Insert heading

KHL

remove the pound sign and insert the file path to the image on your computer in the

Introduction

The research question(s); Background/significance of the research; and relevant highlighted information about the data set. (abbreviated version of part 1)

- Does a higher level of educational attainment generally increase personal earnings income across different states?
- Does personal earnings increase with an individual's health?
- Do older individuals generally earn more money than younger individuals?

Given the rise in inflation and cost of living, exploring the relationships connected to personal earnings across different states is fundamental to understanding how factors like education, health status, and age, influence income disparities at a regional level.This inquiry is grounded in the longstanding debate within economic and social research regarding the return on investment in education, health, and wellness. By examining these relationships across diverse geographical areas, the analysis can uncover nuanced insights into how local economies, policies, and opportunities shape the economic benefits of educational attainment.

The U.S. Census is pivotal in the nation's political and economic framework, ensuring each community receives its fair share based on its specific needs (Bureau, 2021).

In addition, it is crucial to the political sphere with its use in redrawing a multitude of political boundaries to ensure each district contains roughly equal numbers of people (Mather & Scommegna, 2019). Its political importance extends even to the U.S. House of Representatives, which bases its apportionment of House seats on Census population data, safeguarding the equity of voting power within the nation (Farley, 2020).

Originating from multiple reputable sources, the dataset focuses on the United States demographic, economic, and educational landscapes as of 2020. It's based on the US Census Bureau's Annual Social and Economic Supplement (ASEC) survey, including the Current Population Survey (CPS) for employment statistics, and adds questions on poverty and migration. Unemployment data comes from the Bureau of Labor Statistics, and urban population percentages from the Census Bureau's Decennial Census. State sales tax rates, sourced from the Tax Foundation, provide a financial perspective.

The dataset was merged on a state basis, focusing on individuals 18 and older to better represent the adult population. It includes averages of education level, gender, work expenses,

and age from the ASEC survey, combined with unemployment rates from the Bureau of Labor Statistics and sales tax rates from the Tax Foundation at the state level.

Methods and Analysis

Include EDA from Report 1

ANALYSIS: - Multiple linear regression logistic regression - Include required analysis steps • Include the "added techniques" that you selected • Assessing the model. • Selecting a final "best" model. • NOTE: Your analysis should follow the appropriate order on your poster with a logical flow

Results

The statistical interpretation of the final model. This should be in statistical terms and overall interpreting and assessing the statistical usefulness of the model with the appropriate metrics. There should be no R output (that will go in the appendix). However, you will include your final model.

Conclusions

- interpreting your results of the analyses in context of the problem
- commenting on areas of future improvements.

Appendix A: Data Dictionary

Reference Name	Variable Name	Description
State by FIPS Code	`STATEFIPS`	A qualitative measure that identifies the U.S. state (or D.C.) corresponding to the observation by a standardized numeric code. The 51 possible levels are discrete, ranging from 1-56, omitting 3, 7, 14, 43, and 52.
State	`State`	A qualitative measure that identifies the state corresponding to the observation. The 51 possible levels are names of the 50 U.S. states and the District of Columbia.
Educational Attainment	`H_ED`	A qualitative measure that identifies the average of highest education among adult residents of a given state. The three possible levels include a Vocational Associate's Degree, an Academic Associate's Degree, and a Bachelor's Degree.
Majority Sex	`SEX`	A qualitative measure that identifies the predominant sex among a state's adult residents. Two possible levels, male and female, indicate if the adult population of a state is predominately male or female.
Health Status	`HEA`	A qualitative measure that reports the average health status of a state's residents. Two levels, very good health and good health indicate the average health status of a state's residents.
Personal Earnings	`PEARNVAL`	A continuous quantitative measure that reports the average personal earnings of a state's residents, reported in U.S. Dollars. Possible values within the data range from $45096.53 to $95387.40.
Age	`AGE`	A continuous quantitative measure that reports the average age of a state's adult residents in years. Values range from 40.83460 to 46.39759.

