SJSU Undergraduate Research Grants

Average Earnings by College Major: Evidence from the ACS

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Abstract

Using data from the American Census Survey, which samples 1% of US households each year, we first reproduced the results from a study by John Winters which calculated most common majors and average earnings by major among lawyers. We then generalized the R script to enable calculating these statistics for any occupation. The result is a computer program that is easy to modify and which can produce valuable descriptive information for students considering major choice, and other stakeholders.

Project Activities or Findings

- The primary purpose of this project was to create an R script that would be easily extensible, and allow users to explore the average earnings by college major for any occupation.
- The R script would be able to segment a specific occupation – like lawyers, and identify the most popular majors for the specific occupation, as well as the mean earnings for those majors.
- In one extension, we find workers in software development that majored in Computer Science do not earn significantly more than Economics majors
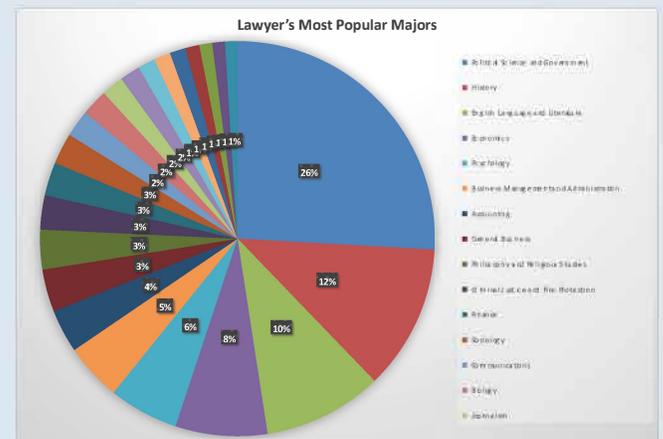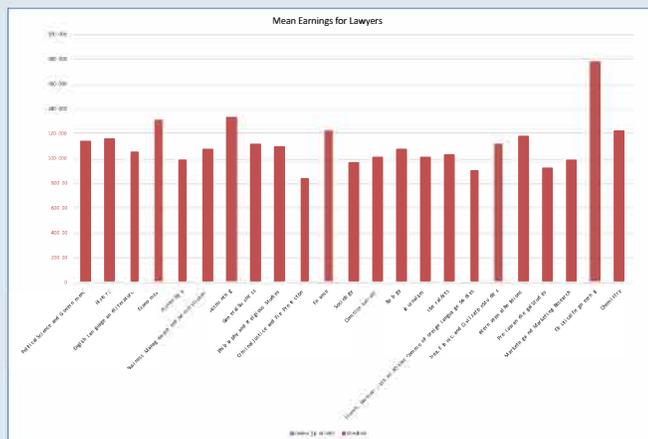

Mean Earnings for Lawyers

Lawyer's Most Popular Majors

Table: Top 20 majors among software developers and average earnings by major

major	rank	% of developers	mean earnings	median earnings
Computer Science	1	29.1	94,075	88,889
Electrical Engineering	2	10.8	101,632	99,665
Computer Engineering	3	8.2	95,116	90,522
Computer and Information Systems	4	4.8	77,352	76,680
Mathematics	5	3.8	101,109	95,049
Business Management and Administration	6	3.0	81,473	77,778
Mechanical Engineering	7	2.6	97,085	95,436
General Engineering	8	2.5	88,590	84,770
Physics	9	2.2	104,223	100,513
Management Information Systems & Statistics	10	2.1	87,078	86,770
General Business	11	1.9	88,970	83,054
Information Sciences	12	1.5	86,075	81,930
Electrical Engineering Technology	13	1.2	92,637	81,796
Economics	14	1.2	93,357	81,214
Accounting	15	1.1	89,068	81,939
Psychology	16	1.0	82,243	81,050
Biology	17	1.0	85,886	86,309
English Language and Literature	18	0.9	77,270	72,664
Civil Engineering	19	0.8	103,391	98,806
Finance	20	0.8	91,382	87,602

References / Data

We use a sample of the American Community Survey from 2006-2017 which contained about 45 million observations. The subsamples of lawyers and software developers contain around 50,000 observations.

The data was obtained from IPUMS at the University of Minnesota: www.ipums-usa.org

The study whose results we reproduced was by John Winters:

Winters, John V. "Is economics a good major for future lawyers? Evidence from earnings data." *The Journal of Economic Education* 47, no. 2 (2016): 187-191.