POLS3316 - Statistics for Political Science Course Introduction: Introductions, Course Policies, Brief Overview

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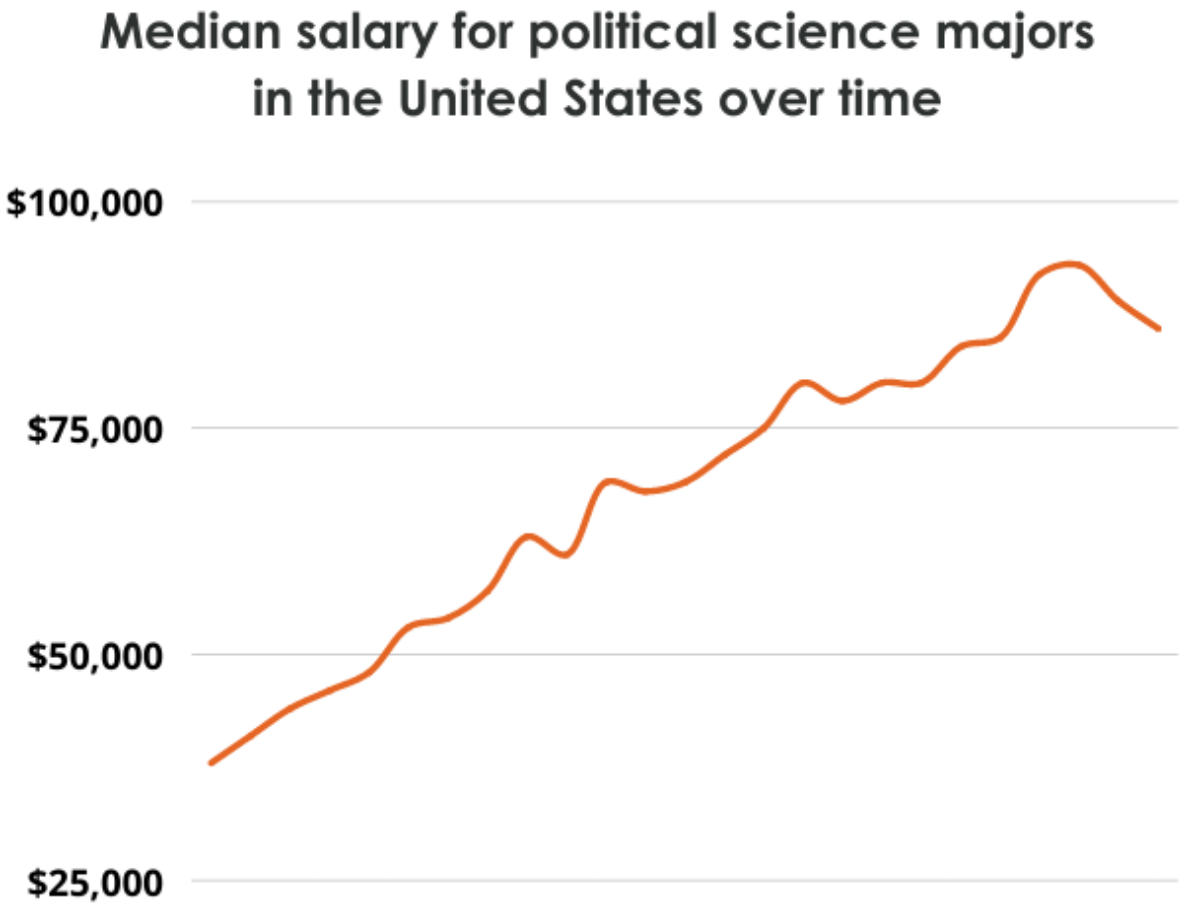
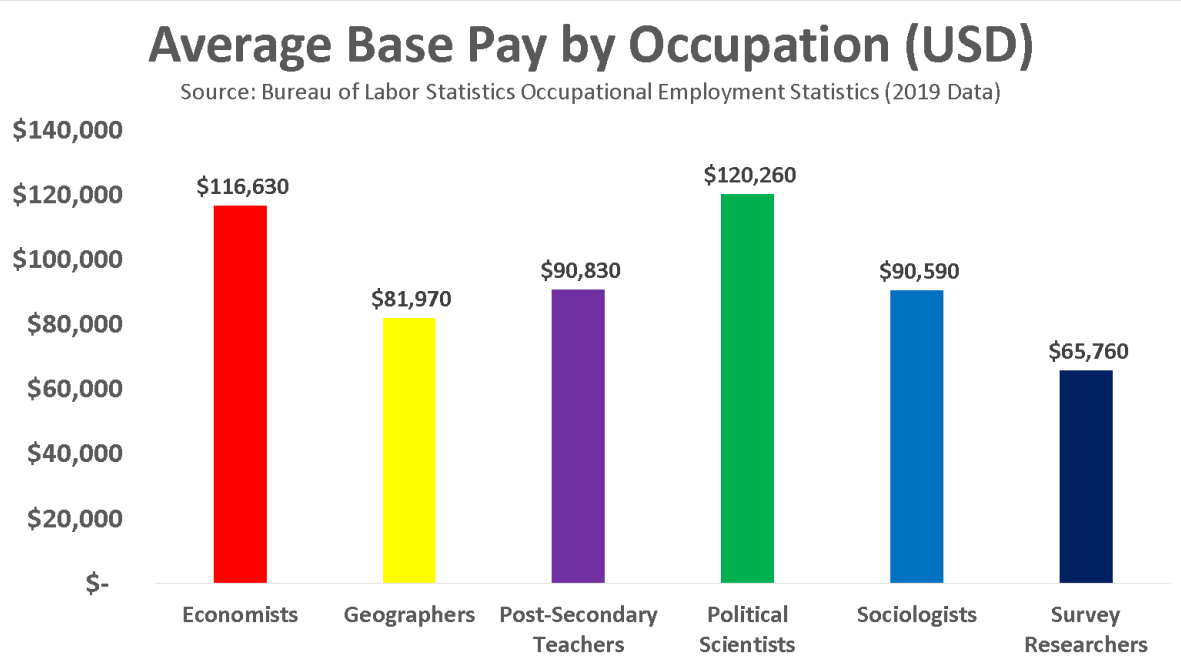
July 7, 2022

