



Chapter 22



Measuring the Human Dimensions of Recreational Fisheries

22.1 Importance of human dimensions data



- Help make management decisions
- Help make informed decisions
- Input for peoples involvement with fisheries

Fisheries management actions

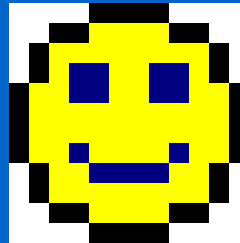
- Manipulation of biota
- Manipulation of the physical environment
- Manipulation of the people

Human dimensions studies

- Measure peoples opinions and preferences (Yes or No)
- Peoples opinion on management objectives
- Likely effects of decisions on people

Human dimensions studies (cont.)

- Political and social acceptability of actions
- Choice of techniques that are
 - Acceptable
 - Effective
 - Desirable to human outcomes



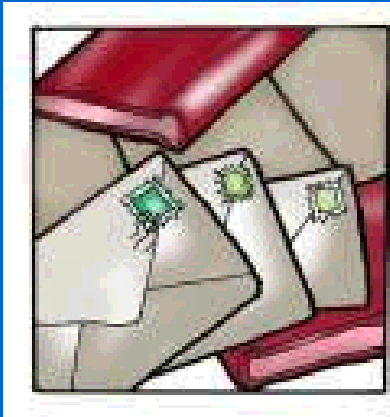
Types and Characteristics of Data Collection Techniques

- **Selection of type depends on:**
 - **Research objectives**
 - **Data requirements**
 - **Characteristics of population to be studied**
 - **Time, staff, and funds available**

Document review and content analysis



- Local newspapers
- Letters received by management agency
- Brochures from interest groups



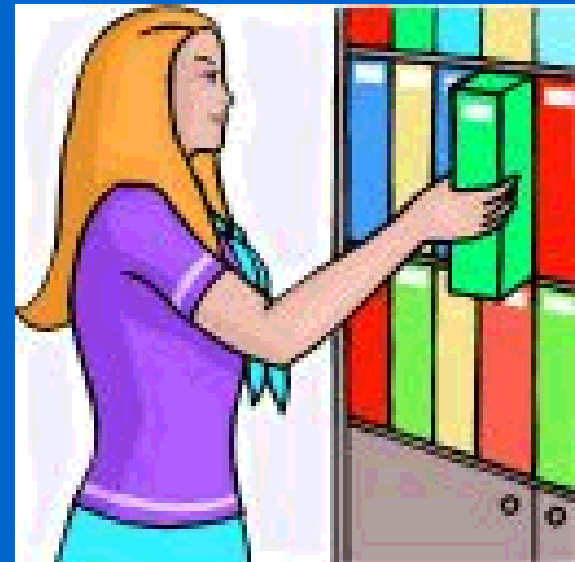
Content analysis

- Collect data from documents
- Organize data into major themes and categories

<i>Genus</i>	<i>Age</i>	<i>Sex</i>
Micropterus	2+	Male
Amia	3+	Female
Lepomis	1+	Male

Document review

- Perceptions on fisheries management programs
- Low cost
- May not represent entire population



Individual interviews

- Allows for exchange of information
- Both closed and open ended questions can be asked
- Can be used on low literacy individuals



Individual interviews (cont.)

- Costly
- Require that interviewer and interviewee share language
- Interviewer has to be present long hours

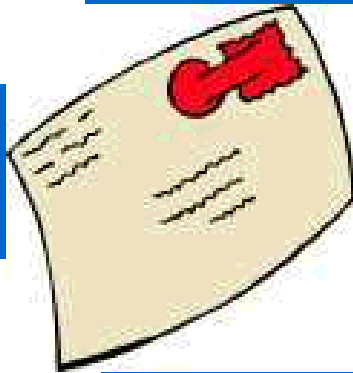


Group interviews

- 8-12 participants
- Sessions for two hours
- Exchange of information
- Provides many insights



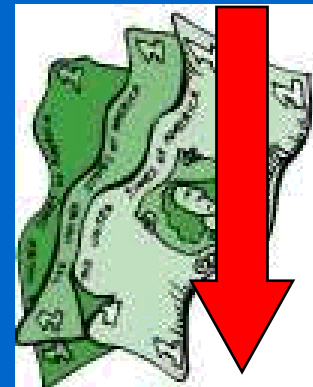
Mail surveys



- Allow collection of detailed data
- Gives interviewers time to reflect on answers
- Costs vary depending on scope of study
- Questions should be very clear

Telephone surveys

- Interaction in interview
- Better overall participation
- No time for personal reflection
- Less expensive than personal interviews



Direct observation



- Time intensive
- Requires excellent observation skills

Characteristics of data

- Qualitative- provides depth and detail for small groups
- Quantitative- standardized measures for larger groups

Qualitative:

Lake Chicot fishermen prefer X brand rods and reels. The live bait used most often was minnows. The lure used most often was a spinner.

