

# TECH 646 Analysis of Research in Industry and Technology

## PART III

### The Sources and Collection of data: Measurement, Measurement Scales, Questionnaires & Instruments, Sampling

### Ch. 13 Questionnaires and Instrument

Lecture note based on the text book and supplemental materials:

Cooper, D.R., & Schindler, P.S., *Business Research Methods* (12th edition), McGraw-Hill/Irwin

Paul I-Hai Lin, Professor of ECET

<http://www.etcs.pfw.edu/~lin>

A Core Course for M.S. In Technology Graduate Program  
Purdue University Fort Wayne

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## Ch. 13 Questionnaires & Instruments

### Learning Objectives ... Understand

- The link forged between the management dilemma and the communication instrument by the management-research question hierarchy.
- The influence of the communication method on instrument design.
- The three general classes of information and what each contributes to the instrument.

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## Ch. 13 Questionnaires & Instruments

### Learning Objectives ... Understand

- The influence of question content, question wording, response strategy, and preliminary analysis planning on question construction.
- Each of the numerous question design issues influencing instrument quality, reliability, and validity.
- The sources for measurement questions
- The importance of pretesting questions and instruments.

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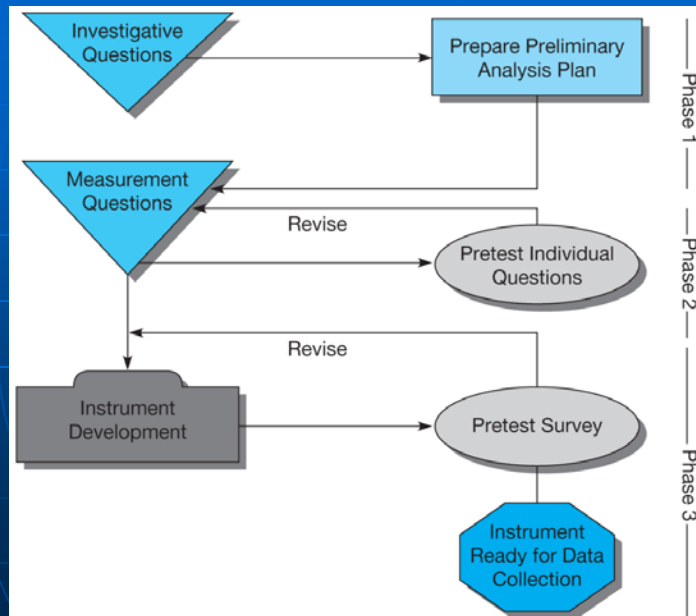
### Research Thought Leader

- “WAP (mobile browser–based) surveys offer full survey functionality (including multimedia) and can be accessed from any phone with a web browser (which is roughly 90 percent of all mobile devices). As an industry we need to get comfortable with mobile survey formats because there are fundamental differences in survey design and we also need to be focused on building our mobile capabilities as part of our sampling practice.”

■ **Kristin Luck**, President,  
Decipher

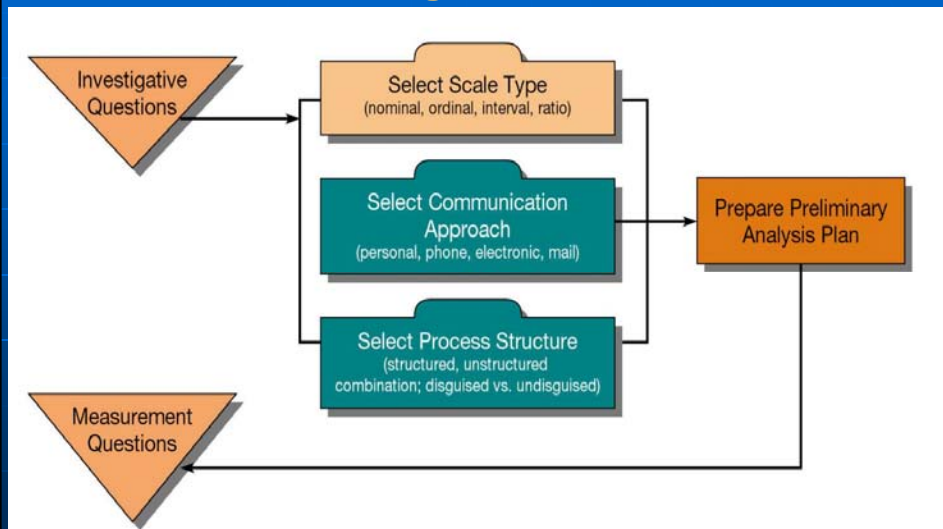
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## Overall Flowchart for Instrument Design



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## Flowchart for Instrument Design Phase I



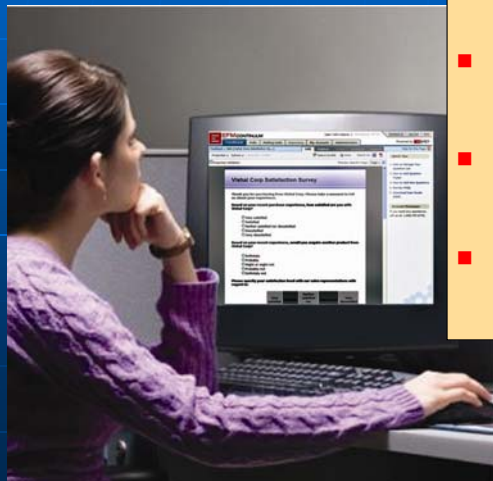
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## Strategic Concerns in Instrument Design

1. What Type of scale for desired analysis?
2. What Communication approach will be used?
3. Questions: be Structured/Unstructured/Combination?
4. Disguising questioning?