Overview

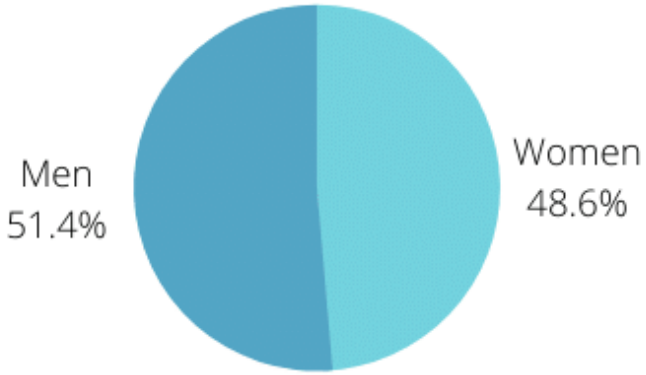
Welcome to Statistics for Political Science



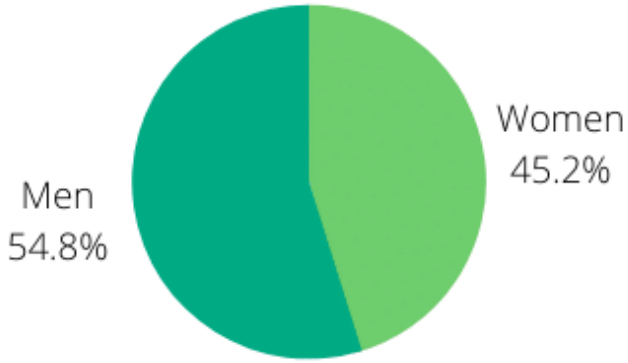


Political Scientists - PhD; Survey Researcher - BS/MS

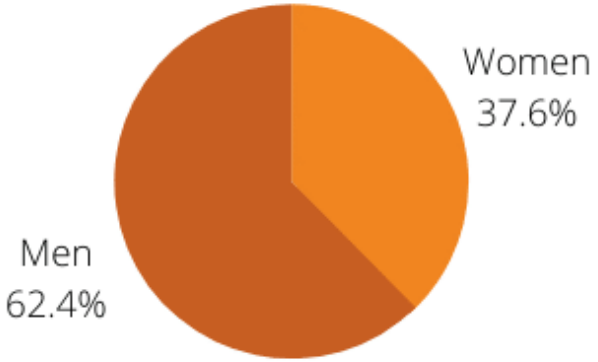
Both require statistics!



Bachelor's degrees
Political Science



Master's degrees
Political Science



Doctoral degrees
Political Science

Introductions!

- Name
- Major/minor
- Why you're taking the class
