

DATA EXPLORATION

NORTH AMERICA & PART OF LATIN
AMERICA



TEAM 7:

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Daniel Soules Rivera

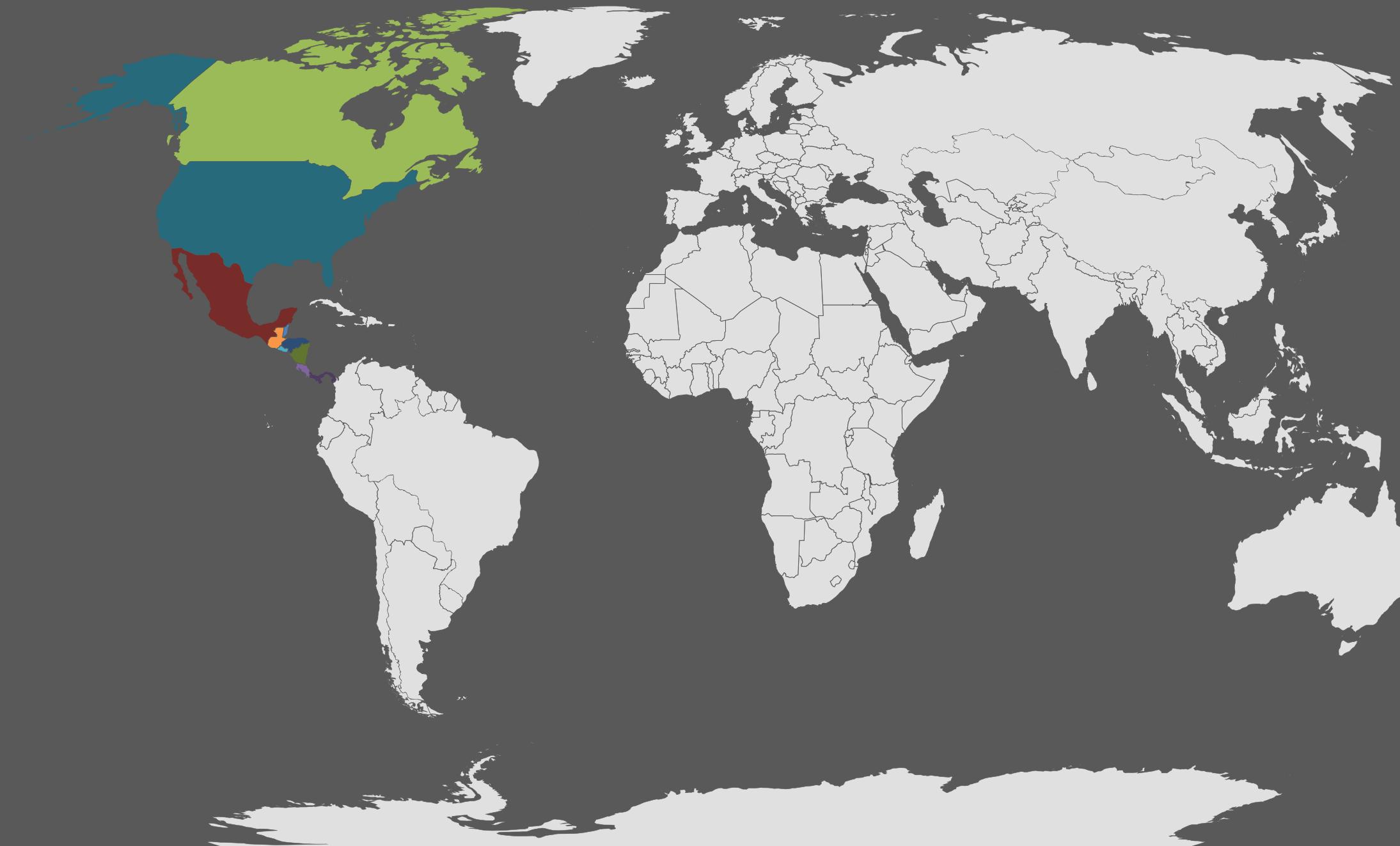
Elizabeth Parker Schooley

Piya Thavornwong

Mohammad Asad Pervez

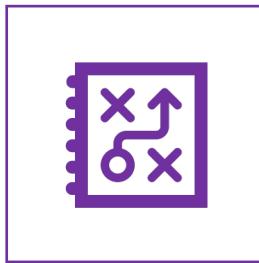
Marcel Allweins

Hot Rod



Hot Rod

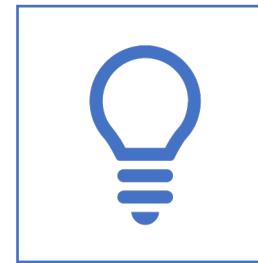
-
- A world map where the United States is highlighted in teal. A legend on the left lists various countries and territories, each associated with a colored square corresponding to its color on the map. The United States is listed under "United States".
- Belize
 - Bermuda
 - Canada
 - Costa Rica
 - El Salvador
 - Guatemala
 - Honduras
 - Mexico
 - Nicaragua
 - Panama
 - United States