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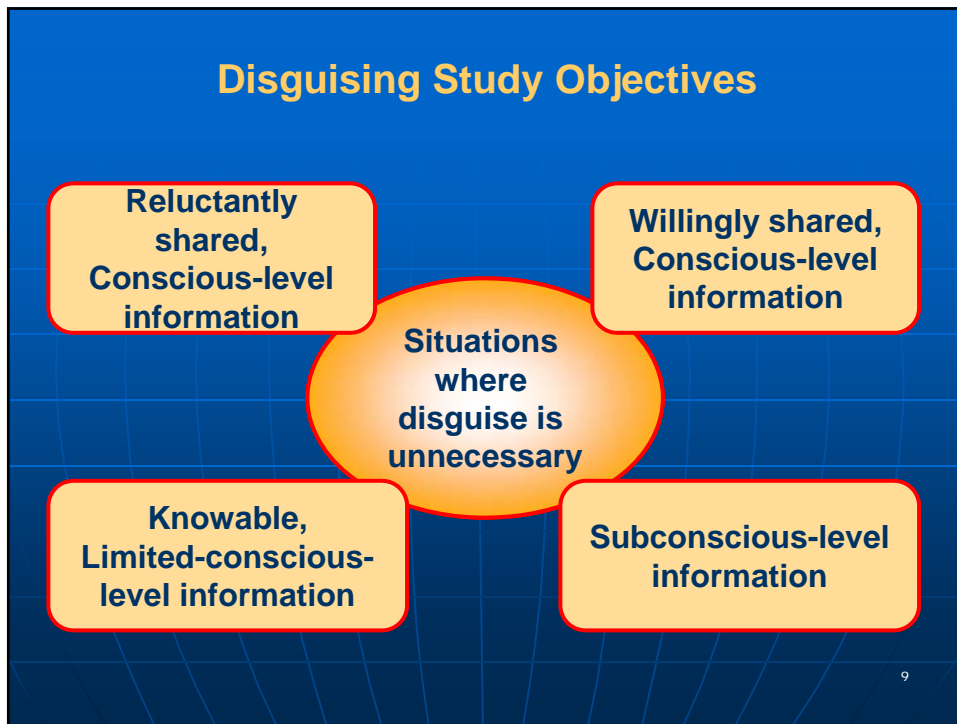
## Technology Affects Questionnaire Development



- Write questionnaires more quickly
- Create visually driven instruments
- Eliminate manual data entry
- Save time in data analysis

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## Disguising Study Objectives



## Factors Affecting Respondent Honesty

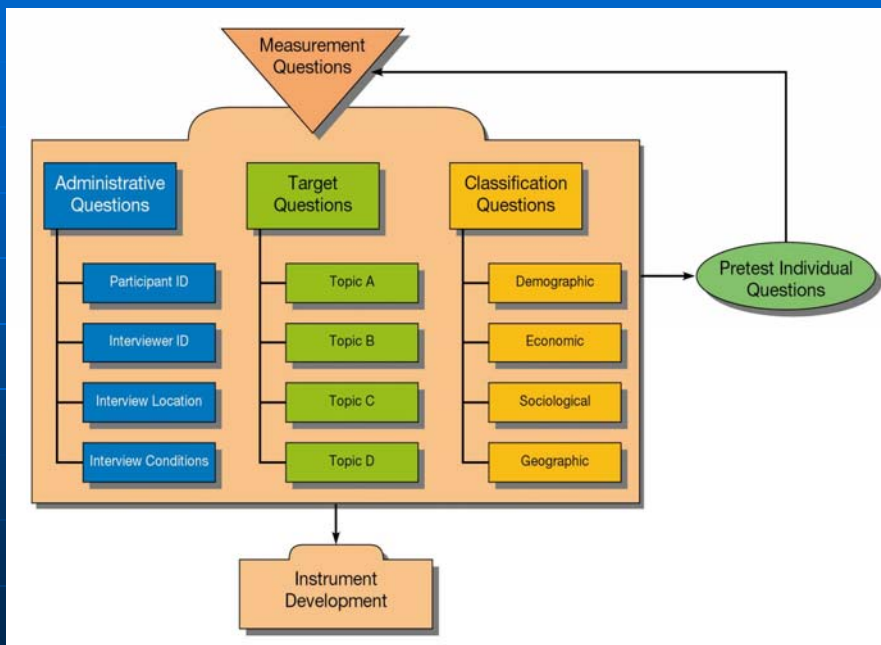
Syndrome	Description	Example
Peacock	Desire to be perceived as smarter, wealthier, happier, or better than others.	Respondent who claims to shop Harrods in London (twice as many as those that do).
Pleaser	Desire to help by providing answers they think the researchers want to hear, to please or avoid offending or being socially stigmatized.	Respondent gives a politically correct or assumed correct answer about degree to which they revere their elders, respect their spouse, etc.
Gamer	Adaption of answers to play the system.	Participants who fake membership to a specific demographic to participate in high remuneration study; that they drive an expensive car when they don't or that they have cancer when they don't.
Disengager	Don't want to think deeply about a subject.	Falsify ad recall or purchase behavior (didn't recall or didn't buy) when they actually did.
Self-delusionist	Participants who lie to themselves.	Respondent who falsifies behavior, like the level they recycle.
Unconscious Decision Maker	Participants who are dominated by irrational decision making.	Respondent who cannot predict with any certainty his future behavior.
Ignoramus	Participant who never knew or doesn't remember an answer and makes up a lie.	Respondent who can't identify on a map where they live or remember what they ate for supper the previous evening.