- A hobby or something that interests you
- Note: When I call on you for the first few days, please remind me of your name

- Course objectives
- Email - Courtesy!
- Course Policies - Professionalism!
- Grading - Total Points vs Required Points
- Problem Sets, Quizzes, Tests, Project
- Software and Tools
- Lectures and Labs
- Course Resources

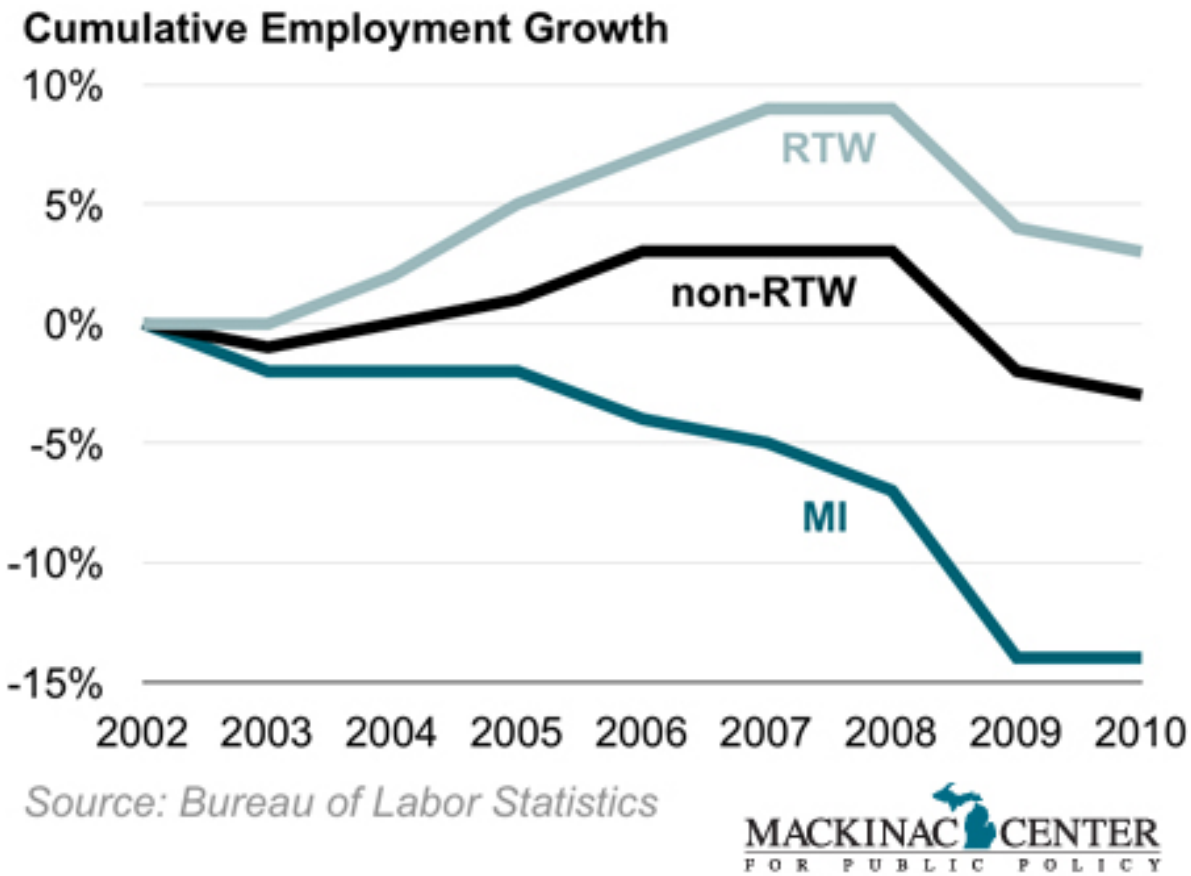
Why do we need statistical tools?

