USP 597: Regional Economic Analysis

Jamaal Green

Spring 2020

E-mail: jamgreen@pdx.edu   Web: TBD

Office Hours: TBD   Class Hours: Mondays 6:40-8:30 p.m.

Office: TBD   Class Room: CUPA 225/TBD

Course Description

This course offers students an opportunity to learn about and apply tools for analyzing regional economies, as well as, becoming better analysts by applying the skills of data science workflows. The course will combine video lecture, demonstration, on-line lab, and targeted assignments to assist students learning about data concepts, applying available regional data tools, developing regional economic data products, and organizing data projects to maximize their portability and reproducability.

Recognizing the extraordinary narture of the term with the onset of global pandemic. This syllabus should be seen as aspirational and students should recognize that the course and its topics are in a fluid situation, but I will attempt to offer as good a course as I can make it.

Objectives

This two-credit course builds on MURP core courses, especially Planning Methods II (USP 535), and will complement other courses in the MURP economic development pathway (USP 572, Regional economic development, USP 517, Economic development policy, and USP 578, Impact Assessment), by providing students skills important to economic development practitioners and researchers. It is also appropriate for students in other degree programs (eg, MUS, MRED, MPP) or graduate certificate programs (eg, Applied Demography) looking for a focused discussion of regional analysis methods and tools.

There are no course prerequisites, although students are strongly encouraged to have completed a basic or applied statistics course, such as USP 535 (Planning Methods I). It is also quite helpful to have some basic excel skills. In addition to excel, students should have some experience with the statistical programming language, R, or some other scripting language (eg Python). While it is possible to complete this course using only excel, being able to take advantage of scripting will make some projects easier and help with overall project management. For students who do not have experience with R, a subscription to DataCamp will be provided through the course if enrollment exceeds 10 students. Again, experience with R *is not* required for the successful completion of this course, but will make certain assignments significantly easier.

This course will focus on analyzing a regional economy in the context of the ongoing COVID epidemic. While this is not an epidemiology course, it is clear that this outbreak is currently

impacting, and will continue, to impact local/regional economies into the future. The basic questions of economic development planning and regional analysis still apply. What are our region's strengths and vulnerabilities? Holding this in mind, we shall make use of regional economic and census data, but our questions will be centered on analyzing regional economies in the context of COVID.

Students will choose a regional economy that they will analyze over the course of the quarter. Each week will build on the previous week by providing students additional data sources and tools for adding an additional layer of understanding of the regional economy. They will also build data manipulation, management and visualization skills using excel or R.

Learning Outcomes

At the completion of the term, students should be able to:

- Locate, analyze, and interpret important sources and concepts of demographic and economic data;

- Apply tools of demographic and economic analysis, including population pyramids, location quotients, shift share analysis, and cluster analysis;

- Understand and apply methodologies for conducting Economic Opportunity Analysis as prescribed by the Oregon Statewide Land Use Program.

- Apply good data project management and visualization practices.

Requirements

Required Texts and Readings:

There is no required text. I will provide worksheets and information via the course website. However, there are several good sources of basic information regarding data sources, methods and programming guidance. I recommend the following:

General Reference

> Quinterno, John. 2014. *Running the Numbers: A Practical Guide to Regional Economic and Social Analysis*. Armonk, NY: M.E. Sharpe.

> Wickham, Hadley and Grolemund, Garret. 2017. *R For Data Science*. O'Reilly Media. book website: R4DS

Data Visualization and Analysis

> Schwabish, Jonathan. 2016. *Better Presentations: A Guide for Scholars, Researchers, and Wonks*. New York: Columbia University Press.

> Healy, Kieran. 2018. *Data Visualization: A practical introduction.*https://socviz.co/

Method of Evaluation

- Each week, students will complete an assignment that applies the data tools and concepts to their selected region. Students will be graded on each assignment, worth 10 points each.

- The final ten percent will be based on participation in online conversation forums regarding the material and the assignments, for a total of 100 points as a course grade (see below).

- Late Submission Policy: Each weekly assignment will be due via email at 11:59 pm on Sunday of the relevant week. For each hour after the deadline, a 0.1 point deduction (from the 10 point total) will be applied, up to a maximum deduction of 5 points. There is no final exam.

- Grading Policy: It is my intention to run this course as a pass/fail for all students. If you have the option in your registration, please signal that, if not, I will try to convert everyone on my end. If there is significant disagreement from the class on this we can move into a grade-letter grading format.

Office Hours

office hours are not currently set as the class will need to be held online. This is something that we will discuss as a class.

Lab Session

There is no lab session for this course, as of yet.

Course Overview

Week 1, 04/01-04/05 Introduction

- Broad overview of data sources (i.e. BLS, Census, BEA, state LMI agencies) and data concpets that are important to doing regional economic analysis

- We will also discuss grading and class dynamics given our unique situation

ASSIGNMENT DUE APRIL 6- Choose Metro Area for Analysis

Week 2, 04/08-04/12 Regional Demographic Analysis

- Review of basic demographic concepts (introduced in USP 535): natural increase, net migration, race and ethnicity, fertility and mortality, families and households etc

- Apply demographic analysis tools in relation to economic development, such as population pyramids and projects, and migration analyis.