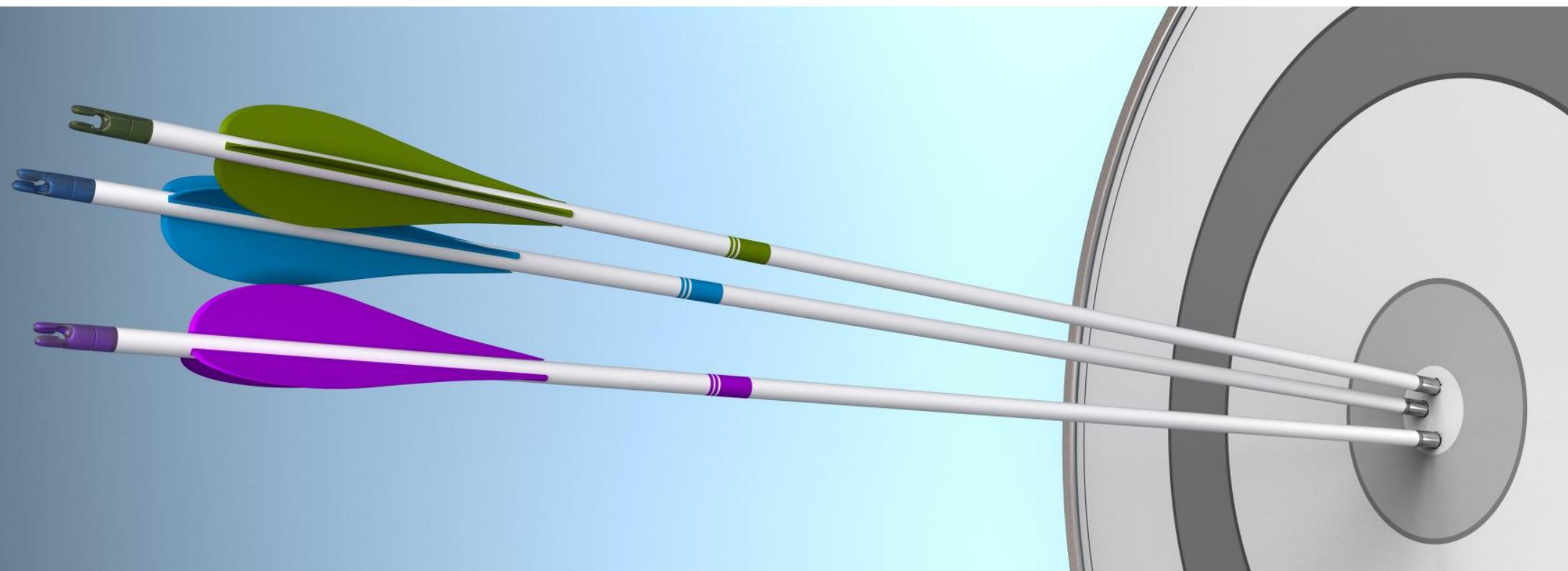
METHODOLOGY

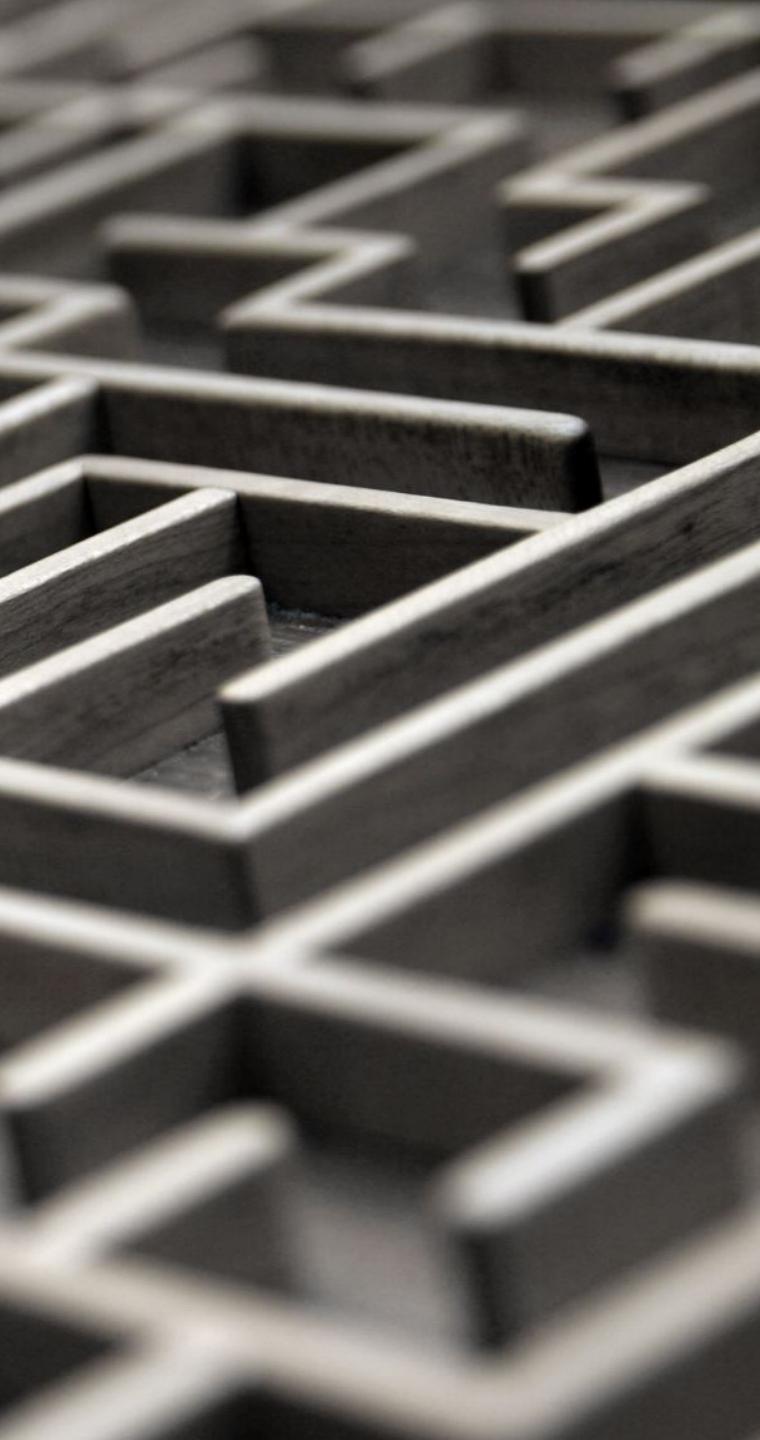


ANOMALIES



INFERENCES





METHODOLOGY



TOPIC SEPARATION

- Economics
- Industry
- Education
- Healthcare
- Population
- + Tourism



OUTLIER DETECTION

- Histogram Check
- Boxplot Comparison
- Scatter Plot
- Data Check

ANOMALIES



MISSING VALUES HANDLING

- Augmentation
- Imputation
- Deletion



CORRELATION ANALYSIS

- Regression Modeling
- Heatmaps

INFERENCES

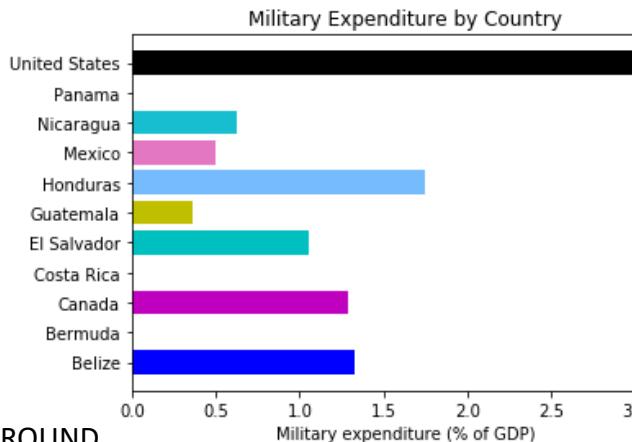
METHODOLOGY

ANOMALIES

INFERENCES

MILITARY EXPENDITURE

PECULIARITY



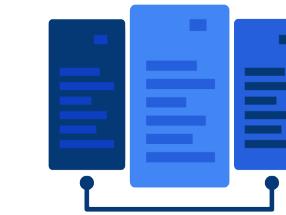
BACKGROUND



“ Costa Rica and Panama have abolished their military and Bermuda's is in charge of the United Kingdom ”

