

# EVST 399: Midterm Exam Study Guide

The midterm exam will have three parts.

- Part I will be based on the Basic Research Design book and will test your ability to apply the six tasks identified there to design concrete research. (We will focus on tasks 1 through 4, though you should know something about the other two.) There will typically be several possible research designs. You just need to make yours plausible.
- Parts II & III will be based on the statistical analyses we encountered in Thinking Through Statistics. The exam will focus on how to set up problems and how to interpret results.

Here are some sample questions, most of them with suggested answers. The real questions will focus on environmental issues rather than on sociological ones.

## **PART I:**

1. The University of Redlands is supposedly dedicated to sustainably living in our suburban environment. Students, faculty, staff, and administrators, however, waste a tremendous amount of paper, glass, metal, and (especially) energy. Design a research project to answer ONE of the following:
  - a. How much of what kinds of things do members of the U of R community waste? How does this vary across the four categories (S, F, S, & A) noted above?
  - b. Why do members of ONE of these categories waste what they do? What do they think might encourage them to be less wasteful?
  - c. Which solutions would be most popular to the largest number of people? Which solutions would be the most popular to members of each of the four categories?
    - *NOTE: Your first task is to identify the type of data for which each of these questions calls. Then you can refine the research question to focus on that data type, and can choose an appropriate research method to gather this data.*
2. The Church of the Flying Spaghetti Monster (aka "Pastafarianism") is a fast-growing religious group now recognized by several nations. (This is not a joke.) Design a research project to discover what leads people to join this religious movement.
  - *We want to capture people's self-reported actions and we want to do so in some depth. Thus we would interview recent converts to learn why they joined the movement.*
3. The California Department of Transportation has proposed building a new freeway up Mill Creek, to connect the Los Angeles Basin with Twenty-Nine Palms on the north side of Joshua Tree National Park. Do ONE of the following:
  - a. Design a research project to gauge the potential environmental effects of this project. Be sure to count potential benefits as well as potential problems.
    - *What type of data are we seeking? We cannot observe future behaviors and*

*events, but we can observe present and past ones, to gauge the extent to which the possible outcomes of this project are the same as or different from similar projects that have gone before.*

- b. Design a research project to gauge the potential social effects of the project – both positive and negative.
  - *This is a bit harder: we can't just compare this project to others. Instead, we have to investigate how people will respond to the new transportation opportunity, but also how they will respond to the loss of habitat, mountain isolation, and so on. People can predict their futures in a way that animals and rocks cannot. What types of data will we have to gather to learn what we need to learn?*
4. Periodically, Americans suffer mass worries about particular social phenomena. The last 30 years have seen worries about a "drug scourge", the supposed "brainwashing" of youth by borderline religious groups, "illegal immigration" across the Mexican border, and various kinds of environmental catastrophe. What do these mass worries have in common? How are they similar to or different from the mass worries found earlier in America's history?
  - *These worries are all lodged in public discourse; that is thus their data type. Discourse is best studied by discourse analysis. This can best be accomplished by examining public texts (or narratives) about such 'problems'.*
5. Many Native American peoples have very different attitudes toward the natural environment than do Whites. This varies by group, however, and it also varies within groups. Most Native communities house a variety of opinions about nature, the environment, and so on – including about environmental preservation. Imagine that you have been asked to summarize Native attitudes toward a proposed new coal-fired power plant in the Four Corners region (where Arizona, New Mexico, Colorado, and Utah all meet). How would you go about doing so?
  - *This is really a two-level project. First, you have to learn what the range of opinions are; then you need to gauge how widespread each opinion is. The second calls for a well-designed survey, but the first calls for either a set of in-depth interviews with a wide range of people or a set of focus groups with experts who know the variety of ways that local Native people think about such things.*

## **PART II:**

### **A: Survey Research (using cross-tabulations or t-tests/ANOVAs)**

Using the following list of variables [to be provided], which you would use as dependent, independent, and (if needed) control variables to answer the following research questions. (If there is more than one combination that will answer the question, note the two best ones.) Tell how you would know whether to answer the questions "yes" or "no" and – if "yes" – how you would know which way the effect runs?

1. Do people's religious identities have any effect on their beliefs about global warming?

2. Do people's political allegiances have any effect on the amount they trust environmental scientists?
3. Do men and women have different attitudes toward recycling?
4. Do men and women recycle differently?
5. Does political allegiance have a different effect on attitudes toward global warming among men than among women?
6. Does people's race have any effect on people's attitudes toward spending money on the National Parks?
7. Does race affect men's and women's attitudes toward possible sea level rise differently?
8. Do people who disbelieve in global warming also think that market-based solutions are the best way to solve environmental problems?
9. Does #8 differ for men and women?
10. Does people's belief in the severity of environmental problems affect their willingness to tax themselves to solve those problems?

**B: Aggregate Research (using area-based or organization-based data)**

Using the following list of variables [to be provided], describe how you would answer the following research questions. If you use regression, which would be your independent and which your dependent variables, and why? If you use correlation or regression, how would you determine whether the connection you see is significant?

*For the U.S. as a whole:*

1. Which regions of the U.S. have the most problems with pollution, per capita? Which have the least?
2. Which regions of the U.S. have the greatest health problems? Which have the least?
3. Is there a connection between the presence of major health problems and the degree of environmental pollution?
4. Is there a connection between the presence of major health problems and the level of poverty?
5. Which of these two factors – the level of pollution and the level of poverty – more greatly influences the presence of major health problems across the 50 U.S. states?

*For the various counties of California:*

6. Which parts of California have the most urban sprawl? Which regions have the least?
7. Which parts of California have the most productive farmland, by percentage? Which have the least productive?
8. Is there a connection between the percentage of land devoted to suburbs and local crime rates? If yes, which crimes?

**PART III:**

This section will be multiple choice. I'll give you a table, then you'll choose which of the statements following it are true. E.g.:

	Political Party		
	Democrat	Independent	Republican
Tax gas to reduce fuel use Yes	45%	35%	25%
No	55%	65%	75%
(total)	100%	100%	100%

*Prob > 99.9%; p < 0.001*

CHECK ALL OF THE FOLLOWING THAT ARE TRUE

- The probability is over 95%, so the results are accurate.
- There is not enough data for us to say anything about the relationship between these variables.
- Democrats are significantly more likely than Republicans to favor gas taxes to reduce fuel use.
- Most people don't favor increasing taxes to reduce fuel use.
- Men are more likely than women to favor gas taxes to reduce fuel use.
- The differences we see between the columns reflect a real difference in the American population.

	Political Party		
	Democrat	Independent	Republican
Tax gas to reduce fuel use Yes	35%	33%	30%
No	65%	67%	70%
(total)	100%	100%	100%

*Prob = 50-74%; p > 0.25*

CHECK ALL OF THE FOLLOWING THAT ARE TRUE

- The probability is so low that we can't draw any conclusions from this table.
- Democrats are significantly more likely than Republicans to favor gas taxes to reduce fuel use.
- Most people don't favor increasing taxes to reduce fuel use.
- Men are more likely than women to favor gas taxes to reduce fuel use.
- The differences we see between the columns reflect a real difference in the American population.