Survey Research and Design

Introduction and Course Overview

William Marble
August 29, 2023

U.S. Extends Job Growth Streak Even as Economy Cools
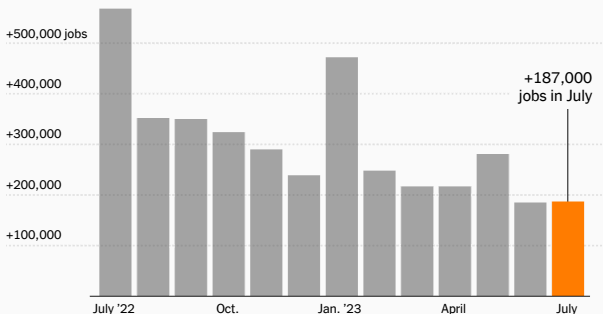
Employers added 187,000 workers in July, a slower pace than the recent norm, but "more sustainable," one economist said.
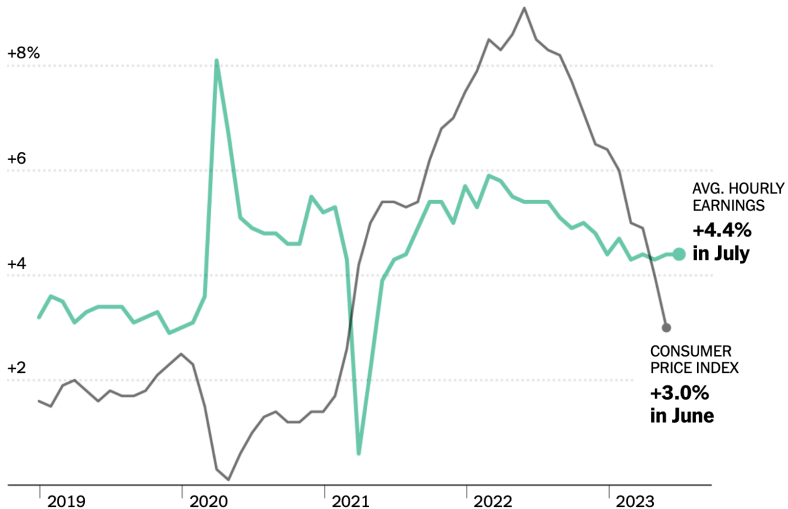
By Lydia DePillis

Aug. 4, 2023

Monthly change in jobs

+187,000 jobs in July

Note: Data is seasonally adjusted.   •   Source: Bureau of Labor Statistics   •   By Karl Russell

Year-over-year percentage change in earnings vs. inflation

AVG. HOURLY EARNINGS **+4.4% in July**

CONSUMER PRICE INDEX **+3.0% in June**

Note: Earnings data is seasonally adjusted. • Source: Bureau of Labor Statistics • By Karl Russell

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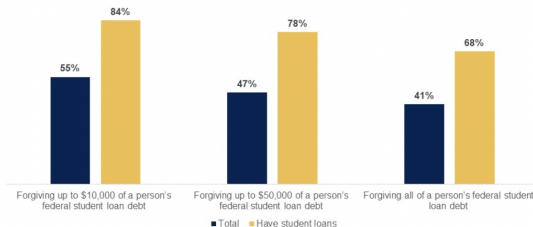- ▶ Why does the government collect this data in the first place?

Source: NPR/Ispos poll, June 3-5, 2022

Presidential Approval
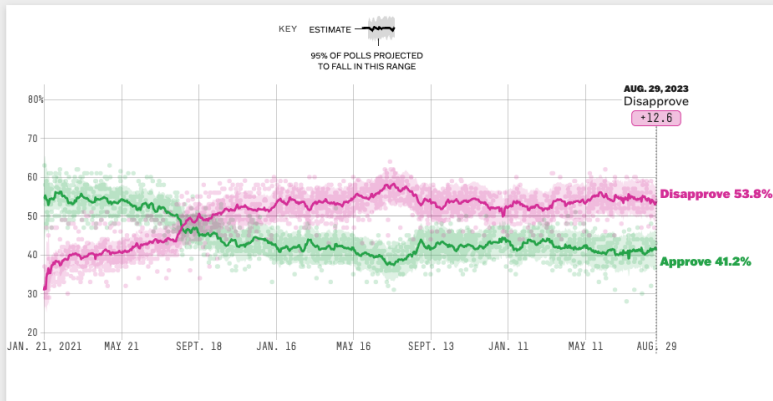
Source: FiveThirtyEight poll aggregation

Historic Highs in Past-Year Marijuana and Hallucinogen Use Among Young Adults (Ages 19-30) in 2021
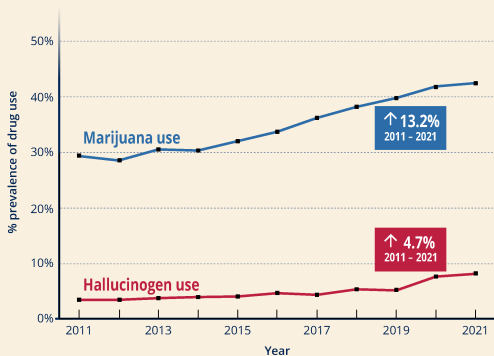
Source: 2021 Monitoring the Future Panel Survey

nida.nih.gov

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But surveys can also lead us astray...

