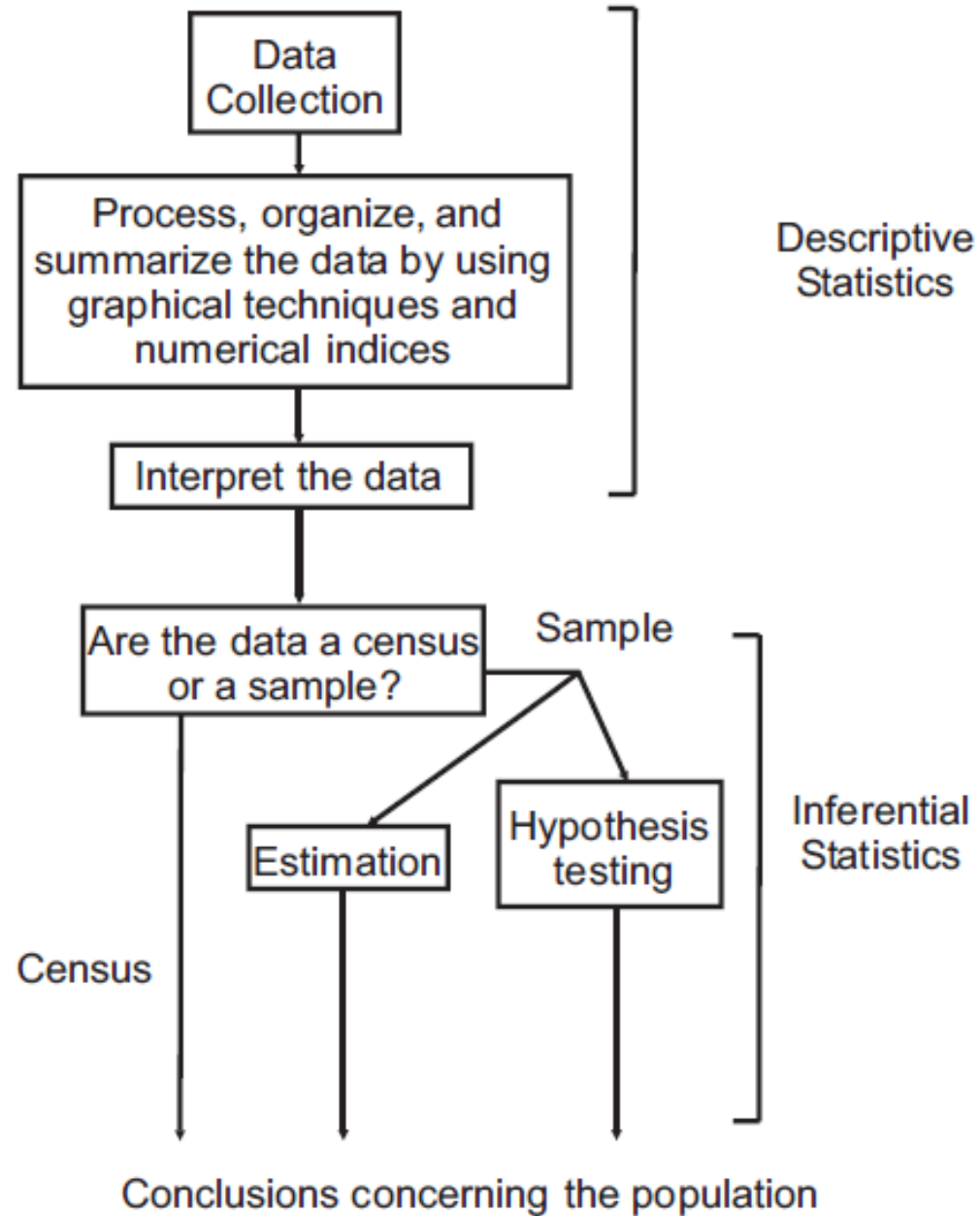


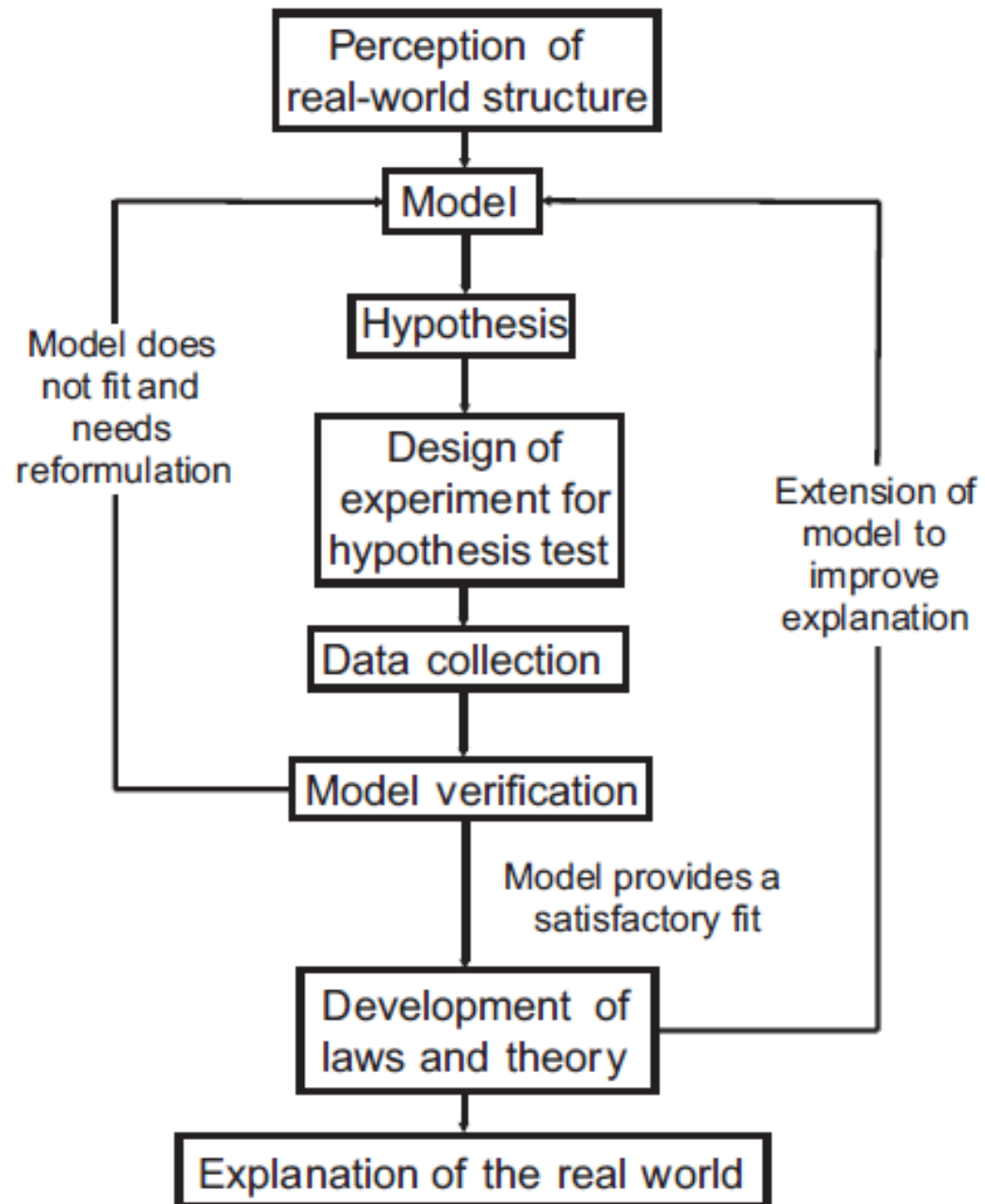
GEO-A-CC-3-07-TH – Statistical Methods in Geography