research -> data checks out

TAX REVENUE



```
AnomaliesList = ['ArmedForces', 'GDPexpMIL', 'MobileSubs', 'Tax']

def checkNA():
    print(NA_df.isnull().sum())
    for i in AnomaliesList:
        NA_df[f"m_{i}"] = NA_df[i].isnull().astype(int)
    print(NA_df.iloc[ : , -4: ].sum())

Tax_df = pd.read_excel(file, sheet_name = 'TaxRevenues')
NA_df.at[21,'Tax'] = Tax_df.at[6, 'TaxRevGDP']
NA_df.at[151,'Tax'] = Tax_df.at[4, 'TaxRevGDP']
NA_df.at[85,'Tax'] = Tax_df.at[2, 'TaxRevGDP']
NA_df.at[80,'Tax'] = Tax_df.at[0, 'TaxRevGDP']
```

“ Top 10 Offshore Tax Havens in the Caribbean ”

not reported -> own progression

BERMUDA'S GDP

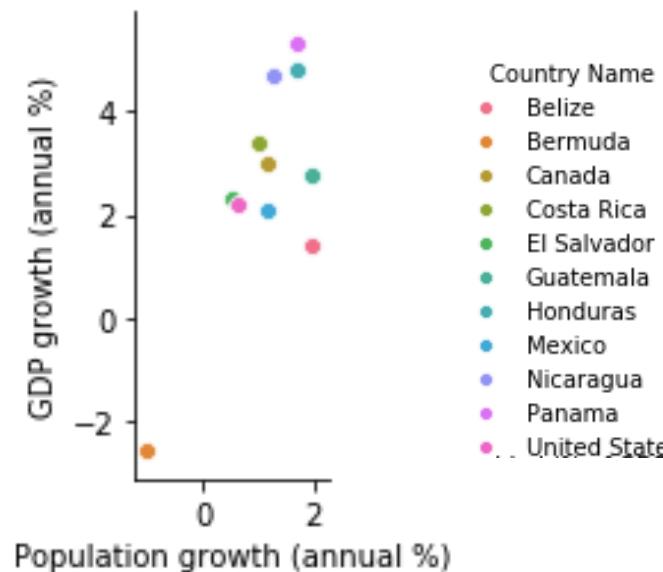
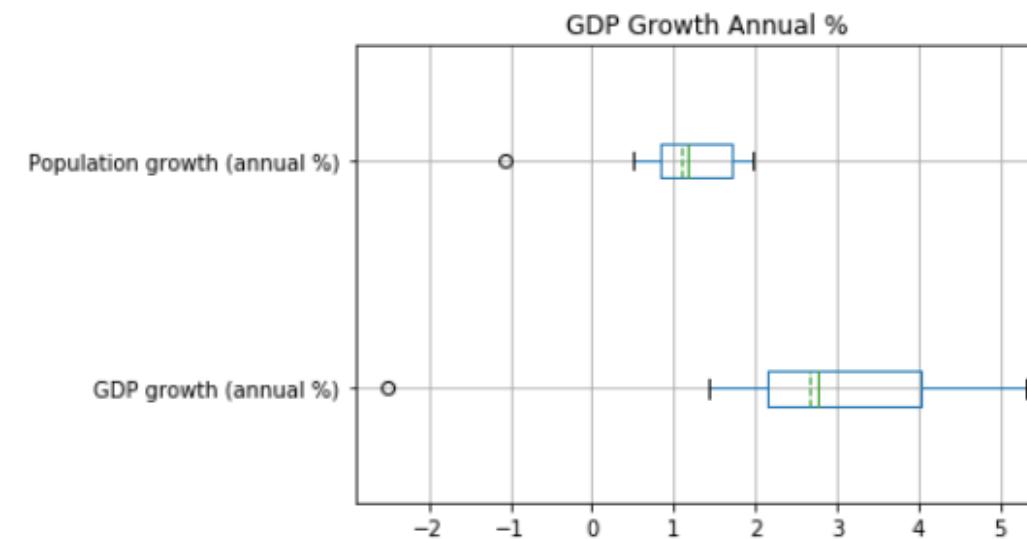