## Dummy Table for American Eating Habit

Age	Use of Convenience Foods				
	Always Use	Use Frequently	Use Sometimes	Rarely Use	Never Use
18-24					
25-34					
35-44					
55-64					
65+					

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## Flowchart for Instrument Design Phase 2



## Question Categories and Structure

**Administrative Questions**

**Classification Questions**

**Target Questions**  
(structured – closed questions  
unstructured – open-ended questions )

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## Question Content

Should this question be asked?

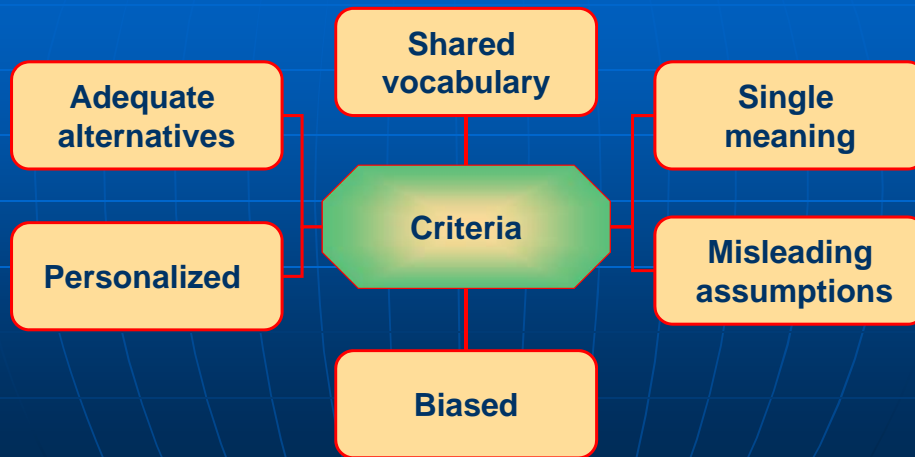
Is the question of proper scope and coverage?

Can the participant adequately answer this question as asked?

Will the participant willingly answer this question as asked?

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## Question Wording



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## A Survey Cold as Ice, [www.rti.org](http://www.rti.org)

- The goal of the survey
  - Give decision maker and the public information that would be useful in **preparing** for the **state's next natural disaster**
- A telephone survey of 47 households in 36 counties – those counties included in North Carolina's application for federal disaster assistance.

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## A Survey Cold as Ice, [www.rti.org](http://www.rti.org)

- 80% of households indicated a willingness to take preventive actions – including 47 percent that were willing to pay extra on their monthly bill to buy power lines.
- One of the more significant findings was that the municipal power companies responded more quickly and earned a higher performance rating from customers than did Duke Power and Progress Energy.
- What types of measurement scales would be necessary to complete this table?

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## Power Supplier Response Satisfaction Rating

Days without Power	Power Supplier Response Satisfaction Rating		
	Municipal Power	Duke Power	Progress Energy
	7.6	6.6	6.5
1			
2			
3			
Etc.			

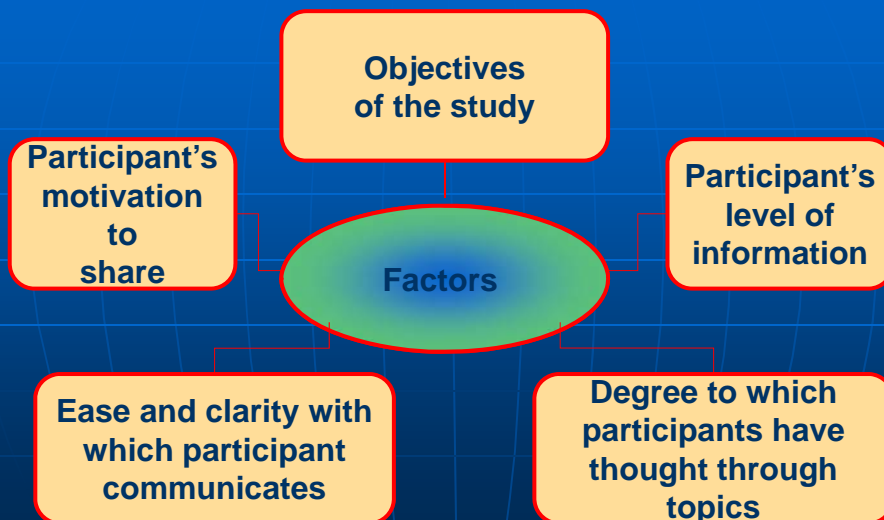
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## A Survey Cold as Ice, [www.rti.org](http://www.rti.org)