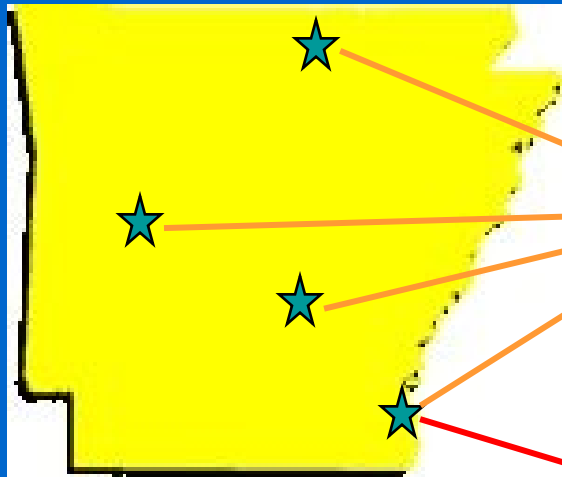
Quantitative:

Arkansas fishermen use both X and Y brand rods and reels.

Types of Questions

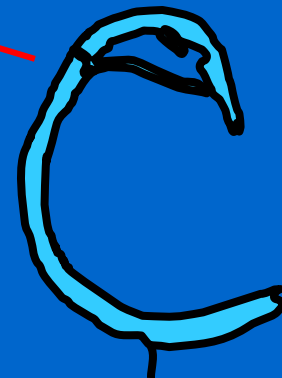
- **Closed ended questions- choose answer from options**
 - quantitative
- **Open ended- answer in own words**
 - qualitative

Characteristics of data (cont.)



- Cross sectional data- compare data from different stakeholders

- Longitudinal- data from the same stake holders

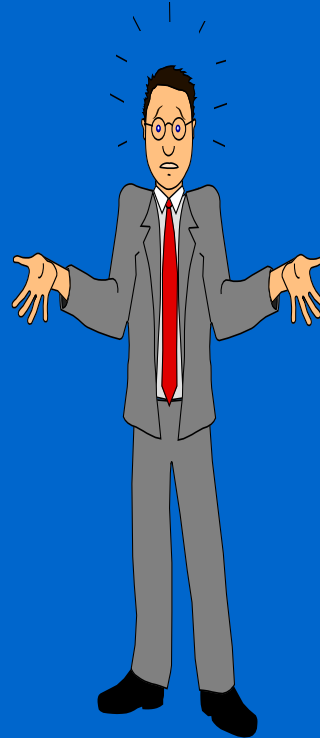


22.2 Theoretical framework

- List of concepts to be measured
(Time, number, species, range)
- Predicted relationships
(e.g. double time = triple catch)

Immediate information needs

- Research driven by problems
- Who?
- Where?
- How much?



Use and Expansion of Existing Models and Theory

- **Proactive management- solve problems before they arise**

Management activities limited by

- Time



- Money



- Staff resources



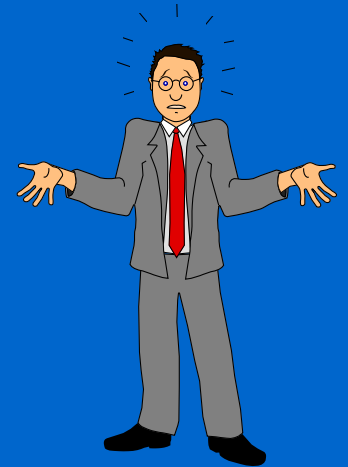
22.3 Design/Implementation - Human Dimensions Study

- Theoretical framework provides the foundation
- Identify the specific study objectives

	OBJECTIVES
1.	?
2.	?
3.	?

Selection of the population of interest

- Who is likely to be affected by decisions?
- Whose values should be considered?
- Whose opinions should be included?



Sampling considerations

- **Size of sample**
 - **Desired level of accuracy and precision**
 - **Desired rate of response**
 - **Expected variability in responses**
 - **Resources available for the study**



Contact information can be obtained through

- Fishing license records
- Boat permit registration
- Youth groups
- None is a true representation of the public

UNIVERSAL LICENSE FORM

AG & FC License Division
Arkansas Department of Game & Inland Fisheries
Little Rock, AR 72202
501-622-4222

INVENTORY NO. 11-752-507

Call 1-800-364-GAME to order licenses or to replace lost, stolen or destroyed licenses.

Call 1-800-422-ACCE to report violation of Game & Fish Regulations. REWARDS up to \$500.

Annual terms are valid one year from date of purchase except for the Arkansas Waterfowl Stamp (Code OS and OSW), Harvest Information Program (Code HP) and Non-Resident Annual All Game Hunting License (Code MS) which expire on June 30th.