**Clinton Was Supposed to Win Pennsylvania
(Final Margin: 48.6% Trump to 47.8% Clinton)**
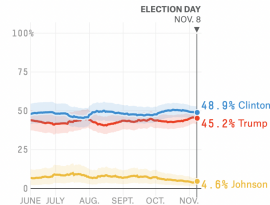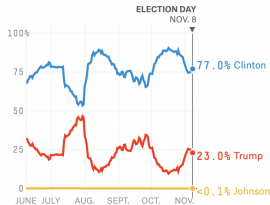
Source: FiveThirtyEight polls-only election forecast

Gun Control Referendum Results Diverge from Survey-Based Estimates

National Polls Overstated Voters' Support for Background Checks

State referendums in Maine, Nevada, Washington and California drastically underperformed expectations. Instead, support for background checks mirrored a state's partisan composition.

Expectations and actual results for referendums on background checks:

California (2016)

Expected support	91%
Actual support	63%

Washington (2014)

Expected support	81%
Actual support	59%

Nevada (2016)

Expected support	86%
Actual support	50%
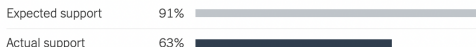
Maine (2016)

Expected support	83%
Actual support	48%
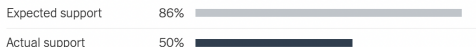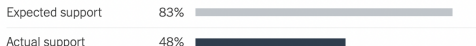
"Expected support" is a modeled estimate by Chris Warshaw and Devin Caughey, based on available national survey data. The California referendum was on ammunition background checks.

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▶ how to analyze survey data and write about the results

▶ the full process of designing, fielding, and analyzing a survey

Specific Course Topics

1. R programming for survey analysis
2. Probability and sampling: theory of survey statistics
3. Designing questionnaires
4. Issues of nonresponse
5. Survey experiments
6. Horserace polling and election forecasting
7. Measuring public opinion at the local level
8. Measuring political ideology and other latent traits
9. Asking about sensitive topics in surveys
10. Panel and time series surveys

Course Reading

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- ▶ Textbook: Robert Groves et al., *Survey Methodology*. Available online via library
- ▶ Additional book: G. Elliott Morris, *Strength in Numbers*. Purchase on your own ($15 paperback on Amazon).
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- ▶ Do the reading before first class on topic (but better late than never)

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  - ▶ How does this paper relate to other research? What follow-up questions does it raise?
- ▶ **Struggling with the reading is normal!**

Semester-Long Project

- ▶ Our class will collaborate to design and run a survey in the first week of November
- ▶ You will propose a research question, design a survey to answer that question, gather data, and analyze the results
- ▶ The topic should be of broad public or scholarly interest. Lots of room for creativity: start brainstorming!
- ▶ Your final project will be a research paper based on the survey (roughly 10-12 pages)
- ▶ Last day of class: brief presentation to share findings and crowdsource feedback

Problem Sets

- ▶ Four problem sets
- ▶ Mix of data analysis, review of technical concepts, and writing
- ▶ Scored on 1-12 scale
  - ▶ 10 = everything is correct
  - ▶ 12 = everything is correct, explanations are exemplary, code and analyses are particularly well-executed and clearly communicated. 12's could be used as the answer key.
- ▶ No penalty for first late submission within 3 days
- ▶ Work with classmates, but submit your own write-ups and code. Note which classmates you worked with in your submission.
- ▶ Due dates listed on syllabus

Paper Discussion

- ▶ On some class meetings, pairs students will be tasked with leading a discussion on one of the readings
- ▶ Group should summarize the paper, then propose discussion questions for the class (more detailed instructions later)
- ▶ I'll send around a sign-up form and assign pairs based on mutual interest in topics

Midterm Exam

- **In class on Thursday, October 26**
- Some technical material, but won't ask you to do calculations by hand

Grading

15% Attendance, participation, engagement, and office hours attendence

15% Group paper discussion

30% Problem sets

15% Midterm exam

25% Final project (5% presentation, 20% final submission)

Computation

We'll use R to analyze data. Installation instructions posted on Canvas.

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You should be able to understand what this code does:

```
1   dat <- read.csv("survey_data.csv")
2   names(dat)
3
4   dat$age <- 2022 - dat$birthyr
5   subs <- subset(dat, age >= 18 & age < 35)
6
7   mean(subs$biden_approval == "Strongly Approve")
8   mean(subs$biden_approavl == "Strongy Disapprove")
9
10
```

We will review key R functionality starting next week.

Academic Integrity and Citations

Your job in this class is to learn how to interpret and conduct survey research — not merely to complete the assignments

- ▶ The class is about *thinking and understanding*
- ▶ Survey research is a diverse field spanning academia, industry, and journalism — you may find useful sources in unlikely spots
- ▶ Any sources you consult in your work should be cited
- ▶ Standard practice to borrow survey questions. In class you should cite them.

ChatGPT/other LLMs/AI

- ▶ ChatGPT and other LLMs are powerful, but not all-knowing
- ▶ All code/answers must be written on your own
- ▶ Can't effectively use these tools without knowing what you're talking about
- ▶ That said they can be helpful e.g. for resolving a coding problem. You can use them as an *aid* as you might use a calculator
- ▶ If you use ChatGPT, explain *how* you use it in a footnote or citation
- ▶ But wholesale copying of ChatGPT output is a violation of academic integrity and not a great idea anyway:
    - ▶ They work by taking (uncredited) work that's available on the internet
    - ▶ They often mislead, make up answers, etc.
    - ▶ Midterm exam is in-person, closed book
- ▶ If you're unsure about what uses of a resource are appropriate, just ask me

Office Hours

Prof. Marble:

- ▶ 33 Fox-Fels Hall, 3rd floor
- ▶ OH on Tuesdays 10:30am-12:30pm or by appointment
- ▶ Email: marblew@sas.upenn.edu
- ▶ **You are required to come to OH at least once before October 10**

TA Liz Schreier:

- ▶ 31 Fox-Fels Hall, 3rd floor
- ▶ OH on Wednesday 2pm-4pm

What else do you need to know?

bit.ly/psci3802