- What types of measurement scales would be necessary to complete this table?
- On a 10-point satisfaction scale (“I was satisfied with my electric power company’s response to the ice storm”)
  - Where 5 was “neither agree nor disagree,”
  - Municipal Power – 7.6 point
  - Duke Power – 6.6 points
  - Progress Energy – 6.5 points
  - The survey had a margin of error of  $\pm 4.7$  percent

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## Response Strategy



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## Response Strategy (continue)

- Free-Response Question
- Dichotomous Question
- Multiple-Choice Question
- Checklist
- Rating Question
- Ranking Question

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## Free-Response Question

- Also called “Open-Ended Question”
- Difficult to interpret and are costly to analyze
- Try to reduce the number of these questions
- **Internet Survey**
  - Text Box

What factors influenced your enrollment in Metro U?

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## Dichotomous Response Strategy

- Nominal data
- Offer two mutually exclusive and exhaustive alternatives
- **Internet Survey**
  - Radio buttons OR
  - Pull-down box

Did you attend the “A Day at College” program at Metro U?

- Yes
- No

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## Multiple Choice Questions

- Nominal data: classification, no order, distance or natural origin
- More than 2 alternatives, or Seek gradations of preference, interest, or agreement
- **Problems:**
  - When one or more responses have not been anticipated
  - The list of choices is not exhaustive

Which one of the following factors was most influential in your decision to attend Metro U?

- Good academic standing
- Specific program of study desired
- Enjoyable campus life
- Many friends from home
- High quality of faculty

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## Checklist Question/Response

- Nominal data
- A question poses numeral alternatives and encourages multiple unordered responses.

Which of the following factors influenced your decision to enroll in Metro U?  
(Check all that apply.)

- Tuition cost
- Specific program of study desired
- Parents' preferences
- Opinion of brother or sister
- Many friends from home attend
- High quality of faculty

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## Rating Question/Response

- Ordinal data: classification and order
- Interval data: classification, order, and distance; no natural origin

	Strongly influential	Somewhat influential	Not at all influential
Good academic reputation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enjoyable campus life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High quality faculty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Semester calendar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Ranking Question

- Ordinal data: classification, order

**Please rank-order your top three factors from the following list based on their influence in encouraging you to apply to Metro U. Use 1 to indicate the most encouraging factor, 2 the next most encouraging factor, etc.**

- \_\_\_\_\_ Opportunity to play collegiate sports
- \_\_\_\_\_ Closeness to home
- \_\_\_\_\_ Enjoyable campus life
- \_\_\_\_\_ Good academic reputation
- \_\_\_\_\_ High quality of faculty

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### Exhibit 13-6 Issues Related to Measurement Questions

Issue Category	Fundamental Issue
<b>Question Content</b>	
1. Purposeful versus interesting	Does the question ask for data that will be merely interesting or truly useful in making a decision?
2. Incomplete or unfocused	Will the question reveal what the decision maker needs to know?
3. Double-barreled questions	Does the question ask the participant for too much information? Would the desired single response be accurate for all parts of the question?
4. Precision	Does the question ask precisely what the decision maker needs to know?
5. Time for thought	Is it reasonable to assume that the participant can frame an answer to the question?
6. Participation at the expense of accuracy	Does the question pressure the participant for a response regardless of knowledge or experience?
7. Presumed knowledge	Does the question assume the participant has knowledge he or she may not have?
8. Recall and memory decay	Does the question ask the participant for information that relates to thoughts or activity too far in the participant's past to be remembered?
9. Balance (general vs. specific)	Does the question ask the participant to generalize or summarize behavior that may have no discernable pattern?
10. Objectivity	Does the question omit or include information that will bias the participant's response?

## Exhibit 13-6 Issues Related to Measurement Questions

Issue Category	Fundamental Issue
<b>Question Wording</b>	
12. Shared vocabulary	Does the question use words that have no meaning or a different meaning for the participant?
13. Unsupported assumption	Does the question assume a prior experience, a precondition, or prior knowledge that the participant does not or may not have?
14. Frame of reference	Is the question worded from the participant's, rather than the researcher's, perspective?
15. Biased wording	Does the question contain wording that implies the researcher's desire for the participant to respond in one way versus another?
16. Personalization vs. projection	Is it necessary for the participant to reveal personal attitudes and behavior, or may the participant project these attitudes and behaviors to someone like him or her?
17. Adequate alternatives	Does the question provide a mutually exhaustive list of alternatives to encompass realistic or likely participant attitudes and behaviors?

