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Analysis of the disparity of the “Haves” and “Have-Nots” in United States of America

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USERS PROGRAM

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ABSTRACT

A major issue in America today is the growing gap between the rich and the poor. Even though the basic concept has entered the public consciousness, the effects of highly concentrated wealth are hotly debated and poorly understood by the general public. The goal of this paper is to get a fair picture of wealth gap and its ill effects on the American society. Before visualizing the financial gap, an exploration and descriptive analysis will be carried out. By considering the data of gross annual income, taxable income and taxes paid which is available on the website of United States Census Bureau, we will try to find out the actual spending capacity of the people in America. We will be visualizing the financial gap on the basis of the spending capacity. With the help of this analysis we will try to answer questions such as following. Why having a fair idea of this gap is important? At what rate is the average wealth of the American population increasing? Insights generated from answering these questions will be used for further analysis

METHODS

Data Preparation and Analysis:

- The data for analysis is collected from US census website. GDP per capita was obtained from the year 1960 to 2015 from the Bureau of Economic Analysis. High school graduation rates were obtained from the National Center for Educational Statistics. The variables chosen for the initial, single variable regression model were GDP per capita and crime rates which was collected from the Federal Bureau of Investigation’s Uniform Crime Reporting System.
- The data was collected and merged together in a single data set containing 29 variables. The null values obtained in the xml file downloaded from public websites were imputed using Enterprise Miner by the decision tree.
- Our objective is to analyze the distribution across years and then study the relationship between wealth disparity and crime.
- Further we studied the effect the economic factors like unemployment, poverty, wealth and education on crimes. GDP per capita and median income variables were considered to be indicators of wealth. High school graduation rate indicated the education rate.
- We also intend to predict the violent crime rates in order for the police forces to be ready when needed and to work efficiently.

RESULTS

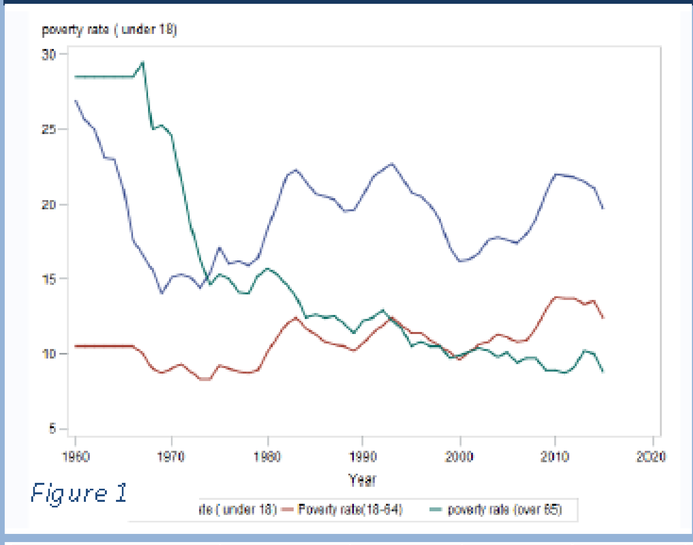

Figure 1

- The poverty rate of age group above 65 years has declined significantly over the years but the percentage of people below poverty in the age group 18-64 years is almost same i.e. 11%
- The GDP per capita is rising steeply owing to continuous increase in median income of the people. It has a strong positive correlation with graduation rate and income.
- A positive relationship was observed for the violent crime rates and GDP per capita. Negative relationship was observed between violent crime rates and poverty rate.

Variable	Mean	Std Dev	Sum	Minimum	Maximum
GDP_per_capita	23569	17090	1319850	3007	56116
poverty rate (over 65)	15.15357	6.74919	848.60000	8.70000	29.50000
poverty rate (under 18)	19.31429	2.98002	1082	14.00000	26.90000
Poverty rate (18-64)	10.76786	1.42013	603.00000	8.30000	13.80000
Median Income	50888	4154	2849711	44335	57909
Unemployment Rate	5.64179	2.15929	315.94000	0.04000	9.70000
graduation rate	73.28214	3.76351	4104	67.50000	83.40000
ViolentCrimerate	470.77321	160.60337	26363	158.10000	758.20000
Propertycrimerate	3859	1027	204524	1726	5353

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RESULTS CONTINUED

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-244.69229	1029.07174	-0.24	0.8131
Unemployment Rate	1	-13.77815	6.10136	-2.26	0.0285
Median Income	1	0.02430	0.01271	1.91	0.0619
GDP_per_capita	1	-0.01635	0.00353	-4.64	<.0001
graduation rate	1	-6.10434	4.24988	-1.44	0.1574
Poverty rate (18-64)	1	89.89254	26.47160	3.40	0.0014
poverty rate (over 65)	1	-30.85864	3.77828	-8.17	<.0001
poverty rate (under 18)	1	-5.75556	6.12513	-0.94	0.3521

- In the single regression model for violent crime rate and GDP per capita, the results show that for every 1000-dollar increase in per capita income, the crime rate goes up by 2.5%.
- After finding good fitting model with R2 equal to 80.8%, we also tested the joint significance.

Variables	W1
GDP_per_capita	0.2929
Unemployment_Rate	0.1633
Population	0.3817
Median_Income	0.5228
Poverty rate(18-64)	0.1425
poverty rate (under 18)	-0.0712
poverty rate (over 65)	-0.7641
graduation rate	-0.0516

- The main dependent variable GDP per capita is seen to be significant at 1%.
- Poverty rate of the age group above 18 years is also significant at this level.

CONCLUSIONS

The following restricted multiple regression model was built after removing poverty rate under 18 years and graduation rate. The equation form of the model showing estimated effect of GDP per capita, median income, poverty rate and unemployment rate on violent crime rates.

Violent_crime_rate=-1271.5-0.018*GDP_per_capita+ 91.54*Poverty_rate(18-64years) -29.327*poverty_rate(over65 years) -15.9*Unemployment Rate + 0.03404*Median_Income

- As we had hypothesized initially, there is a positive relation between economic factors like unemployment, poverty, wealth, education and violent crime rates. Therefore we can conclude from the analysis that lower economic status (higher poverty rate) and unemployment is resulting in more crimes both violent and property type.
- The reason for decreased crime rate in case of high GDP per capita or basically reduced victimization of the rich could be due to the expenditure they are capable of making to protect themselves or their property.
- These results from the analysis can prove useful to policy makers too for forming criminal policies.

FUTURE SCOPE

- The population density in different parts and the spending capacity can also be included in the analysis which will improve the efficiency of the models.
- The effect on tax system because of the change in GDP per capita can also analysed.

REFERENCES

- United States Census Bureau
- National Center for Educational Statistics
- Bureau of Economic Analysis
- Federal Bureau of Investigation's Uniform Crime Reporting System

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