Week 1

Intro to Quantitative Research

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School of Journalism
Informatics Institute
University of Missouri

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Agenda

1. Introductions
2. Go over **syllabus**
3. Talk about **IRB certification**
4. Characteristics of **scientific research**
5. Projects for **mass media research**
6. Preview of **statistics**

Outline

Syllabus

IRB

Scientific research

Mass media research topics

Statistics

Instructor

- Mike Kearney, PhD
- Office: 314 Lee Hills Hall
- Hours: By appointment
- Email: kearneymw@missouri.edu
- Phone: (573) 884-0424

Texts

- Wimmer, R.D., & Dominick, J.R. (2011). *Mass media research: An introduction* (9th Ed.). Belmont, CA: Wadsworth.
- Grolemund, G. & Wickham, H. (2017). *R for Data Science*, First Edition. http://r4ds.had.co.nz/
- You should also stay abreast of research in your interest area by reading appropriate scholarly and professional journals

Requirements

- Weekly readings
- Methods course survey (due today)
- IRB certification (see: next slide)
- Homework assignments (R stats)
- Two exams
- Final paper (proposal)

Research paper

- The final paper is a research proposal
- It must include a **brief** summary of pertinent literature, identification of applicable theories, and a clear statement of the value of the study
- However, the primary emphasis will be on research design, methods, and plan of data analyses.

Research paper cont'd

- Topic is chosen by you, in consultation with me.
- Research question for your research paper (proposal) is due on the 6th week of class.
- Presentations a week before the last week of classes
- Final paper is due the last week of class

Grades

The following is a percentage breakdown of the grades in this course:

Assignment	Percent
Exam #1	25%
Exam #2	25%
Research paper	25%
Homework assignments	25%
Total	**100%**

Grading scale

This course uses a plus/minus grading scale.

Percent	Grade
93.4 - 100	A
90.0 - 93.3	A-
86.7 - 89.9	B+
83.4 - 86.6	B
80.0 - 83.3	B-
76.7 - 79.9	C+
73.4 - 76.6	C
70.0 - 73.3	C-
00.0 - 69.9	F

Final note on grades

- Percentages are exact
- I do not offer extra credit or give incompletes.
- If you have any questions or concerns about an assignment it is best to ask them before the assigned due date
- Late work is penalized by 10% [of the original assigned value] per 24 hours until it is submitted or ceases to be.

Schedule

Week	Date	Topic	W&D	G&W	Due
1	1/16	Intro to quant research	1,3		
2	1/23	Operationalization	2,4		
3	1/30	Survey research	3		
4	2/06	Experimental research	9		
5	2/13	Content/text analysis	6		
6	2/20	Intro to #rstats		1,4,6,8	RQ
7	2/27	Descriptive statistics	10	3,5,7	HW1
8	3/06	Chisquare and t-test	11,12		HW2
9	3/13	**Exam #1**			

Schedule cont'd

Week	Date	Topic	W&D	G&W	Due
10	3/20	Correlation and factors	12		HW3
11	3/27	**SPRING BREAK**			
12	4/03	General linear model		22-25	HW4
13	4/10	Advanced models	8		HW5
14	4/17	**Exam #2**			
15	4/24	Presentations			
16	5/01	**WORK DAY**			Paper

W&D = Wimmer, R.D., & Dominick, J.R. (2011). *Mass media research: An introduction* (9th Ed.).

G&W = Grolemund, G. & Wickham, H. (2017). *R for Data Science*, First Edition.
http://r4ds.had.co.nz/

Outline

Institutional Review Board

- The first assignment in this course is to acquire IRB certification
- Mizzou IRB website: https://research.missouri.edu/irb/

INSTITUTIONAL REVIEW BOARD

IRB Home
First Time Users
Researcher Resources
Meeting Dates/Deadlines
IRB Contacts
Participant Outreach
IRB News/Updates
eCompliance Login
CITI IRB Training

IRB Home

The mission of the Institutional Review Board is to protect persons participating in research. The IRB maintains this focus through processes and training to assist faculty, students and staff to develop a successful project wherein the benefits outweigh the risks to participants. Thorough and recurring review of research studies is performed to ensure the integrity of human subject protection. We strive to advance research in the community that is fair and ethical according to applicable regulations.