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## Exhibit 13-6 Issues Related to Measurement Questions

Issue Category	Fundamental Issue
<b>Response Strategy Choice</b>	
18. Objective of the study	Is the question designed to classify or label attitudes, conditions, and behaviors or to reveal them?
19. Level of information	Does the participant possess the level of information appropriate for participation in the study?
20. Thoroughness of prior thought	Has the participant developed an attitude on the issue being asked?
21. Communication skill	Does the participant have sufficient command of the language to answer the question?
22. Participant motivation	Is the level of motivation sufficient to encourage the participant to give thoughtful, revealing answers?

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### Exhibit 13-8 Summary of Scale Type

Type	Restrictions	Scale Items	Data Type
<b>Rating Scales</b>			
<b>Simple Category Scale</b>	<ul style="list-style-type: none"> <li>Needs mutually exclusive choices</li> </ul>	One or more	Nominal
<b>Multiple Choice Single-Response Scale</b>	<ul style="list-style-type: none"> <li>Needs mutually exclusive choices</li> <li>May use exhaustive list or 'other'</li> </ul>	Many	Nominal
<b>Multiple Choice Multiple-Response Scale (checklist)</b>	<ul style="list-style-type: none"> <li>Needs mutually exclusive choices</li> <li>Needs exhaustive list or 'other'</li> </ul>	Many	Nominal
<b>Likert Scale</b>	<ul style="list-style-type: none"> <li>Needs definitive positive or negative statements with which to agree/disagree</li> </ul>	One or more	Ordinal
<b>Likert-type Scale</b>	<ul style="list-style-type: none"> <li>Needs definitive positive or negative statements with which to agree/disagree</li> </ul>	One or more	Ordinal

### Exhibit 13-8 Summary of Scale Type (cont.)

Type	Restrictions	Scale Items	Data Type
<b>Rating Scales</b>			
<b>Numerical Scale</b>	<ul style="list-style-type: none"> <li>Needs concepts with standardized meanings;</li> <li>Needs number anchors of the scale or end-points</li> <li>Score is a measurement of graphical space</li> </ul>	One or many	Ordinal or Interval
<b>Multiple Rating List Scale</b>	<ul style="list-style-type: none"> <li>Needs words that are opposites to anchor the end-points on the verbal scale</li> </ul>	Up to 10	Ordinal
<b>Fixed Sum Scale</b>	<ul style="list-style-type: none"> <li>Participant needs ability to calculate total to some fixed number, often 100.</li> </ul>	Two or more	Interval or Ratio



## Summary of Scale Type (cont.)

Type	Restrictions	Scale Items	Data Type
<b>Rating Scales</b>			
<b>Stapel Scale</b>	•Needs verbal labels that are operationally defined or standard.	One or more	Ordinal or Interval
<b>Graphic Rating Scale</b>	•Needs visual images that can be interpreted as positive or negative anchors •Score is a measurement of graphical space from one anchor.	One or more	Ordinal (Interval, or Ratio)

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## Exhibit 13-8 Summary of Scale Type (cont.)

### ■ Ranking Scale

Type	Restrictions	Scale Items	Data Type
<b>Ranking Scales</b>			
<b>Paired Comparison Scale</b>	• Number is controlled by participant's stamina and interest.	Up to 10	Ordinal
<b>Forced Ranking Scale</b>	• Needs mutually exclusive choices.	Up to 10	Ordinal or Interval
<b>Comparative Scale</b>	• Can use verbal or graphical scale.	Up to 10	Ordinal

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## Exhibit 13-7 Internet Survey – Scale Options

Where have you seen advertising for MindWriter laptop computers?


**Free Response/Open Question**  
using textbox

**Dichotomous Question**  
using radio buttons  
(may also use pull-down box)

I plan to purchase a MindWriter laptop in the next 3 months.

- Yes  
 No

My next laptop computer will have . . .

- More memory.  
 More processing speed.

**Paired Comparison**  
using radio buttons  
(may also use pull-down box)

**Multiple Choice, Single Response**  
using radio buttons  
(may also use pull-down box or checkbox)

What ONE magazine do you read most often for computing news?

- PC Magazine  
 Wired  
 Computing Magazine  
 Computing World  
 PC Computing  
 Laptop

## Exhibit 13-7 Internet Survey – Scale Options

What ONE magazine do you read most often for computing news?

Please select your answer	v
PC Magazine	v
Wired	
Computing Magazine	
Computing World	
PC Computing	
Laptop	

**Multiple Choice, Single Response**  
using pull-down box

**Checklist**  
using checkbox  
(may also use radio buttons)

Which of the following computing magazines did you look at in the last 30 days?

- PC Magazine  
 Wired  
 Computing Magazine  
 Computing World  
 PC Computing  
 Laptop

## Internet Survey – Scale Options

Please indicate the importance of each of the characteristics in choosing your next laptop.  
[Select one answer in each row. Scroll to see the complete list of options.]

	Very Important	Neither Important nor Unimportant	Not at all Important
Fast reliable repair service	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service at my location	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Maintenance by the manufacturer	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledgeable technicians	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Notification of upgrades	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

### Rating Grid

(may also use checkboxes)  
Requires a single response per line.  
The longer the list, the more likely the participant must scroll.