Better than a crystal ball for prediction!

Why do we need statistical tools?

- Prediction

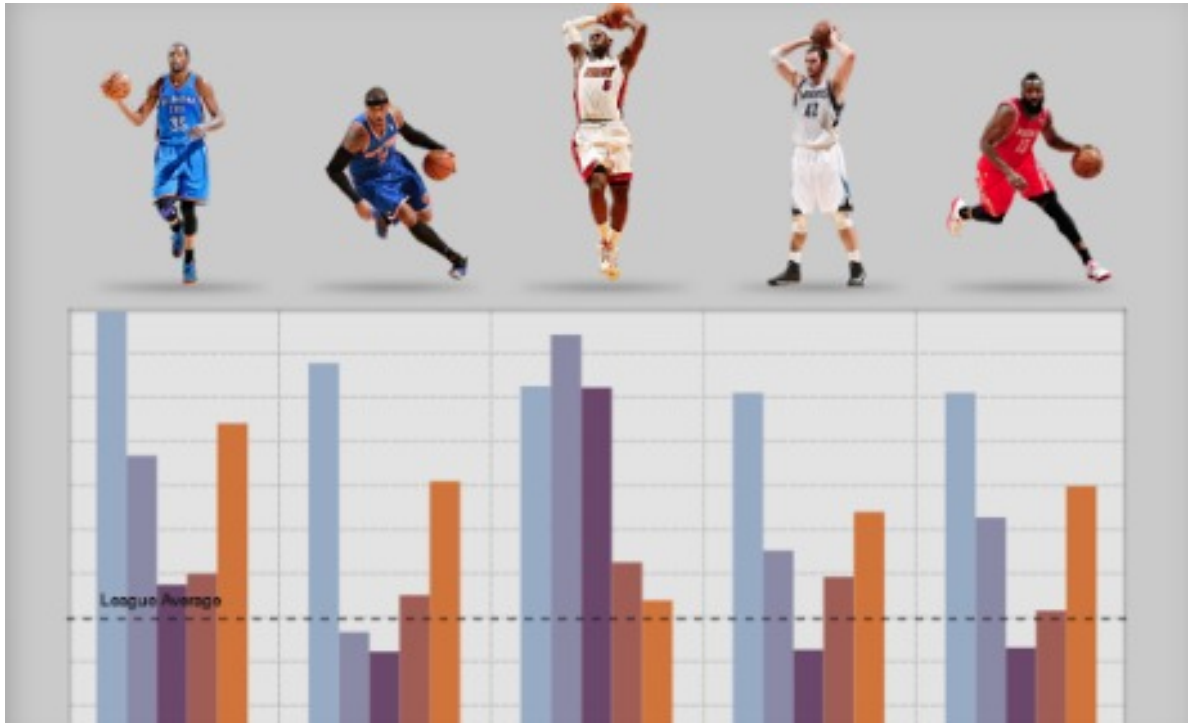
Why do we need statistical tools?



Evaluating and formulating public policy!
https://www.mackinac.org/10515

Why do we need statistical tools?

