The validity of the results depends on the quality of these instruments.
 - Good questionnaires are difficult to construct; bad questionnaires are difficult to analyze.
- Difficult to design for several reasons:
 - Each question must provide a valid and reliable measure.
 - The questions must clearly communicate the research intention to the survey respondent.
 - The questions must be assembled into a logical, clear instrument that flows naturally and will keep the respondent sufficiently interested to continue to cooperate.

Quality aims in survey research

Goal is to collect information that is:

- **Valid:** measures the quantity or concept that is supposed to be measured
- **Reliable:** measures the quantity or concept in a consistent or reproducible manner
- **Unbiased:** measures the quantity or concept in a way that does not systematically under- or overestimate the true value
- **Discriminating:** can distinguish adequately between respondents for whom the underlying level of the quantity or concept is different

Steps to design a questionnaire:

1. Write out the primary and secondary aims of your study.
2. Write out concepts/information to be collected that relates to these aims.
3. Review the current literature to identify already validated questionnaires that measure your specific area of interest.
4. Compose a draft of your questionnaire.
5. Revise the draft.
6. Assemble the final questionnaire.

Step 1: Define the aims of the study

- Write out the problem and primary and secondary aims using one sentence per aim. Formulate a plan for the statistical analysis of each aim.
- Make sure to define the target population in your aim(s).

Step 2: Define the variables to be collected

- Write a detailed list of the information to be collected and the concepts to be measured in the study. Are you trying to identify:
 - Attitudes
 - Needs
 - Behavior
 - Demographics
 - Some combination of these concepts
- Translate these concepts into variables that can be **measured**.
- Define the role of each variable in the statistical analysis:
 - Predictor
 - Confounder
 - Outcome

Step 3: Review the literature

- Review current literature to identify related surveys and data collection instruments that have measured concepts similar to those related to your study's aims.
- Saves development time and allows for comparison with other studies if used appropriately.
- Proceed with caution if using only a subset of an existing questionnaire as this may change the meaning of the scores. Contact the authors of the questionnaire to determine if a smaller version of the instrument exists that has also been validated.

Step 4: Compose a draft [1]:

- Determine the mode of survey administration: face-to-face interviews, telephone interviews, self-completed questionnaires, computer-assisted approaches.
- Write more questions than will be included in the final draft.
- Format the draft as if it were the final version with appropriate white space to get an accurate estimate as to its length – longer questionnaires reduce the response rate.
- Place the most important items in the first half of the questionnaire to increase response on the important measures even in partially completed surveys.
- Make sure questions flow naturally from one to another.

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- Question: How many cups of coffee or tea do you drink in a day?
- Principle: Ask for an answer in only one dimension.
- Solution: Separate the question into two –
 - (1) How many cups of coffee do you drink during a typical day?
 - (2) How many cups of tea do you drink during a typical day?

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 - (A) IBM PC
 - (B) Apple
- Principle: Avoid hidden assumptions. Make sure to accommodate all possible answers.
- Solution:
 - (1) Make each response a separate dichotomous item
 - Do you own an IBM PC? (Circle: Yes or No)
 - Do you own an Apple computer? (Circle: Yes or No)
 - (2) Add necessary response categories and allow for multiple responses.
 - What brand of computer do you own? (Circle all that apply)
 - Do not own computer
 - IBM PC
 - Apple
 - Other

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- Question: Have you had pain in the last week?
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- Principle: Make sure question and answer options match.
- Solution: Reword either question or answer to match.
 - How often have you had pain in the last week?
 Never Seldom Often Very Often

Compose a draft [5]:

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 - Country
 - Farm
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- Question: Where did you grow up?
 - Country
 - Farm
 - City
- Principle: Avoid questions having non-mutually exclusive answers.
- Solution: Design the question with mutually exclusive options.
 - Where did you grow up?
 - House in the country
 - Farm in the country
 - City

Compose a draft [6]:

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- Principle: Write questions that will produce variability in the responses.
- Solution: Eliminate the question.