- Assurance Information
- Assurance Letter
- 21 CFR 11 Institutional Statement
- IRB Registration Information
- Part 11 Compliance

Upcoming Events

Campus IRB Events

Events Calendar Under Maintenance

Contact Information

MU Institutional Review Boards:
Office of Research
University of Missouri
Columbia, MO 65212

Health Sciences IRB (Google Map)
190 Galena Hall DC 074
Campus IRB (Google Map)
482 McReynolds Hall

Phone: 573-882-3181
Fax: 573-884-4401
Contact the IRB

IRB training

- To complete your training, login to ecompliance:
  https://ecompliance.missouri.edu/
- Click "Institutional Review Board"
- Under 'Prequisites' select "Take IRB training"
- Follow instructions (this may take multiple hours)
- Print out certification

Outline

Syllabus

IRB

Scientific research

Mass media research topics

Statistics

Research

- The text book defines **research** as

an attempt to discover something.- Wimmer & Dominick, 2011, p. 2

Scientific research

- The text book defines **scientific research** as

  Scientific research is an organized, objective, controlled, qualitative or quantitative empirical analysis of one or more variables.- Wimmer & Dominick, 2011, p. 9

Methods of knowing

Four approaches to knowing: tenacity, intuition, authority, and science

- **Tenacity** - true because it always has been
- **Intuition** - true because it is self evidence
- **Authority** - true because qualified source says so
- **Scientific** - true because studies provisionally support it

Characteristics of the scientific method

Wimmer and Dominick describe the following five characteristics of the scientific method:

1. Scientific research is **public**
2. Science is **objective**
3. Science is **empirical**
4. Science is **systematic** and **cumulative**
5. Science is **predictive**

Characteristics of the scientific method

Here's another list of five characteristics from sciencing.com

1. Scientific research is **empirical**
2. Scientific research is **replicable**
3. Scientific research is **provisional**
4. Scientific research is **objective**
5. Scientific research is **systematic**

Theory

- The text book defines **theory** as

  a set of related propositions that presents a systematic view of phenomena by specifying relationships among concepts.- Wimmer & Dominick, 2011, p. 13

Measurements of objectivity

- **Validity** refers to **accuracy** of findings
- **Reliability** refers to **consistency** of findings

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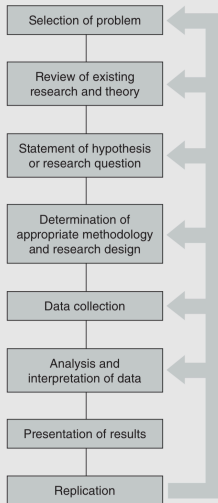## Mass media research topics

Statistics

Mass media

- The text book defines **mass media** as

  any form of communication that simultaneously reaches a large number of people, including but not limited to radio, TV, newspapers, magazines, billboards, films, recordings, books, and the Internet.- Wimmer & Dominick, 2011, p. 2

Research process

Figure 1.2 Steps in the Development of a Research Project

- Selection of problem
- Review of existing research and theory
- Statement of hypothesis or research question
- Determination of appropriate methodology and research design
- Data collection
- Analysis and interpretation of data
- Presentation of results
- Replication

Figure 2

Missouri School of Journalism
University of Missouri

Data Science & Analytics
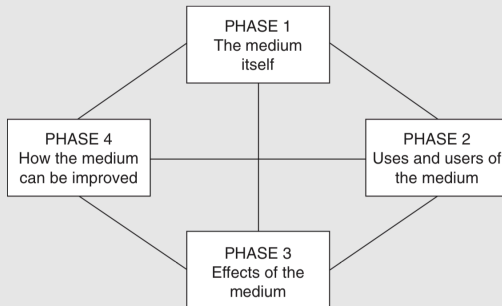University of Missouri

Research phases

Figure 3

Outline

Syllabus

IRB

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Statistics

Statistics we will cover

- Sampling/probability
- Descriptive statistics
- Inferential statistics
- Correlation/regression
- t-test/ANOVA
- Overview of advanced methods

Sampling

- What does the word **random** mean? Describe it using mathematical terms.

Table of Contents