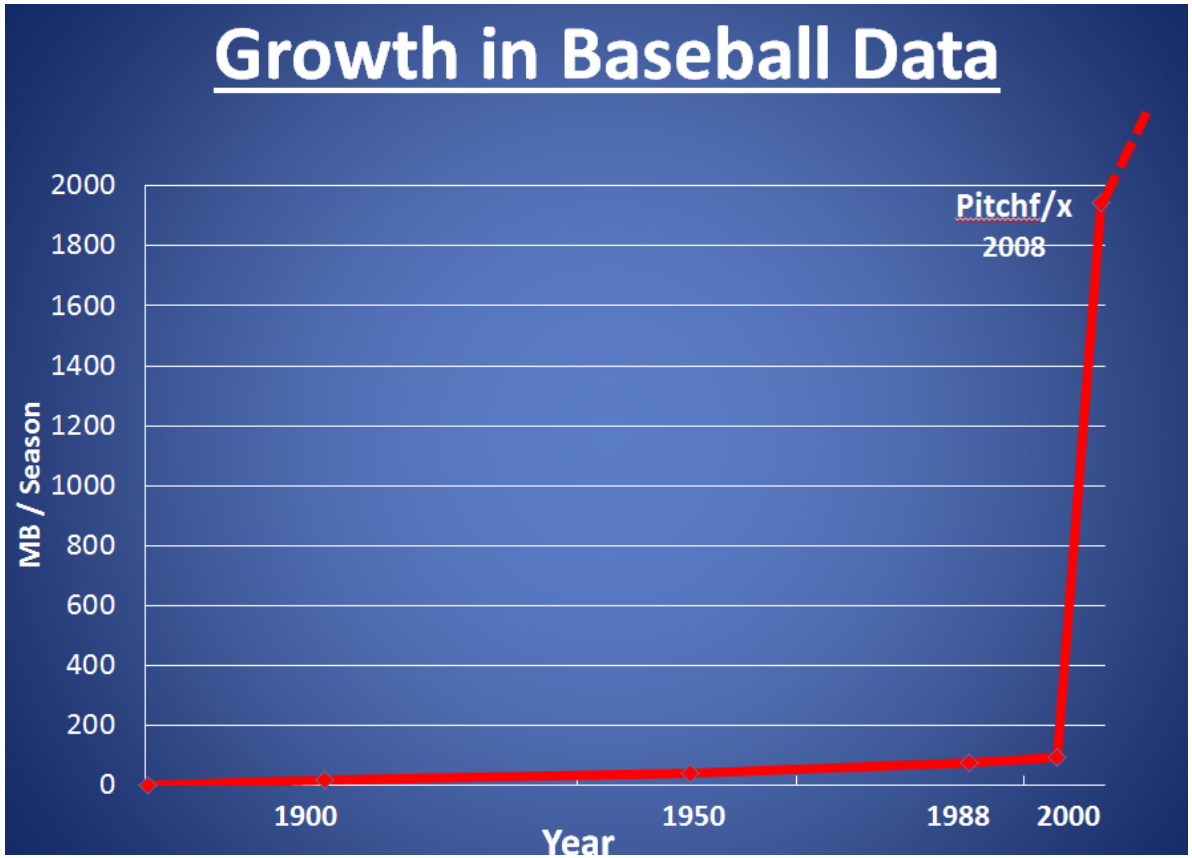
- Prediction
- Public policy



Money! Hedge funds! Stocks! Business!
https://www.institutionalinvestor.com/article/b14zbbks457k6t/hedge-fund-moneyball-big-data-sports-and-finance

Why do we need statistical tools?

- Prediction
- Public policy
- Business and money!



What about sports?!

https://www.datanami.com/2014/10/24/todays-baseball-analytics-make-moneyball-look-like-childs-play/

Why do we need statistical tools?

- Prediction
- Public policy
- Business and money!
- Sports!