Compose a draft [7]:

- Question: Which one of the following do you think increases a person's chance of having a heart attack the most? (Check one.)
 Smoking Being overweight Stress

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- Question: Which one of the following do you think increases a person's chance of having a heart attack the most? (Check one.)
 Smoking Being overweight Stress
- Principle: Encourage the respondent to consider each possible response to avoid the uncertainty of whether a missing item may represent either an answer that does not apply or an overlooked item.
- Solution: Which of the following increases the chance of having a heart attack?
 - Smoking: Yes No Don't know
 - Being overweight: Yes No Don't know
 - Stress: Yes No Don't know

Compose a draft [8]:

- Question:

- (1) Do you currently have a life insurance policy? (Circle: Yes or No)
- If no, go to question 3.
- (2) How much is your annual life insurance premium?

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- Principle: Avoid branching as much as possible to avoid confusing respondents.

- Solution: If possible, write as one question.

- How much did you spend last year for life insurance? (Write 0 if none).

Step 5: Revise

- Shorten the set of questions for the study. If a question does not address one of your aims, discard it.
- Refine the questions included and their wording by testing them with a variety of respondents.
 - Ensure the flow is natural.
 - Verify that terms and concepts are familiar and easy to understand for your target audience.
 - Keep recall to a minimum and focus on the recent past.

Step 6: Assemble the final questionnaire [1]:

- Decide whether you will format the questionnaire yourself or use computer-based programs for assistance:
 - SurveyMonkey.com
 - Adobe Live Cycle Designer 7.0
 - GCRC assistance
- At the top, clearly state:
 - The purpose of the study
 - How the data will be used
 - Instructions on how to fill out the questionnaire
 - Your policy on confidentiality
- Include identifying data on each page of a multi-page, paper-based questionnaire such as a respondent ID number in case the pages separate.

Assemble the final questionnaire [2]:

- Group questions concerning major subject areas together and introduce them by heading or short descriptive statements.
- Order questions in order to stimulate recall.
- Order and format questions to ensure unbiased and balanced results.

Assemble the final questionnaire [3]:

- Include white space to make answers clear and to help increase response rate.
- Space response scales widely enough so that it is easy to circle or check the correct answer without the mark accidentally including the answer above or below.
 - Open-ended questions: the space for the response should be big enough to allow respondents with large handwriting to write comfortably in the space.
 - Closed-ended questions: line up answers vertically and precede them with boxes or brackets to check, or by numbers to circle, rather than open blanks.
- Use larger font size (e.g., 14) and high contrast (black on white).

Enhance response rate

- When writing questions and assembling the final questionnaire, edit with a view towards saliency: apparent relevance, importance, and interest of the survey to the respondent
- Consider either pre-notifying those in your sample or sending reminders to those who received the survey (if self-administered). Studies have shown that making contact with the sampled individuals increases the response rate.
- If possible, offer an incentive.

Non-responders

- Understanding the characteristics of those who did not respond to the survey is important to quantify what, if any, bias exists in the results.
- To quantify the characteristics of the non-responders to postal surveys, Moser and Kalton suggest tracking the length of time it takes for surveys to be returned. Those who take the longest to return the survey are most like the non-responders. This result may be situation-dependent.

Conclusions

- You need plenty of **time**!
 - Design your questionnaire from research hypotheses that have been carefully studied and thought out.
 - Discuss the research problem with colleagues and subject matter experts is critical to developing good questions.
 - Review, revise and test the questions on an iterative basis.
 - Examine the questionnaire as a whole for flow and presentation.

Institutional Review Board

What is the IRB?

- An Institutional Review Board (IRB) is charged with protecting the rights and welfare of people participating in research.
- The IRB is comprised of faculty, and staff at Texas Tech University (<http://www.depts.ttu.edu/vpr/irb/committee.php>).
- The IRB reviews proposals for research involving human participants.

Goals of the IRB

- Protect the welfare and dignity of human subjects.
- Assist investigators in conducting ethical research that complies with the U.S. Code of Federal Regulations, DHHS (CFR), [Title 45 Part 46 \(45 CFR 46\)](#).

