IV. RESEARCH STEPS

4.10 Data collecting method

Quality of data is not only determined by the reliability and validity of the measuring instrument, but determined by how to collecting the data

Aspects of Data collection process:

•What the data will be collected ***(What)***
• ***(With)***
• where the data is collected ***(Where)***
• When the data is collected ***(When)***
• How to collect the data ***(How)***

Data collecting method :

• observation
• Survey
• Interview
• Experiment

IV. RESEARCH STEPS

Observation

The collection of data by observation and recording by data collector the symptoms / events that investigated the research object

characteristics :

No interaction between the objects observed by observers / data collectors

Example :

- Observations about the total of vehicles passing on the highway Krapyak-Jatingaleh to analyze traffic levels at Semarang toll road
- Observations about the total of Supermarket visitor to analyze consumer interest in determining the choice of where to shopping

IV. RESEARCH STEPS

Observation advantage :

- The data is up to date
- The data is objective

Observation weakness:

- Need a lot of time
- Can not be used for past and future data collection
- Can not be used for data collection related to the attitudes and motivations and behaviors of respondents

IV. RESEARCH STEPS

Observastion preparation :

- content
  - ➔ what data will be observed ?
- Object
  - ➔ what / who is going to be observed?
- Tools
  - ➔ direct observation or using tools?
- Time
  - ➔ when it will be observed?
- Documentation
  - ➔ direct recording or using tools?

IV. RESEARCH STEPS

Survey

Collecting data by information request / response to a data source using the question list / questionnaire / questionnaire as a tool

How to use questionnaire:

- Face to face with the source of data
- By telephone
- By mail

Characteristic :

There are interactions between objects observed by observers / data collectors

Example:

- The survey about soap brand most preferred by housewives
- The survey about inventory system at “sehat sejahtera” pharmachy

IV. RESEARCH STEPS

Survey Advantage :

•The data is real and objective

• Can be applied to data collection in a large scope

• Efficient

Survey Weakness:

• There is a veiled information from respondents, especially for information relating to the character, motivation or behavior of respondents

• Respondents sometimes does not answer what it is but what it should

• Respondents are limited to certain answers

•Respondents often did not return the questionnaire

• Answers often appear undesirable

IV. RESEARCH STEPS

Survey preparation:

- design of the questionnaire
  - ➔ describe the purpose of the questionnaire to the respondent
  - ➔ create a list of questions
  - ➔ create code for answers
  - ➔ create instructions for answering questions
- Trial questionnaire
- ➔ test questionnaire and analysis of weakness questionnaire
- Completion of questionnaire
  - ➔ doing repairs and improvements questionnaire from the trial results
- Selection of respondents
- ➔ clearly establishes the criteria and who will be given a questionnaire respondents
- Implementation
  - ➔ distributing questionnaires and define the technical implementation

IV. RESEARCH STEPS

Making a good questionnaire:

- have an instruction as to the purpose of the questionnaire given
- have an instruction as to how to fill out a questionnaire
- Using easy sentences to understand and not biased meaning
- Avoid questions that are not obvious, unnecessary and irrelevant
- Avoid suggestive questions, pitched pressing / threatening etc.
- Using a logical sequence and systematic inquiry
- Keep the identity of the respondent that the respondent objective in answering

IV. RESEARCH STEPS

Interview

The collection of data by face-to-face and direct questioning between the interviewer and respondent

Characteristic :

Have an interaction and communication between the interviewer and respondent

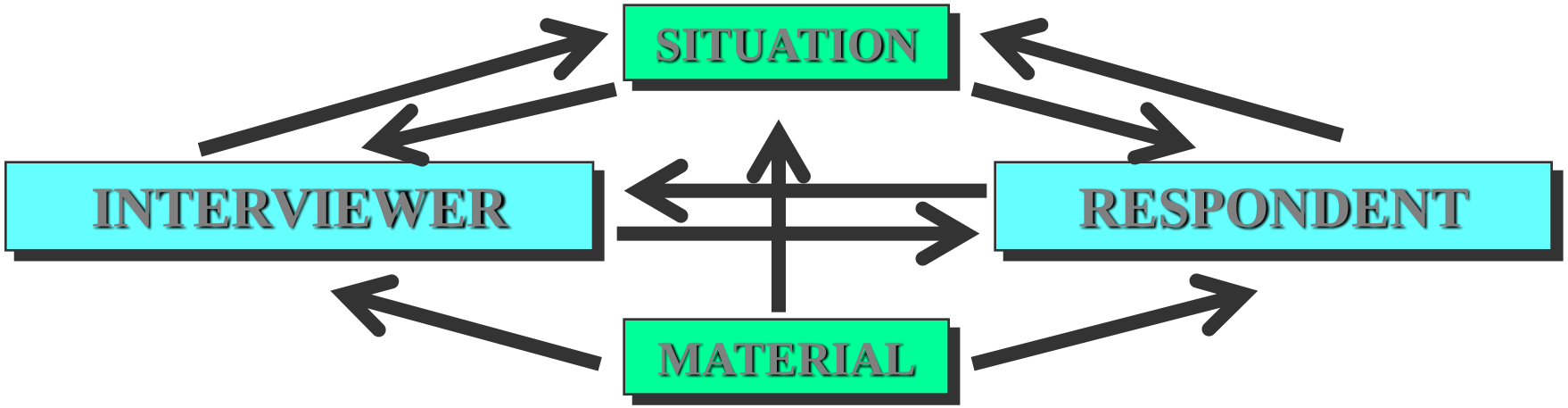
Before the interview begins :