LIC#: 146281 842081 153629

CHRISTOPHER RACEY
DOB: 10/28/1975 HT: 5'6"
SEX: M EYES: BROWN

ID: 001-4087667
EXPIRES: 01/04/2001
ISSUE: 12-30-99

ITEM	QTY	UNIT	EXP DATE
OS	1	OS	01/04/2002
YPR	1	YPR	01/04/2002

SIGNATURE: [Signature]

I agree to allow the Arkansas Department of Game & Inland Fisheries to use my name and picture for promotional purposes for purchasing this license.



Development of the instrument

- Designing instrument takes time
- List concepts of interest
- Narrow down by ordering, clarifying and wording

Instrument should be

- **Clear**
- **Concise**
- **Understandable to research participants**



Each question should

- **Pertain to single concept**
- **Relevant to research objectives**
- **Precise**
- **Neutral (not leading)**

Good questions

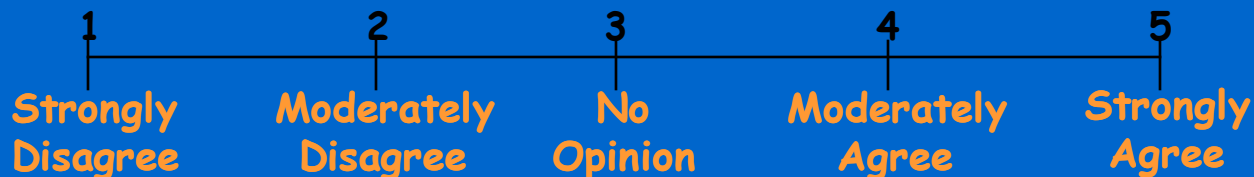
- In complete sentences
- Carefully defining terms
- Meaningful response categories
- Avoid impression that researcher would think negatively of certain answers

Question structures

- Checklists
- Likert format agreement scales
- Semantic differential lists
- Rating questions
- Ranking questions

Q. Do you think crappie should be stocked every year?

Example of a Likert Scale question



Mail survey questionnaires

- **Effectiveness influenced by**
 - **Population studied**
 - **Interest in the research topic**
 - **Ease of completing questionnaire**

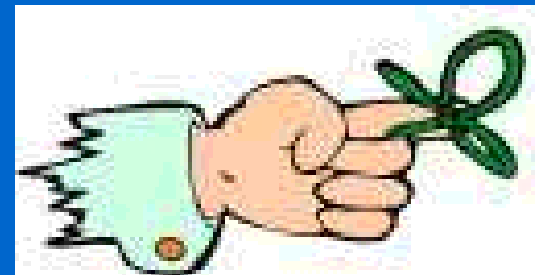
Factors affecting questionnaire completion

- Size of lettering
- Length of survey
- Complexity of questions
- Time span of memory recall required

Question 1.

vs.

Question 1.



Telephone survey questionnaires



- Permit smooth flow during interview
- Should have introductory statement

Telephone survey questionnaires (cont.)

- Easy to answer at the beginning
- Screening questions at beginning
- Difficult/confidential left to end

How many fish did you catch last week?



Could you give me your opinion on....



Individual and group interview protocols

- Begin with description and purpose of study
- Open and closed ended questions
- Tape recorder and video cameras can be use



Instrument quality considerations

- **Validity**
 - Depends on definitions
 - Clear, careful wording necessary

Approaches to Assess Validity

- **Pragmatic validation**
 - How well measure enables researcher to predict behavior
- **Construct validation**
 - Infers validity by assessing relationship with other measures



Approaches to Assess Validity (cont.)

- **Discriminant validity**
 - Extent to which it is unrelated to measures of theoretically distinct concepts



- **Face validity**
 - Intuitively obvious relationship between measure and the concept related

Reliability

- **Consistent results for same group**

Objective by question matrix

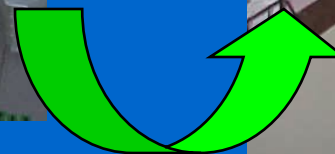
- Designed to address the specific concept area/objective

Pretesting

- **Content and structure is consistent with research objectives**

Participation rate

- Not all people contacted participate
- Self-selection may result in "nonrespondent bias"



Implementation of the study

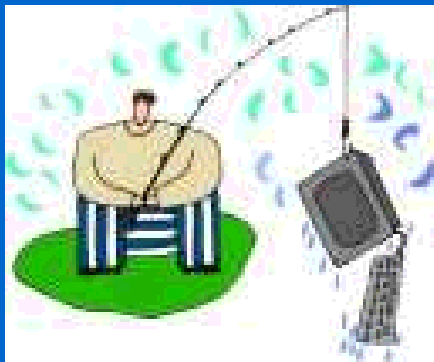
- Legal and procedural concerns
 - Assure respondent confidentiality



Implementation considerations

- **Timing**
- **Coding considerations**
- **Nonrespondent considerations**

22.4 Tools for measuring the human dimension



- **Computer software**
 - Various new software