PECULIARITY

METHODOLOGY

ANOMALIES

INFERENCES



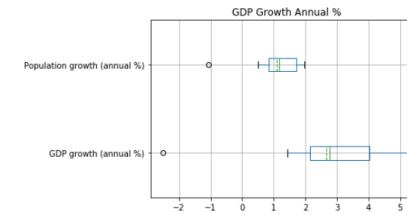
BERMUDA'S GDP



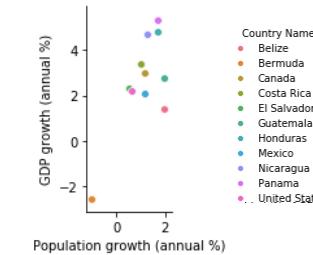
PECULIARITY

ANALYSIS

METHODOLOGY



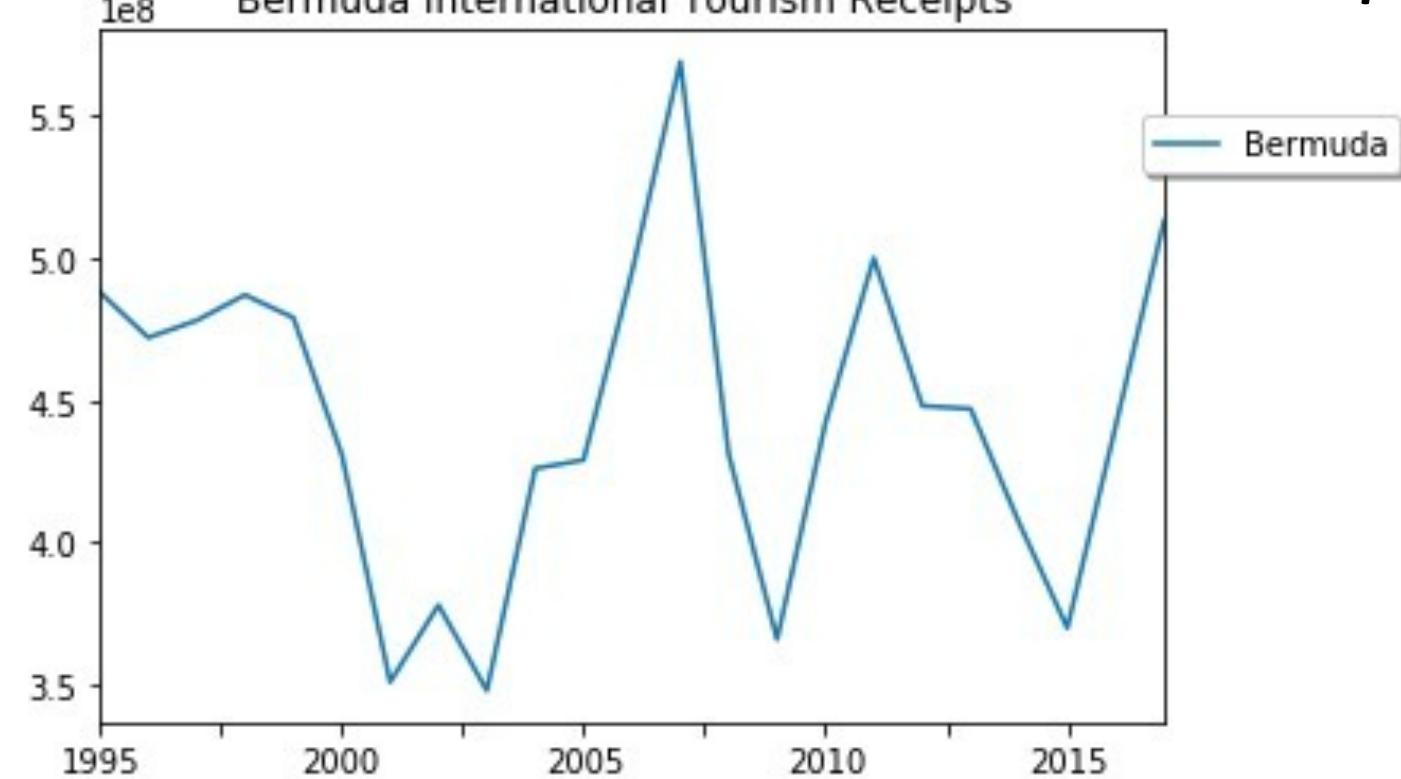
ANOMALIES



INFERENCES

ROI OF \$17M!

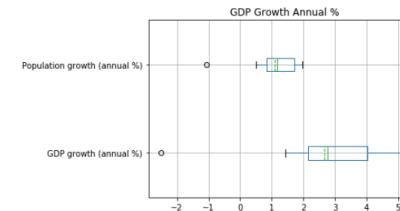
Bermuda International Tourism Receipts



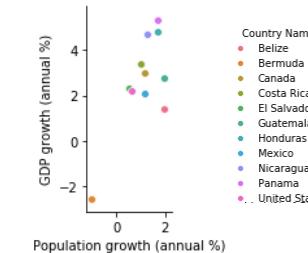
BERMUDA'S GDP



METHODOLOGY



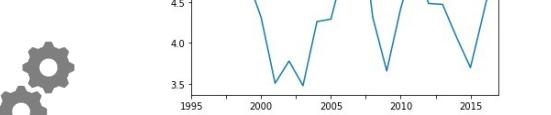
ANOMALIES



INFERENCES

“ Bermuda's Economy -
Dependent on international business and tourism,
almost everything is imported **”**