- Reccomended reading
    - Wilson et al. 2017. *Good Enough Practices in Scientific Computing*. PLoS Comput Biol 13(6): e1005510.https://doi.org/10.1371/journal.pcbi.1005510
    - Broman, Karl W. and Woo, Kara H. 2018. *Data Organization in Spreadsheets*. The American Statistician. 72(1).DOI: 10.1080/00031305.2017.1375989

ASSIGNMENT DUE APRIL 13- Regional Demographic Analysis

Week 3, 04/15-04/19 Analyzing Regional Business Structure

- Review different sources of employment data and their respective pros and cons
- Create a basic industry employment dataset for your regional economy

ASSIGNMENT DUE APRIL 20- Business Structure Analysis

Week 4, 04/22-04/26 Analyzing Regional Economic Change

- Review the methods of economic base theory and shift-share analysis on the industry employment datasets previously developed.
- Review concepts and indicators of industry specialization and diversification.

ASSIGNMENT DUE APRIL 27-Regional Economic Change

Week 5, 04/29-05/03 Labor Market Analysis Part 1

- Review data sources for understanding how to characterize the occupational composition of the regional economy, including educational and training requirements, wages and benefits, and income.
- Develop profile of regional labor market characteristics

ASSIGNMENT DUE MAY 4- Labor Market Analysis 1

Week 6, 05/06-05/10 Labor Market Analysis Part 2

- Review Longitudinal Employer-Household Dynamics Dataset and how it can be used to understand the relationships between where people live and work, as well as, workforce and employer characteristics.
- Learn how to use the Census Bureau's OnTheMap tool.

ASSIGNMENT DUE MAY 11- Labor Market Analysis 2

Week 7, 05/13-05/17 Cluster Analysis

- Review industry cluster definitions and why industry clusters are important to regional economic analysis
- Review process for identifying important industry clusters and their components
- Develop visualizations of clusters that help to clarify agglomerative relationships among companies and industries

ASSIGNMENT DUE MAY 18- Cluster Analysis

Week 8, 05/20-05/24 Exploring Innovation and Entrenpreneurship

- Explore data sources that describe an economy's entrepreneurship outcomes as well as its innovative environment

Reading- Kauffman Indicators of Early-Stage Entrepreneurship

Week 9, 05/27-05/31 Researching Firms and Markets

- Using proprietary databases such as Hoovers, ReferenceUSA and ESRI Business Analyst to identify regionally important establishments

ASSINGMENT DUE June 2- Firm market research

Week 10, 06/03-06/07 Economic Opportunities Analysis

- Understand the requirements for Oregon Statewide Planning Goal 9 and use the data and analyses developed in previous weeks to craft a Goal 9 analysis for your region

ASSINGMENT DUE JUNE 10- Goal 9 Opportunity Analysis

Incomplete Grades

I am very reluctant to assign incomplete grades, and will only do so when circumstances are consistent with PSU's policy. Poor planning is not a valid excuse. If you encounter unforeseen circumstances that meet the conditions outlined below, please let me know as soon as possible so we can come to an agreement about how to resolve the incomplete grade.

The PSU Bulletin States:

A student may be assigned an "I" grade by an instructor when all of the following criteria apply:

- Quality of work in the course up to that point must be C level or above.
- Essential work remains to be done. "Essential" mens that a grade for the course could not be assigned without dorpping one or more grapde points below the level achievable upon completion of the work
- Reasons for assigning an "I" must be acceptable to the instructor. The student does not have the right to demand an "I". The circumstances must be unforeseen or be beyond the control of the student. An instructor is entitled to insist on appropriate medical or other documentation. In no case is an "Incomplete" grade given to enable a student to do additional work to raise a deficient grade.

A written agreement, signed by both the student and the instructor, should include a statement of the remaining work to be done to remove the grade, and the date, not to exceed one year from the end of the term of enrollment for the course, by which work must be completed in order to earn credit toward the degree. The instructor must specify the highest grade which may be awarded upon completion; the grade awarded should not exceed the level of achievement attained during the regular course period.

Plaigarism Policy

Plagiarism will not be tolerated. It is a serious issue and is a violation of the PSU Student Conduct Code For tips on how to recognize and avoid plagiarism, see the resources available from the PSU library.

Equitable and Safe Learning Environment

As an instructor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. We expect a culture of professionalism and mutual respect in our department and class. You may report any incident of discrimination or discriminatory harassment, including sexual harassment, to either the Office of Equity and Compliance or the Office of the Dean of Student Life.

Please be aware that as a faculty member, I have the responsibility to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination. If you would rather

share information about sexual harassment or sexual violence to a confidential employee who does not have this reporting responsibility, you can find a list of those individuals. For more information about Title IX please complete the required student module Creating a Safe Campus in your D2L. # Diversity and Inclusion

PSU values diversity and inclusion; we are committed to fostering mutual respect and full participation for all students. My goal is to create a learning environment that is equitable, useable, inclusive, and welcoming. If any aspects of instruction or course design result in barriers to your inclusion or learning, please notify me. The Disability Resource Center (DRC) provides reasonable accommodations for students who encounter barriers in the learning environment. If you have, or think you may have, a disability that may affect your work in this class and feel you need accommodations, contact the Disability Resource Center to schedule an appointment and initiate a conversation about reasonable accommodations. The DRC is located in 116 Smith Memorial Student Union, 503-725-4150, drc@pdx.edu, https://www.pdx.edu/drc.

- If you already have accommodations, please contact me to make sure that I have received a faculty notification letter and discuss your accommodations.

- Students who need accommodations for tests and quizzes are expected to schedule their tests to overlap with the time the class is taking the test.

- Please be aware that the accessible tables or chairs in the room should remain available for students who find that standard classroom seating is not useable.

- For information about emergency preparedness, please go to the Fire and Life Safety webpage for information