**Ranking Question**  
using pull-down box  
(may also use textboxes,  
in which ranks are entered)  
[This question asks for  
a limited ranking of  
only three of the  
listed elements.]

From the list below, please choose the three most important service options when choosing your next laptop.

Fast reliable repair service	— v
Service at my location	1
Maintenance by the manufacturer	2
Knowledgeable technicians	3
Notification of upgrades	— v

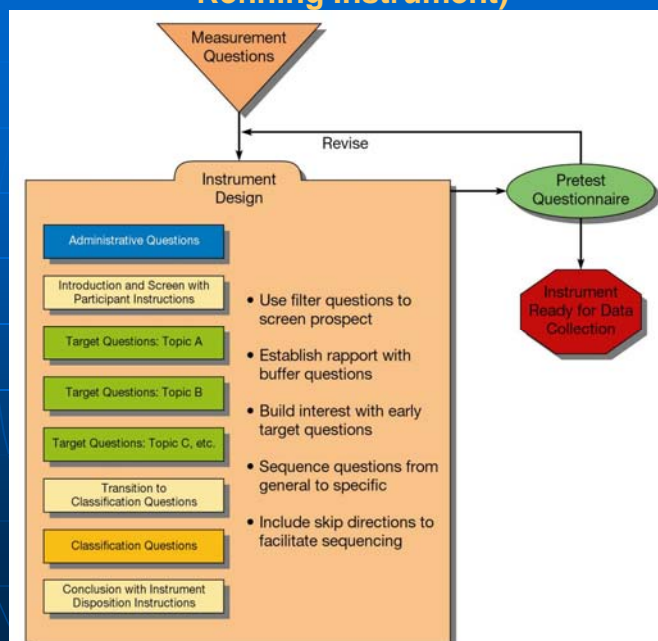
## Sources of Questions

- Handbook of Marketing Scales
- The Gallup Poll Cumulative Index
- Measures of Personality and Social-Psychological Attitudes
- Measures of Political Attitudes

- Index to International Public Opinion
- Sourcebook of Harris National Surveys
- Marketing Scales Handbook
- American Social Attitudes Data Sourcebook

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## Flowchart for Instrument: Design Phase 3 (Drafting and Refining Instrument)



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## Guidelines for Question Sequencing

Interesting topics early

Simple topics early

Sensitive questions later

Classification questions later

Transition between topics

Reference changes limited

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## Illustrating the Funnel Approach

- How do you think this country is getting along in its relations with other countries?
- How do you think we are doing in our relations with Iran?
- Do you think we ought to be dealing with Iran differently than we are now?
- (If yes) What should we be doing differently?
- Some people say we should get tougher with Iran and others think we are too tough as it is; how do you feel about it?

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## Branching Question

2. Which of the following attributes do you like about the automobile you just saw? (Select all that apply)

- Overall appeal
- Headroom
- Design
- Color
- Height from the ground
- Other
- None of the above

Next Question

3. For those items that you selected, how important is each? (Provide one answer for each attribute)

	Extremely important		Neither important nor not important		Not at all important	Don't know
a) Overall appeal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Height from the ground	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Headroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Components of Questionnaires

Component	Example
<b>Introduction</b> a. Phone/personal interview	Good evening. May I please speak with (name of participant)? Mr. (participant's last name), I'm (your name), calling on behalf of MindWriter Corporation. You recently had your MindWriter laptop serviced at our CompleteCare Center. Could you take five minutes to tell us what you thought of the service provided by the Center?
b. Online (often delivered via email)	You've recently had your MindWriter laptop serviced at our CompleteCare Center. Could you take five minutes to tell us what you thought of the service provided by the Center? Just click the link below.
<b>Transition</b>	The next set of questions asks about your family and how you enjoy spending your nonworking or personal time.

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## Components of Questionnaires

Component	Example
<b>Instructions for...</b> a. Terminating (following filter or screen question)	<i>Phone:</i> I'm sorry, today we are only talking with individuals who eat cereal at least three days per week, but thank you for speaking with me. (Pause for participant reply.) Good-bye. <i>Online:</i> You do not qualify for this particular study. Click below to see other studies for which you might qualify.
b. Participant discontinuation	Would there be a time I could call back to complete the interview? (Pause; record time.) We'll call you back then at (repeat day, time). Thank you for talking with me this evening. Or: I appreciate your spending some time talking with me. Thank you.
c. Skip directions (between questions or groups of questions...paper or phone)	3. Did you purchase boxed cereal in the last 7 days? <input type="checkbox"/> Yes <input type="checkbox"/> No (skip to question 7)
d. Disposition instructions	<i>Paper survey:</i> A postage-paid envelope was included with your survey. Please refold your completed survey and mail it to us in the postage-paid envelope. <i>Online:</i> Please click DONE to submit your survey and enter the contest.


## Components of Questionnaires

Component	Example
<b>Conclusion</b> a. Phone or personal interview	That's my last question. Your insights and the ideas of other valuable customers will help us to make the CompleteCare program the best it can be. Thank you for talking with us this evening. (Pause for participant reply.) Good evening.
b. Self-administered (usually precedes the disposition instructions)	Thank you for sharing your ideas about the CompleteCare program. Your insights will help us serve you better.