Topic 3. Sources of geographical data for statistical analysis

GEOGRAPHICAL DATA: TYPES AND SOURCES

MANAS PAUL
ASSISTANT PROFESSOR
RAMMOHAN COLLEGE, KOLKATA





- DEDUCTIVE APPROACH IN GEOGRAPHY

DATA IN STATISTICS

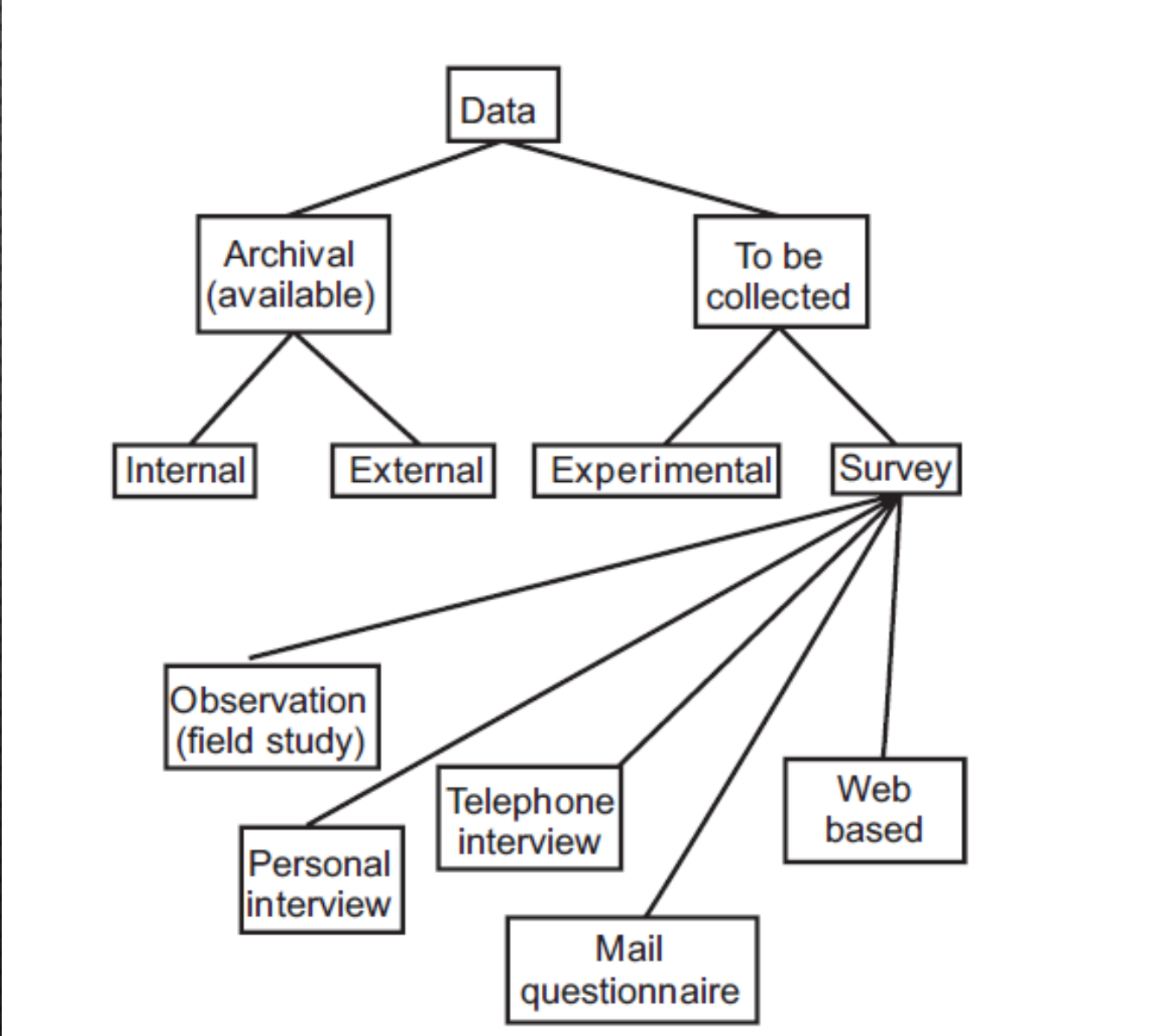
STATISTICAL ANALYSIS BEGINS WITH A DATASET, THIS IS NOT STRICTLY TRUE.

- IT IS NOT UNUSUAL FOR A STATISTICIAN TO BE CONSULTED AT THE EARLIEST STAGES OF A RESEARCH INVESTIGATION. AS THE PROBLEM BECOMES CLEARLY DEFINED AND QUESTIONS OF APPROPRIATE DATA EMERGE
- THE STATISTICIAN CAN OFTEN GIVE INVALUABLE ADVICE ON SOURCES OF DATA, METHODS USED TO COLLECT THEM, AND CHARACTERISTICS OF THE DATA THEMSELVES.
- THE NATURE OF THE DATA USED SHOULD NEVER BE OVERLOOKED.

AS A PRELIMINARY STEP,

- SOURCES OF DATA, THE KINDS OF VARIABLES AMENABLE TO STATISTICAL ANALYSIS, AND SEVERAL CHARACTERISTICS OF THE DATA SUCH AS MEASUREMENT SCALES, PRECISION, AND ACCURACY.

A TYPOLOGY OF DATA SOURCES



TYPES OF DATA

INTERNAL DATA

- DATA AVAILABLE FROM EXISTING RECORDS OR FILES OF AN INSTITUTION UNDERTAKING A STUDY ARE DATA FROM AN INTERNAL SOURCE.
- WHEN ARCHIVAL DATA ARE AVAILABLE IN SOME FORM IN VARIOUS RECORDS KEPT BY THE INSTITUTION OR AGENCY UNDERTAKING THE STUDY, THE DATA ARE SAID TO BE FROM AN *INTERNAL SOURCE*.
- A METEOROLOGIST EMPLOYED BY A WEATHER FORECASTING SERVICE NORMALLY HAS MANY KEY VARIABLES SUCH AS AIR PRESSURE, TEMPERATURE, AND WIND VELOCITY FROM A LARGE ARRAY OF COMPUTER FILES THAT ARE AUGMENTED HOURLY, DAILY.