“ America's Cup delivers
economic boost for Bermuda **”**



“ Bermuda Tourism Authority's big return
on \$1.3m marketing spend **”**

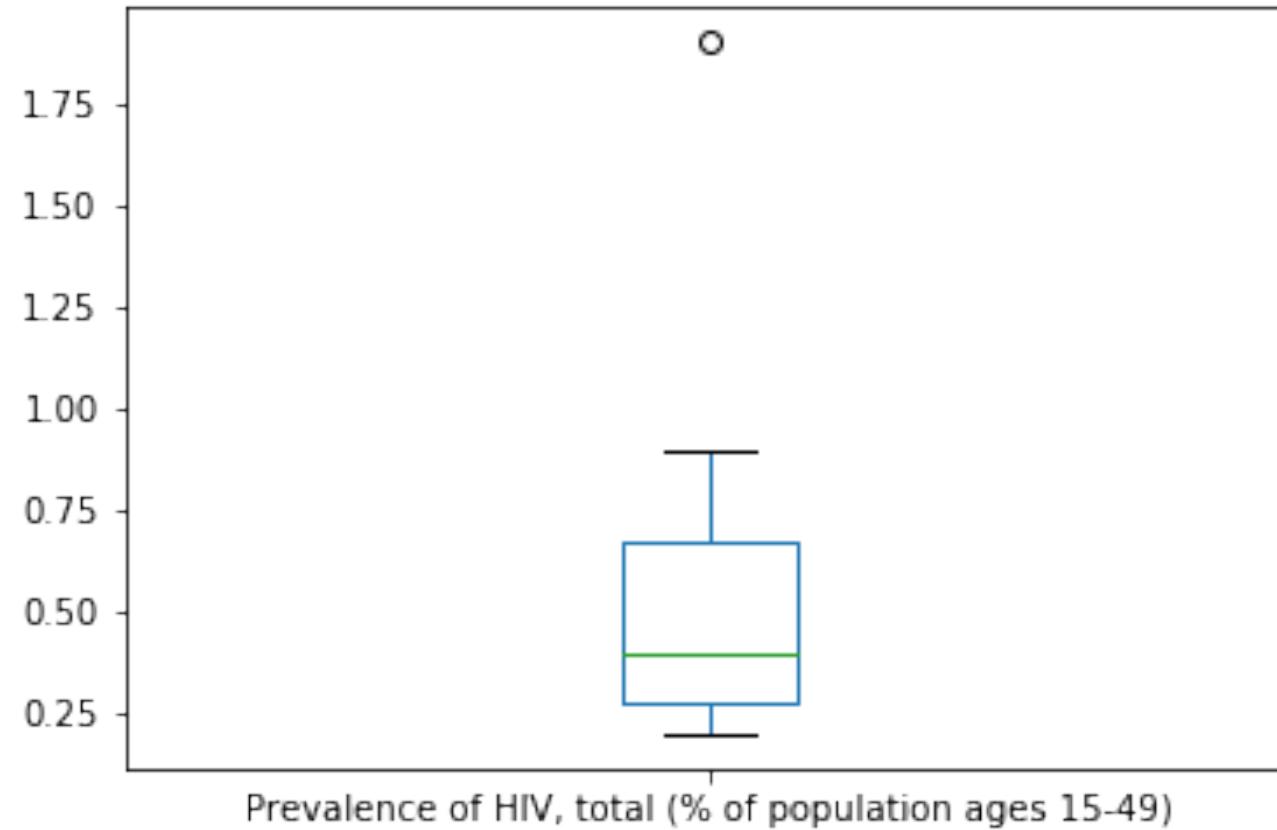
HIV IN BELIZE



METHODOLOGY

ANOMALIES

INFERENCES



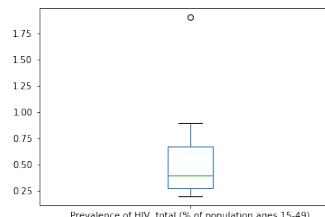
HIV IN BELIZE



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ANALYSIS

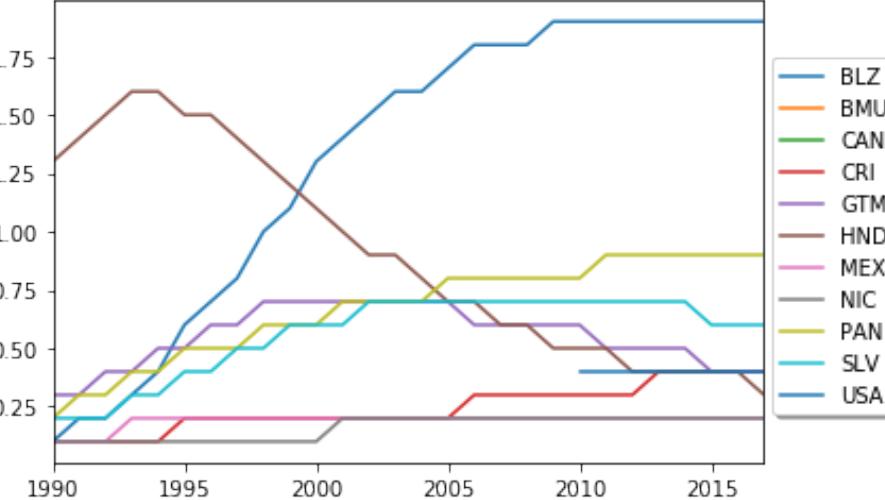
METHODOLOGY



ANOMALIES

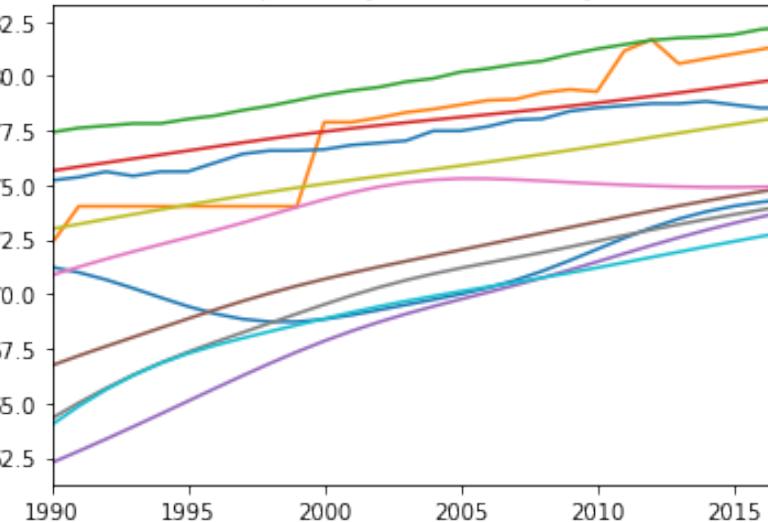


Prevalence of HIV, total (% of population ages 15-49)



INFERENCES

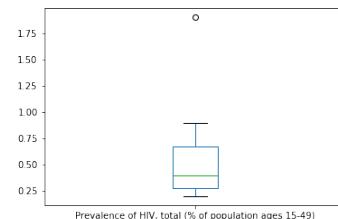
Life expectancy at birth, total (years)



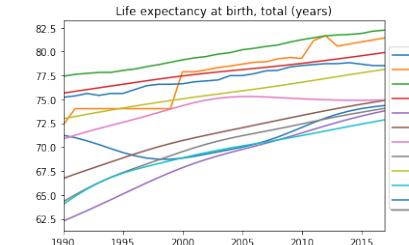
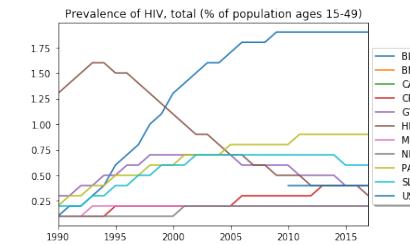
HIV IN BELIZE



METHODOLOGY



ANOMALIES



INFERENCES

“ UN helps Belize fight highest incidence of HIV/AIDS in Central America ”

“ HIV/AIDS was declared a national priority in Honduras between 2002 and 2006 under President Ricardo Maduro ”