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## MindWriter Survey (Exhibit 13-13)

**MindWriter** personal computers offer you ease of use and maintenance. When you need service, we want you to rely on **CompleteCare**, wherever you may be. That's why we're asking you to take a moment to tell us how well we've served you.

 **MindWriter**

**Please answer the first set of questions using the following scale:**

Met Few Expectations 1	Met Some Expectations 2	Met Most Expectations 3	Met All Expectations 4	Exceeded Expectations 5		
<b>1. Telephone assistance with your problem:</b>						
		1	2	3	4	5
a. Responsiveness		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Technical competence		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>2. The courier service's effectiveness:</b>						
a. Arrangements		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Pickup speed		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Delivery speed		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Speed of the overall repair process		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Resolution of the problem that prompted service/repair		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Condition of your MindWriter on arrival		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Overall impression of CompleteCare's effectiveness		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>How likely would you be to . . .</b>						
	Very Unlikely	Somewhat Unlikely	Neither Unlikely nor Likely	Somewhat Likely	Very Likely	
7. Use CompleteCare on another occasion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>8. Repurchase another MindWriter based on:</b>						
a. Service/repair experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
b. Product Performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>Please share any additional comments or suggestions</b>						
<b>How may we contact you to follow up on any problems you have experienced?</b>						
Last Name <input style="width: 100px;" type="text"/>		First Name <input style="width: 100px;" type="text"/>		Email <input style="width: 150px;" type="text"/>		
City <input style="width: 100px;" type="text"/>		State <input style="width: 50px;" type="text"/>		Zipcode <input style="width: 100px;" type="text"/>		Phone <input style="width: 100px;" type="text"/>
<input type="button" value="Service Code"/>						
Thank you for your participation.						
<input type="button" value="SUBMIT"/>						

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## MindWriter Survey (Exhibit 13-13)

**MindWriter** personal computers offer you ease of use and maintenance. When you need service, we want you to rely on **CompleteCare**, wherever you may be. That's why we're asking you to take a moment to tell us how well we've served you.



Please answer the first set of questions using the following scale:

Met Few Expectations 1	Met Some Expectations 2	Met Most Expectations 3	Met All Expectations 4	Exceeded Expectations 5
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	1	2	3	4	5
1. Telephone assistance with your problem:					
a. Responsiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Technical competence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. The courier service's effectiveness:					
a. Arrangements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Pickup speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Delivery speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Speed of the overall repair process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Resolution of the problem that prompted service/repair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Condition of your MindWriter on arrival	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Overall impression of CompleteCare's effectiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## MindWriter Survey (Exhibit 13-13)

How likely would you be to . . .

	Very Unlikely	Somewhat Unlikely	Neither Unlikely nor Likely	Somewhat Likely	Very Likely
7. Use CompleteCare on another occasion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Repurchase another MindWriter based on:					
a. Service/repair experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Product Performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please share any additional comments or suggestions

How may we contact you to follow up on any problems you have experienced?

Last Name  First Name  Email

City  State  Zipcode  Phone

Service Code

Thank you for your participation.



## Overcoming Instrument Problems

Survey

Excellent:

Good:

Fair:

Poor:

- Build rapport
- Redesign question process
- Explore alternatives
- Use other methods
- Pretest

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## Snapshot: Mobile Questionnaires

- 10 or fewer questions
- Simple question modes
- Minimize scrolling
- Minimize non-essential content
- Minimize distraction

decipher

Please indicate your gender:

select one

Male

Female

Which of the following age groups do you fall into?