EXTERNAL DATA

- DATA OBTAINED FROM AN ORGANIZATION EXTERNAL TO THE INSTITUTION UNDERTAKING THE STUDY ARE DATA FROM AN EXTERNAL SOURCE.
- DETAILED KNOWLEDGE OF THE DATA SOURCE

PRIMARY AND SECONDARY EXTERNAL DATA

PRIMARY DATA

- PRIMARY DATA ARE OBTAINED FROM THE ORGANIZATION OR INSTITUTION THAT ORIGINALLY COLLECTED THE INFORMATION.
- ALWAYS USE THE PRIMARY SOURCE

SECONDARY DATA

- SECONDARY DATA ARE DATA OBTAINED FROM A SOURCE OTHER THAN THE PRIMARY DATA SOURCE.
- MAY CONTAIN DATA ALTERED BY RECORDING OR EDITING ERRORS, SELECTIVE DATA OMISSION, ROUNDING, AGGREGATION, QUESTIONABLE MERGING OF DATASETS FROM DIFFERENT SOURCES, OR VARIOUS *AD HOC* CORRECTIONS
- NEVER USE AN ENCYCLOPAEDIA TO GET A LIST OF THE **10 LARGEST CITIES** IN INDIA; USE THE NATIONAL CENSUS

METADATA

METADATA

- METADATA PROVIDE INFORMATION ABOUT DATA, INCLUDING THE PROCESSES USED TO CREATE, CLEAN, CHECK, AND PRODUCE IT. THEY CAN BE PRESENTED IN THE FORM OF A SINGLE OR MULTIPLE SET OF DOCUMENTS AND/OR DATABASES, AND THEY CAN BE MADE AVAILABLE IN PRINTED FORM OR THROUGH THE WEB.
- “DATA ABOUT DATA” PROVIDE INFORMATION ABOUT THE CONTENT, QUALITY, TYPE, DATES OF CREATION, AND USAGE OF THE DATA. METADATA ARE USEFUL FOR ANY INFORMATION SOURCE INCLUDING PICTURES OR VIDEOS, WEB PAGES, ARTIFACTS IN A MUSEUM, AND OF COURSE STATISTICAL DATA.
- EX. AN IMAGE: DETAILS ABOUT THE EXACT LOCATION WHERE IT WAS TAKEN, THE DATE IT WAS TAKEN, WHO TOOK THE PICTURE, DETAILED PHYSICAL CHARACTERISTICS OF THE RECORDING CAMERA SUCH AS THE LENS USED, AND ANY POSTPRODUCTION MODIFICATIONS SUCH AS BRIGHTNESS AND TONING APPLIED
- THE GOAL OF PROVIDING METADATA IS TO FACILITATE THE USE AND UNDERSTANDING OF DATA.

A METADATA DOCUMENT INCLUDES SEVERAL COMMON COMPONENTS

1. *DATA DEFINITIONS.* THIS COMPONENT INCLUDES THE CONTENT, SCOPE, AND PURPOSE OF THE DATA.
2. *METHOD OF SAMPLING*
3. *DATA QUALITY. ACCURACY, PRECISION, AND VALIDITY*
4. *DATA DISSEMINATION AND LEGAL ISSUES*
5. *LISTS OF STUDIES BASED ON THE DATA.* INTERNAL REPORTS, ACADEMIC JOURNAL ARTICLES, RESEARCH MONOGRAPHS, OR OTHER PUBLISHED DOCUMENTS
6. *GEOGRAPHIC DATA*
7. *TRAINING*

NATURE OF DATA AT PRESENT

- AS DATA BECOME INCREASINGLY DISTRIBUTED USING WEB-BASED DISSEMINATION TOOLS, SOFTWARE TOOLS THAT DOCUMENT METADATA FOR STATISTICAL DATA WILL BECOME INCREASINGLY IMPORTANT.
- AS THIS TREND CONTINUES, USERS WILL BE ABLE TO UNDERTAKE STATISTICAL ANALYSIS OF DATA WITH A BETTER UNDERSTANDING OF THE STRENGTHS AND WEAKNESS OF THE DATA ITSELF.

SOURCES OF GEOGRAPHICAL DATA

- *FIELD OBSERVATION, MEASUREMENT AND SURVEY*
- *QUESTIONNAIRE SURVEYS*
- *ADMINISTRATIVE RECORDS AND DOCUMENTS*
- *INTERVIEWING, FOCUS GROUPS AND AUDIO RECORDING*
- *REMOTELY SENSED COLLECTION METHODS*
- *SATELLITE IMAGERY*
- *AERIAL PHOTOGRAPHY*
- *EXPERIMENTAL AND SYNTHETIC DATA*

Practical Statistics for Geographers and Earth Scientists

Nigel Walford

 **WILEY-BLACKWELL**
A John Wiley & Sons, Ltd., Publication

REFERENCES:

1. BURT, JAMES E. ELEMENTARY STATISTICS FOR GEOGRAPHERS
2. WALFORD, NIGEL. PRACTICAL STATISTICS FOR GEOGRAPHERS AND EARTH SCIENTISTS_CHAPTER III