POVERTY IN HONDURAS

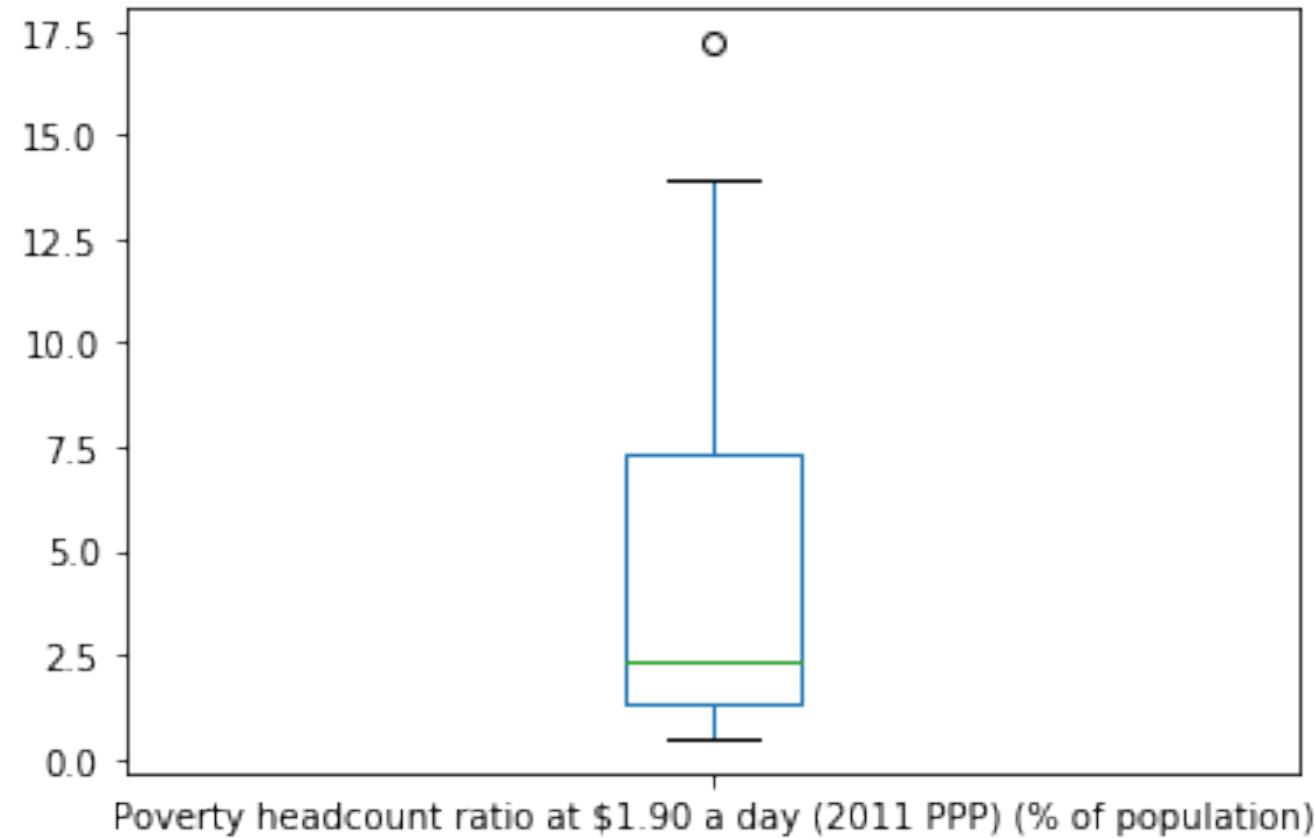
PECULIARITY



METHODOLOGY

ANOMALIES

INFERENCES



POVERTY IN HONDURAS

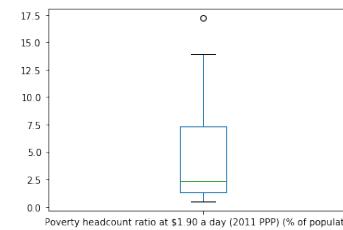
PECULIARITY

ANALYSIS

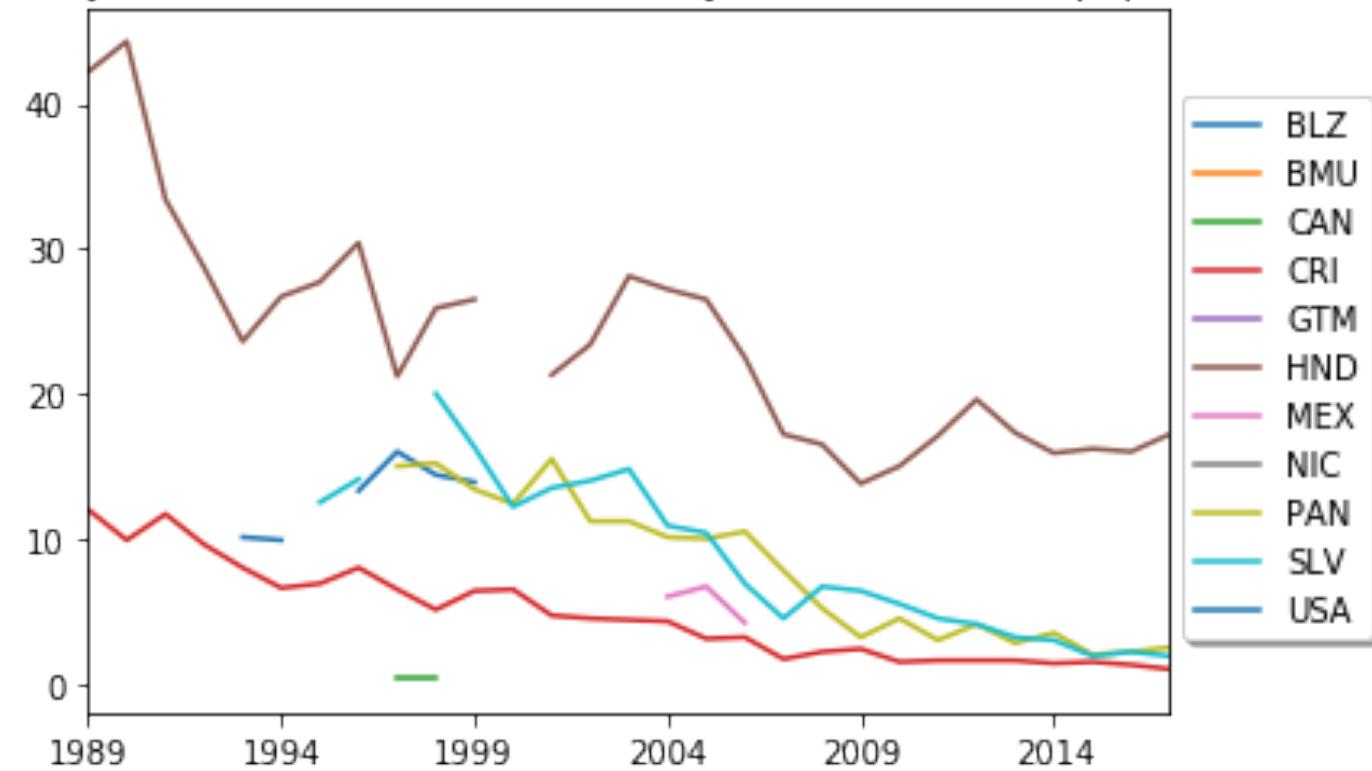
METHODOLOGY

ANOMALIES

INFERENCES



Poverty headcount ratio at \$1.90 a day (2011 PPP) (% of population)



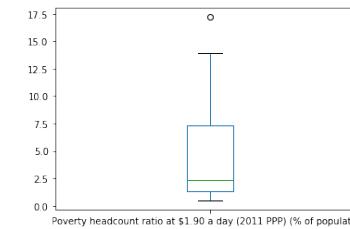
POVERTY IN HONDURAS

PECULIARITY

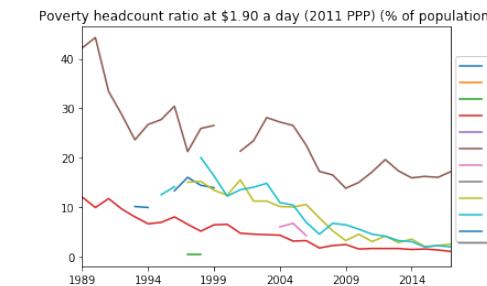
ANALYSIS

BACKGROUND

METHODOLOGY



ANOMALIES



INFERENCES



“ The United Nations Office on Drugs and Crime to label the country the murder capital of the world ”

