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11.220 Quantitative Reasoning & Statistical Methods for Planners I
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Quantitative Reasoning and Statistical Methods (11.220)

Written Assignment #2: Critical Reading of Research Results

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Due: 4/24/09

1 The Assignment

For this assignment you are asked to read a journal article reporting the results of a quantitative study on a planning, design, or policy topic. In a short essay you will be asked to summarize and critique the paper, and to pose questions, challenges, and recommendations for further inquiry.

1.1 The Articles

Please choose *one* of the following articles to read and critique. Note that you may want to look at them *all* before you pick—and don't feel you need to choose one that reflects your program group or area of expertise; there are important lessons you can learn from *all* of these.

Support for Sustainability “Taking Sustainable Cities Seriously: a comparative analysis of twenty-four US cities”, Portney, 2002

Economic Freedom and Prosperity “Executive Summary” and “Chapter 4: Methodology”, *2009 Index of Economic Freedom*, Center for International Trade and Economics, 2009

Urban Form and Quality of Life “A Tale of Two Cities: Physical Form and Neighborhood Satisfaction in Metropolitan Portland and Charlotte”, Yang, 2008

Sports and Economic Development “The Impact of Stadium and Professional Sports on Metropolitan Area Development”, Baade and Dye, 1990

Housing and Economic Development “Recipe for Growth”, Moscovitch, 2008

1.2 Things to think about

Although there is not set format required for this paper, you should be sure to address the following questions:¹

- What is the research hypothesis being explained?
- How does the author set his or her work in the context of other studies?
- What concepts does the author want to explore/understand? How are they *operationalized* and measured?
- What data is the study based on? How was it collected and/or modified? What controls are in place to eliminate “noise” and “bias”? What limitations does the author admit?
- What is the argument being put forth? (Remember the idea of looking for a logical flowchart to an argument.)
- How was the regression model developed, what was included, and what was left out? What else might you want to include if you had the option of working with the author?
- How well are the results presented? How well are they interpreted? Do you agree with the author’s analysis of the all the relevant statistics?
- How well a case does the author make for a *causal* relationship, and not simply a *statistical correlation*. Can you draw a causal diagram of the sort you find in *The Logic of Causal Order*?
- What are the strongest statements the author can make about the results of his or her study? What are the weakest spots in his or her argument?
- How might you (or someone else) use, or be tempted to use, these results? What are the implications of this research? How generalizable are they for other settings or time periods?

1.3 A warning

Warning: In approaching this assignment, you should not assume that just because these papers are published that they are models of scientific and statistical excellence. At the same time, neither should you assume that the assignment is to find every minor or potential flaw. What we are looking for is an honest appraisal of the arguments and the evidence presented.

¹This is an understandably long list, but we thought that more guidance would be better than less; you do not need to include a separate section for each of these questions, but your thinking on all of them should inform your paper.

1.4 Boring details

The paper should be as long as you need it to be, but 5–6 pages is a good guide. The paper is due no later than 4:00 PM on Friday, April 24, 2009 (though it might be nice to pass it in directly to your TA at your weekly section meeting).

2 Resources

In addition to the discussions we've had in class, you will obviously want to pay special attention to the readings on regression: notably chapters 16-21 in Meier et al. (2009), chapter 13 in Horwitz and Ferleger (1980), and the entirety of *Understanding Multivariate Research* (Berry and Sanders, 2000), which provides a very good road-map to critiquing regression results.

Beyond these, however, we expect you to think more broadly about the logic and scientific arguments presented: this is not merely an exercise in interpreting β -coefficients and levels of statistical significance.

No other outside reading is specifically required, but it would be great if you delved in deeply enough to see how this paper fits into a broader scientific debate. If there are particular data sources or indices that are used but not fully explained in the article, you may want to investigate them a bit as well.

References

- Robert A. Baade and Richard F. Dye. The impact of stadium and professional sports on metropolitan area development. *Growth and Change*, 21(2):1–14, 1990. doi: 10.1111/j.1468-2257.1990.tb00513.x. URL <http://dx.doi.org/10.1111/j.1468-2257.1990.tb00513.x>.
- William D. Berry and Mitchell S. Sanders. *Understanding Multivariate Research: a primer for beginning social scientists*. Westview, 2000.
- Center for International Trade and Economics. 2009 Index of economic freedom. Technical report, Heritage Foundation, 2009. <http://www.heritage.org/Index/>.
- Lucy Horwitz and Lou Ferleger. *Statistics for Social Change*. South End Press, 1980. Required.
- Kenneth J. Meier, Jeffrey L. Brudney, and John Bohte. *Applied Statistics for Public and Nonprofit Administration*. Thomson Wadsworth, 7th edition, 2009. Required.
- Edward Moscovitch. Recipe for growth. Technical report, Massachusetts Housing Partnership, 2008. http://www.mhp.net/vision/news.php?page_function=detail&mhp_news_id=250.
- K. E. Portney. Taking sustainable cities seriously: a comparative analysis of twenty-four us cities. *Local Environment*, 7(4):363–380, 2002.

Yizhao Yang. A tale of two cities: Physical form and neighborhood satisfaction in metropolitan Portland and Charlotte. *Journal of the American Planning Association*, 74(3):307–323, 2008.