

RM LECTURE 12

Dr. Iqra Safder
Information Technology University

RESEARCH AND RESEARCH METHODS

- Research methods are split broadly into **quantitative** and **qualitative** methods
- Which you choose will depend on
 - your research questions
 - your underlying philosophy of research
 - your preferences and skills



TYPES OF RESEARCH METHODS

Broadly research methods are divided into two categories:

- **Qualitative Approach**: Reality is socially constructed. Emphasis is on language to most closely reflect participants perspectives. i.e. Systematic LR (defined query), Mapping study (broader query)
- **Quantitative Approach**: Phenomena should be studied objectively. Single true reality, or reality within known probabilities, emphasized through the use of numbers.

QUALITATIVE RESEARCH

Qualitative research is an inquiry approach useful for exploring and understanding a central phenomenon. To learn about this phenomenon, the inquirer asks participants broad, general questions, collects the detailed views of participants in the form of words or images, and analyzes the information for description and themes. From this data, the researcher interprets the meaning of the information drawing on personal reflections and past research. The structure of the final report is flexible, and it displays the researcher's biases and thoughts.



QUALITATIVE RESEARCH

Qualitative research is a method that collects data using conversational methods, usually open-ended questions. The responses collected are essentially non-numerical. This method helps a researcher understand what participants think and why they think in a particular way.

Types of qualitative methods include:

- One-to-one Interview
- Focus Groups
- Ethnographic studies
- Text Analysis
- Case Study



Case study:

Deep study of a single or few programs, events, activities or groups in natural context with perspective of the participant.

**Phenomenology: or
Narrative Research:**

the description of meaning of an experience.

**Qualitative
Designs**

Ethnography:

the description of the beliefs and practices of a cultural group or system

Grounded Theory:

Explore common experiences of individuals to develop a theory

QUANTITATIVE RESEARCH

Quantitative research is an inquiry approach useful for describing trends and explaining the relationship among variables found in the literature. To conduct this inquiry, the investigator specifies narrow questions, locates or develops instruments using statistics. From the results of these analyzes, the researcher interprets the data using prior predictions and research studies. The final report, presented in standard format, display researcher objectivity and lack of bias.



QUANTITATIVE DESIGN

Two major categories

- **Experimental**

The investigation of causal effects through direct manipulation of an independent variable and control of extraneous variables

- **Non-experimental**

The investigation of the current state of a variable or the relationships, other than causal, between variables

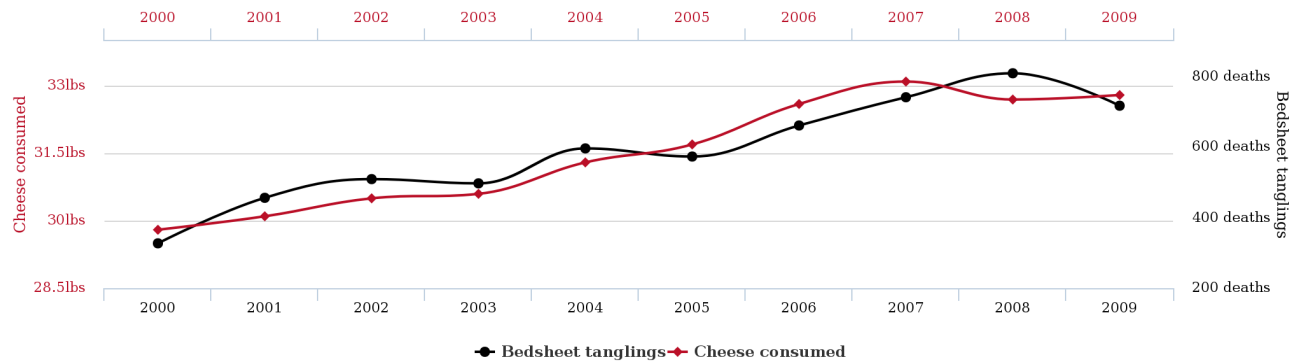


EXAMPLE CORRELATIONS

Per capita cheese consumption

correlates with

Number of people who died by becoming tangled in their bedsheets



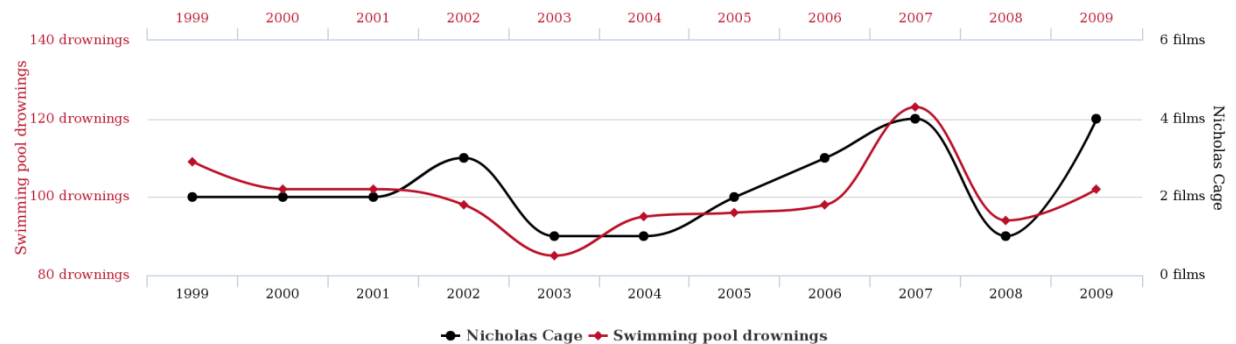
tylervigen.com

From 'Spurious
correlations' website
<http://www.tylervigen.com/spurious-correlations>

Number of people who drowned by falling into a pool

correlates with

Films Nicolas Cage appeared in



tylervigen.com

QUANTITATIVE RESEARCH

- Always good to group and/or visualise the data initially → outliers/cleaning data
- What average are you looking for?
Mean, median or mode?
- Spread of data:
 - skewness/distribution
 - range, variance and standard deviation



MIXED METHOD DESIGNS

- The use of quantitative and qualitative designs and methods within a single study.
- Allows the researcher to better match the approach for gathering and analyzing data to answer the research questions.
- Relative emphasis given to any particular method varies widely.