Origins of Federal Requirement for Human Subjects Research Reviews

- 1. Nazi Medical Experiments (WW II): people infected with disease, forced to take poison, etc.**
- 2. Tuskegee Syphilis Study (1932-1972): African-American men with syphilis studied but not treated.**
- 3. Willowbrook study (1963-66): children with mental disabilities were intentionally infected with hepatitis.**

When the Tuskegee and Willowbrook cases became publicly known in the 1970s, the federal government decided to put in place legal requirements for review and approval of human subjects research conducted using federal funds.

How is Human Subjects Research Defined?

- An institution becomes “engaged” in human subjects research when its members intervene or interact with living individuals for research purposes.
 - Natural observation of humans does NOT require IRB approval (i.e., the subjects are in no way interacted with)
- An institution becomes “engaged” in human subjects research when an institution receives a direct federal award to support such research.

Examples of Human Subjects Research Needing IRB Approval

- All **human subjects research** which involves studies conducted in the lab as well as in the field. These may include surveys, interviews, focus groups and some observational studies often associated with the social sciences and medical studies.
- Human subjects **research** that is part of a class assignment or project.

Examples from the Humanities

- An interview study of Hurricane Katrina victims who are writers.
- An oral history of sexual assault victim.
- Videotaping dance students to determine the relationship between body movement and emotional problems.

Examples from the Social Sciences

- Study of political attitudes of middle school children (vulnerable subject population).
- Study of Texas Tech students' attitudes to same sex marriage/open carry.
- Economic decisions in mildly segmented asset markets.

Examples from the Sciences

- Class project on what types of medications Texas Tech students take.
- Collection of EEG readings during visual perceptions of colors.
- Examination of stereotypes using mild deception.

When does an Observational Study need IRB Review?

- IRB approval is **NOT** needed if people are in public places and the behavior they are engaging in is public (natural observation).
- However, IRB approval is needed when there is ANY interaction or intervention or when children (minors) or any other sensitive groups (e.g., institutionalized) are involved.

Types of IRB Review*

- Exempt from further review
- Expedited
- Full Board Review
- *Category types determined by the IRB depend on level of risk, type of intervention, and type of subject population.

When Planning A Class Project A Student Should Consider the Following Questions:

- Does the activity or project involve *minimal risk*—“probability and magnitude of harm or discomfort are not greater in and of themselves than those ordinarily encountered in daily life or doing the performance of routine physical or psychological examination or tests?”

How much intervention is involved?

- **Intervention** means manipulations of participants or participants' environment that are performed for research purposes. **Interaction** includes communication or interpersonal contact between investigator or participants. **Private** information includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and*privacy*

Privacy

- **Private** information is information which has been provided for specific purposes by an individual and which the individual can reasonably expect will **not** be made public (e.g., academic record). Private information must be *individually* identifiable in order for it to constitute “research” involving human subjects.

Does the research involve a vulnerable population?

- Vulnerable populations include:
 - **Children** (all minors younger than 18 years of age **must** also have parental consent)
 - **Pregnant women**
 - **Institutionalized individuals** (e.g., prisoners, individuals in mental institutions)
 - **Cognitively impaired individuals**

- Texas Tech Human Research Protection Program: <http://www.depts.ttu.edu/vpr/IRB/index.php>

Readings

- **Institutional review Boards and your research :**

<http://www.gis.ttu.edu/geog3340/documents/readings/irb2010.pdf>

- **IRB decision tree:**

<http://www.gis.ttu.edu/geog3340/documents/readings/IRB-Decision-Tree.pdf>

Now, your turn

- Tornado is a severe threat to Lubbock. In May 11, 1970, a F5 Tornado struck Lubbock causing 26 human deaths and \$250 million worth of damage.
- Suppose we are interested in studying the preparedness and awareness of Lubbock residents to Tornado hazards. How would you conduct this study and how would you design your questionnaires?
- Please design your questionnaires and do mock interviews in groups, revise the questionnaires and submit it to your folder.