Reference Name	Variable Name	Description
Unemployment Rate	`UNEMP_RATE`	A continuous quantitative measure of a state's unemployment rate from 2020. Unemployment rate is reported as a percentage; the range of possible values within the data is from 4.2% to 13.5%.
Sales Tax Rate	`TAX_RTE`	A continuous quantitative measure of a state's sales tax. Sales Tax Rate is reported as a numerical figure; the range of possible values within the data is from 0.0% (0% sales tax) to 7.25% (7.25% sales tax).
Percentage of Urban Residents	`URB_PER`	A continuous quantitative measure of a state's proportion of urban residents to nonurban residents. This variable is reported as a percentage; the range of possible values within the data is from 38.7% to 100.0%.
Work Expenses	`WRK_SPND`	A continuous quantitative measure that identifies the average amount of money spent on work-related expenses among residents of a state, reported in U.S. Dollars. Possible values in the data range from $1101.676 to $1463.411.

Appendix B: Data Rows

	STATEFIPS	State	H_ED	SEX	HEA
1	1	Alabama	Vocational Associate's	Male	Good Health
2	2	Alaska	Vocational Associate's	Male	Good Health
3	4	Arizona	Vocational Associate's	Male	Good Health
4	5	Arkansas	Vocational Associate's	Male	Good Health
5	6	California	Vocational Associate's	Male	Good Health
6	8	Colorado	Academic Associate's	Male	Good Health
7	9	Connecticut	Academic Associate's	Male	Good Health
8	10	Delaware	Vocational Associate's	Male	Good Health
9	11	D.C.	Bachelor's	Female	Very Good Health
10	12	Florida	Academic Associate's	Male	Very Good Health
11	13	Georgia	Vocational Associate's	Female	Good Health
12	15	Hawaii	Academic Associate's	Male	Good Health
13	16	Idaho	Vocational Associate's	Male	Good Health
14	17	Illinois	Academic Associate's	Male	Good Health
15	18	Indiana	Vocational Associate's	Male	Good Health

	PEARNVAL	AGE	UNEMP_RATE	TAX_RTE	URB_PER	WRK_SPND
1	53905.05	42.60043	6.4	0.0400	59.0	1142.836
2	59908.18	43.33103	8.3	0.0000	66.0	1234.210
3	54509.31	41.63326	7.8	0.0560	89.8	1229.184
4	53513.54	43.28300	6.2	0.0650	56.2	1193.809
5	62824.72	42.26563	10.1	0.0725	95.0	1237.779
6	64224.86	43.52050	6.8	0.0290	86.2	1326.110
7	70758.66	45.24870	7.9	0.0635	88.0	1250.562
8	58795.20	43.32292	7.5	0.0000	83.3	1195.540
9	95387.40	40.90494	7.9	0.0600	100.0	1369.055
10	54585.91	44.37481	8.1	0.0600	91.2	1176.506
11	55946.86	42.54033	6.5	0.0400	75.1	1231.916
12	54258.90	45.30385	11.7	0.0400	91.9	1232.113
13	55717.66	42.08074	5.5	0.0600	70.6	1303.237
14	64375.88	43.44074	9.3	0.0625	88.5	1292.794
15	53621.19	42.57899	7.3	0.0700	72.4	1308.013

Appendix C: Tables and Figures

Appendix D: References

Background

- Bureau, U. C. (2021, November 23). Why we conduct the decennial census of Population and Housing. Census.gov. https://tinyurl.com/5fdyh82c
- Mather, M., & Scommegna, P. (2019, March 15). Why is the U.S. Census so important?. Population Reference Bureau https://www.prb.org/resources/importance-of-u-s-census/
- Farley, R. (2020, January 31). The importance of census 2020 and the challenges of getting a complete count. Harvard Data Science Review. https://hdsr.mitpress.mit.edu/pub/rosc6trb/release/3

Data

- 2020 Unemployment Rates: U.S. Bureau of Labor Statistics. (2024). Unemployment rates for states. U.S. Bureau of Labor Statistics. https://www.bls.gov/lau/lastrk20.htm
- Urban percentage of the population for states, historical. Urban Percentage of the Population for States, Historical | Iowa Community Indicators Program. (2024.). https://www.icip.iastate.edu/tables/population/urban-pct-states
- State and local sales tax rates, 2020. Tax Foundation. (2024, February 22). https://taxfoundation.org/data/all/state/2020-sales-taxes/
- Bureau, U. C. (2022, October 27). 2020 annual social and economic supplements. Census.gov. https://www.census.gov/data/datasets/2020/demo/cps/cps-asec-2020.html
- ASEC 2020 Public Use Data Dictionary. (2020). https://tinyurl.com/3h8vexva ### Supplemental Code and Analysis Help

1. List your references used to learn more about your techniques and coding here