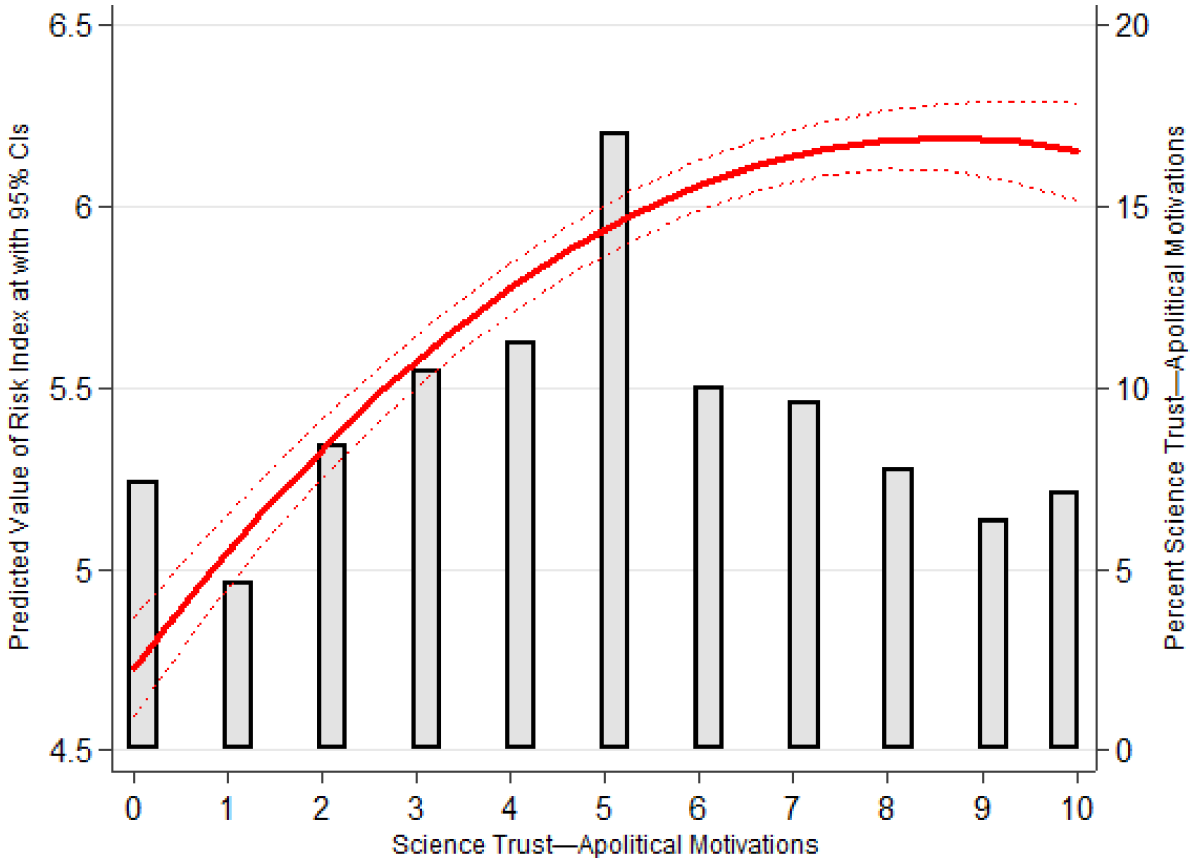
PROBABILITY OF WINNING (ACCORDING TO BET POSITION)

Bet Position	Probability of Winning	Odds (a.k.a Pay Off)	House Edge
Singe Number	2.70%	35:1	2.70%
Split	5.41%	17:1	2.70%
Street	8.11%	11:1	2.70%
Square	10.81%	8:1	2.70%
Line	16.22%	5:1	2.70%
Column	32.43%	2:1	2.70%
Dozen	32.43%	2:1	2.70%
Even Money	48.65%	1:1	2.70%

Roulette anyone? Blackjack? Poker?

Why do we need statistical tools?

- Prediction
- Public policy
- Business and money!
- Sports!
- Gambling!



RESEARCH!

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.024993

Why do we need statistical tools?

- Prediction
- Public policy
- Business and money!
- Sports!
- Gambling!
- Cause and effect - RESEARCH!

Research!