- Describe the purpose of interview
- Describe why respondents selected for interview
- Describe the identity of interviewer
- Describe the type of interview : open or closed (secret)

IV. RESEARCH STEPS

Components and Factors affecting in an interview:

- interviewer : social characteristics, abilities, motivation, a sense of security
- Respondents : social characteristics, abilities, motivation, a sense of security
- Interviews material : sensitivity question, question difficulty, substance
- Interview situation : time, place, presence, attitudes



IV. RESEARCH STEPS

EXPERIMENT

Data collecting by recording

Nature :

Terdapat penggunaan alat ukur atau metode eksperimen tertentu

Tahapan Eksperimen/Percobaan :

- Identify all relevant variables
- Identification of non-experimental variables that might interfere with the experiment
- choose measuring instruments or instrumentation
- choose design and experimental methods
- choose requirements necessary to experiment
- experiment
- Record the data experimental results

To have a good experiment, you must try experiment with repeatly

4.12 Processing and Data Analysis

After data collected, next do processing and data analyst.
data analysis is intended to give meaning and significance in the data and useful for solving the problem the research that has been formulated.
Before the data analysis is done, the data need to be processed first.

Data processing includes:

- Editing
- Coding
- Tabulating

IV. RESEARCH STEPS

Editing

Activities to examine the raw data that has been collected, includes:

- Completing the data
- Repair errors in the recording of data
- Check the consistency of data in accordance with the desired data
- Check the uniformity of measurement results
- Check the reliability of data

Coding

Activities to make the code to the data so that making it easier for data analysis. Usually done for qualitative data. With this code, qualitative data can be convert to quantitative data. Quantitative procces following the measurement procedures Exampleapplying the nominal and ordinal scale of measurement.

IV. RESEARCH STEPS

Example

Respondents Religion Data	Nominal Scale (just a label)
Moslem	1
Christian	2
Catholic	3
Hindu	4
Buddha	5

For certain purposes, coding in large numbers, it need a code book as instructions coding is useful for data analysis section. For example, the data entry registration form UMPTN, made its own manual charging separately for easy charging.

IV. RESEARCH STEPS

Tabulating

Activities to create a data table (presenting the data in tabular form) for facilitate data analysis and reporting. Data table made as simple as possible so that information is easily captured by data users as well as for Data analysis section.

Data Analysis

Activity data analysis is a very important part in the research. Research problem-solving and conclusion of a research depends on the results of the data analysis. So that needs to be done carefully and cautiously so as not to give the wrong interpretation of research results. A researcher (part of data analysis) must master the technical scientific capability in applying analytical methods suitable

IV. RESEARCH STEPS

The chosen data analysis methods must be adapted to the type of research.
Consideration of the selection method of analysis can be seen from :

- Research purpose and types
- Model / type of data
- Conclusion level / degree

Example :

Title : Studies on the effect of the election campaign Nedia to increased sales of goods in the PT "New Graha" Semarang
---> Statistical analysis (descriptive / inference)

Title : Academic Information Systems at STMIK Dian Nuswantoro
---> Non-statistical analysis (analysis and design systems)

Title : Effect of fertilizer use "bio-xx" to the increase in yield of cloves
---> Statistical analysis (experimental design)

4.13 Conclude

Activities to give the interpretation of the results of the data analysis. In research that uses hypothesis testing research, conclusions can be drawn from the results of hypothesis testing.

The research conclusion should be appropriate with :

- Research heme, topic and title
- Research problem-solving
- Results of data analysis
- Hypotheses testing (if any)
- Relevant theory / knowledge

Conclusions should be made brief, clear and concise.

IV. RESEARCH STEPS

4.14 Reporting

Final stage of the research activities is a research report. This report is useful for activities and research publications for accountability scientific research activities that have been carried out. In a research report, written systematically all the stages that have been done starting from the planning stage until the conclusion of the study (including the required attachments). Systematics reporting tailored to the conditions set by the agency / institution / sponsor who will manage the research.

TASK

1. Create a full proposal research, appropriate with your specialist
2. Good luck