select one

Under 18

18-29

30-54

55 or over

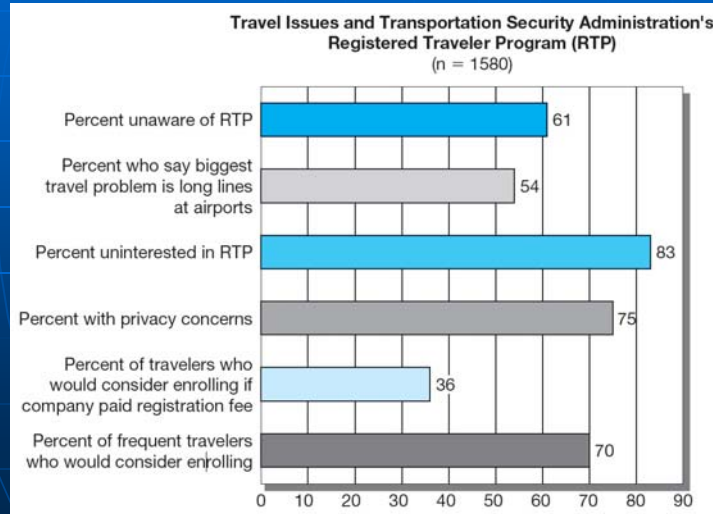
Continue >

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Menu

## PicProfile: Travel Issues, page 309

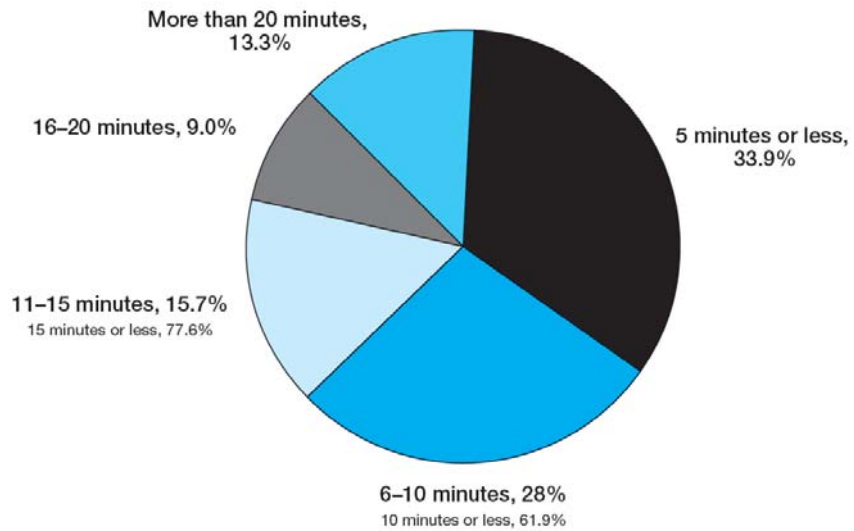
- Exercise: Create questions that can generate this information.



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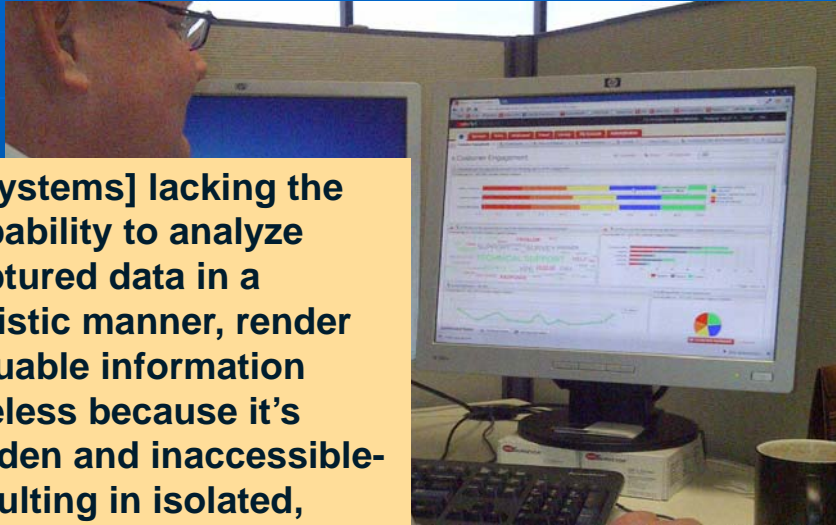
## PicProfile: Survey Length, page 318

### Maximum Online Survey Length Prior to Abandonment



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## Verint: Enterprise Feedback Management



**“[Systems] lacking the capability to analyze captured data in a holistic manner, render valuable information useless because it’s hidden and inaccessible—resulting in isolated, cumbersome decision-making.”**

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## PicProfile: Invoke Engage

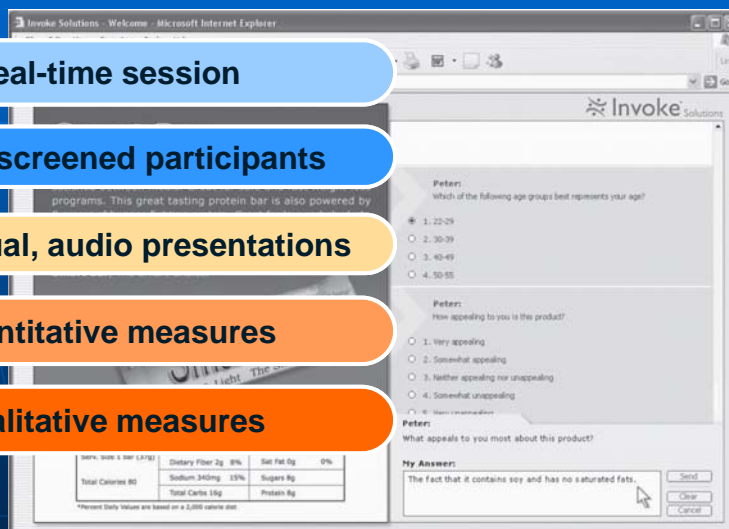
Real-time session

200 prescreened participants

Text, visual, audio presentations

Quantitative measures

Qualitative measures



## Key Terms

- Administrative question
- Branched question
- Buffer question
- Checklist
- Classification question
- Dichotomous question
- Disguised question
- Double-barreled question
- Free-response question
- Interview schedule
- Leading question
- Multiple-choice question

55

## Key Terms

- Pretesting
- Primacy effect
- Ranking question
- Rating question
- Recency effort
- Screen question
- Structured response
- Target question
  - Structured
  - Unstructured
- Unstructured response

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