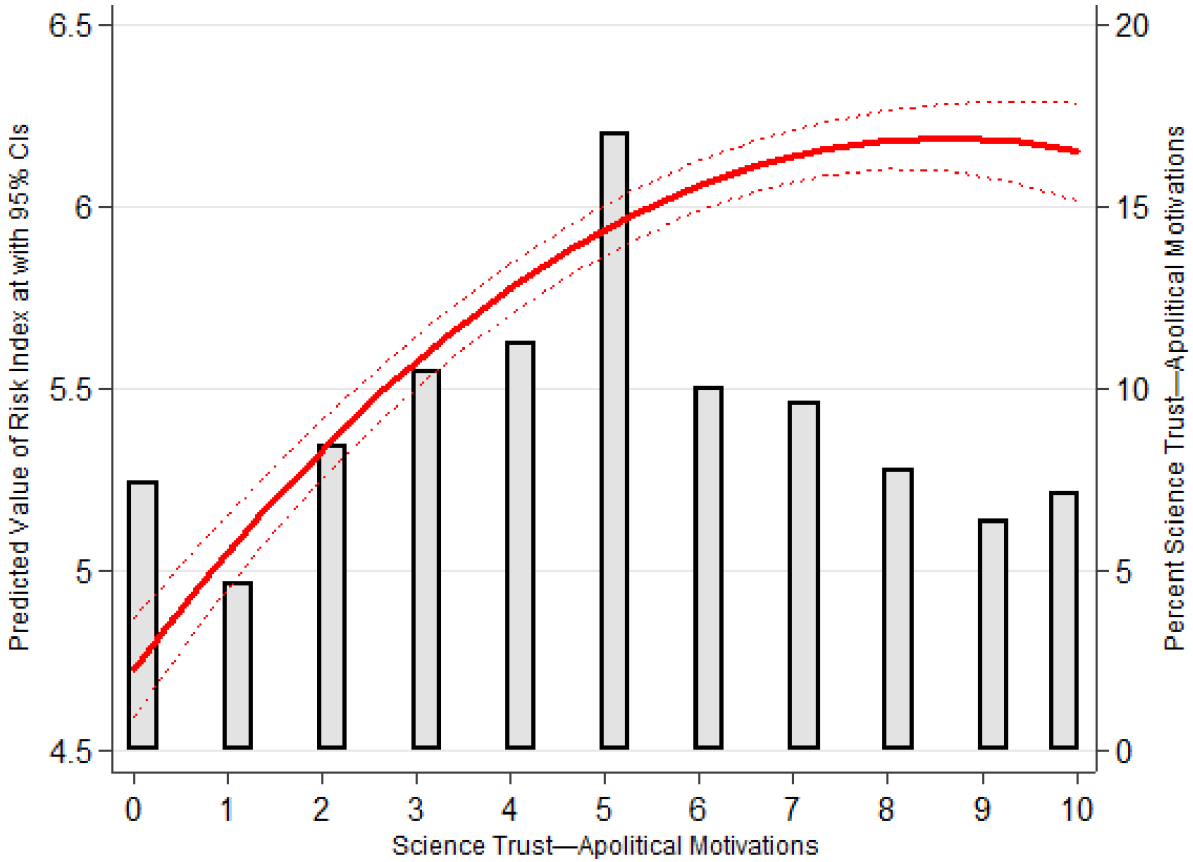


Figure:
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0249937

First week

Tomorrow: Course Topics Intro

- Survey and pre-quiz
  - Extra credit
  - 10-15 minutes
  - For your benefit!
- Basic probability
- Simple descriptive statistics
- Graphical look at correlation
- Graphical look at OLS regression
- Role of statistics in proving causation
- Your questions about issues with lab prep for Wednesday!

First Week

Wednesday: R programming introduction - come prepared!

- Look over https://happygitwithr.com/index.html (Parts 4, 5, 6, 7 and 12 are most important.)
- Sign up for a Github account *
- Sign up for a free R Studio Cloud account *
- Install & configure Git on your computer *
- Install R on your computer *
- Install R Studio on your computer *
- Create a project in R Studio using the class Github repo *
  - https://github.com/tomhanna-uh/pols3316-summer2022
- * = potential EC

First Week

Project, Project Data, and Problem Set 1

- The Project is step-by-step
- Work in steps all semester
- You pick your data (discuss Thursday and Friday)
- Pick simple data!
- Produce something you can share
- Problem set 1 - Sums, means, medians, modes, variance, standard deviation, questions about your project data, copy and paste R results

The End