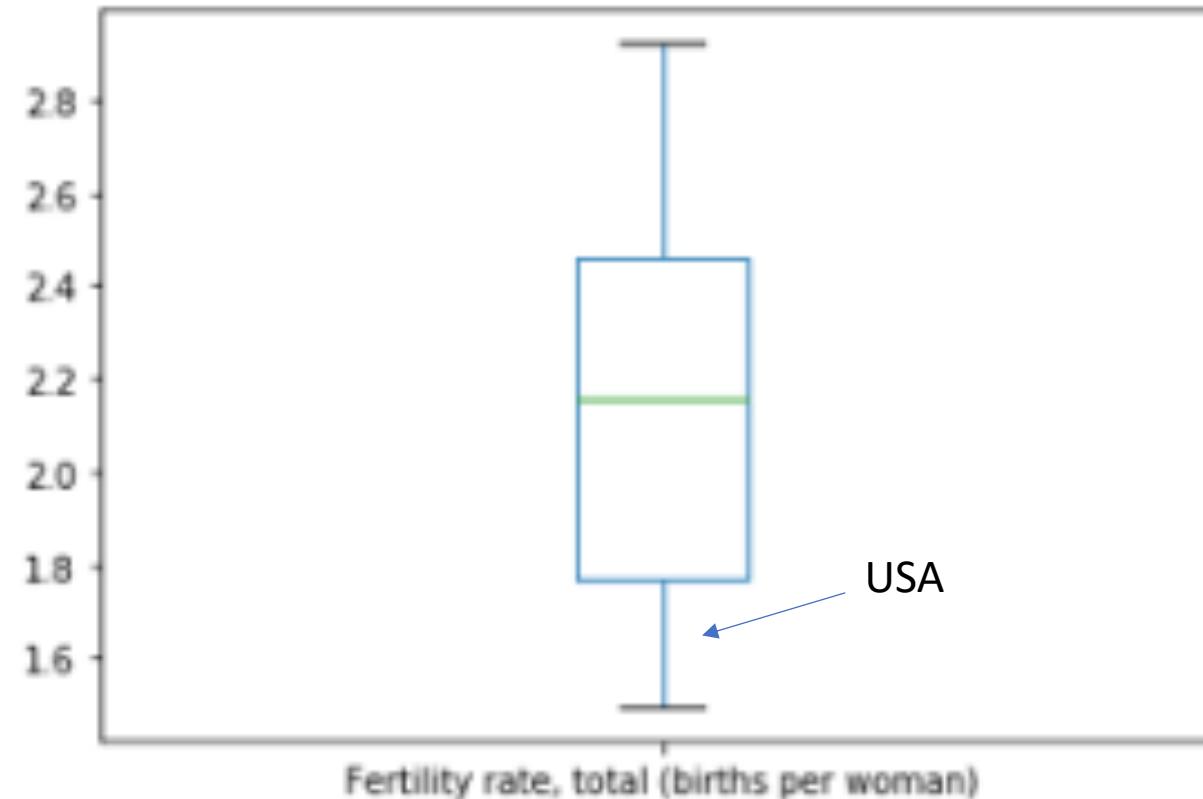
FERTILITY IN USA



METHODOLOGY

ANOMALIES

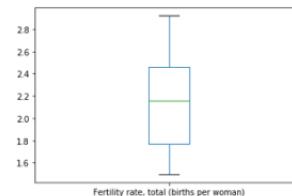
INFERENCES



FERTILITY IN USA

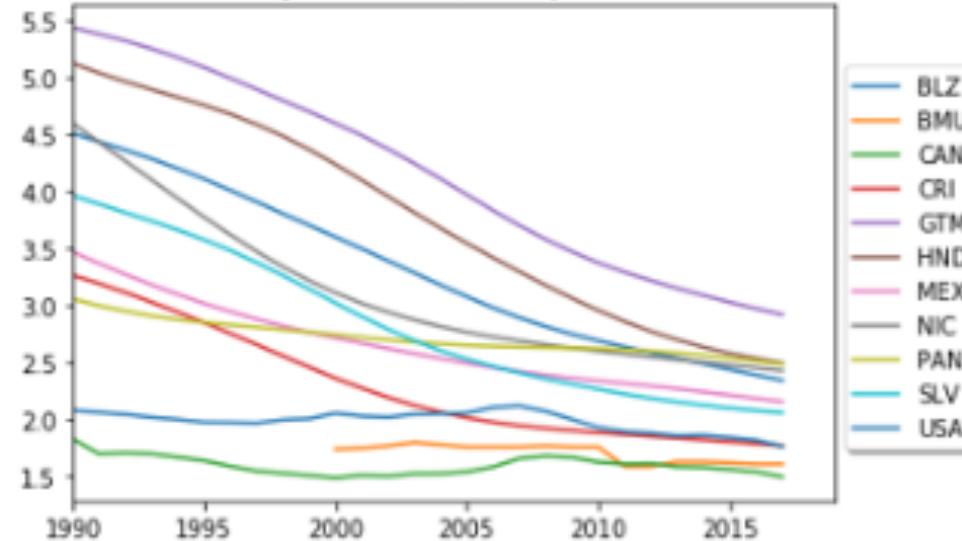


METHODOLOGY



ANOMALIES

Fertility rate, total (births per woman)



INFERENCES

Fertility rate, total (births per woman)



FERTILITY IN USA

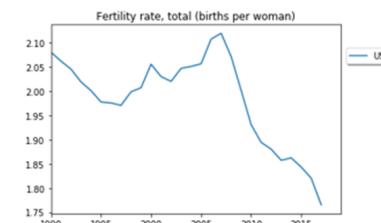
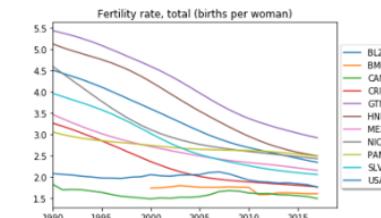
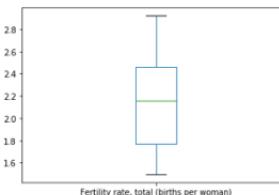


PECULIARITY

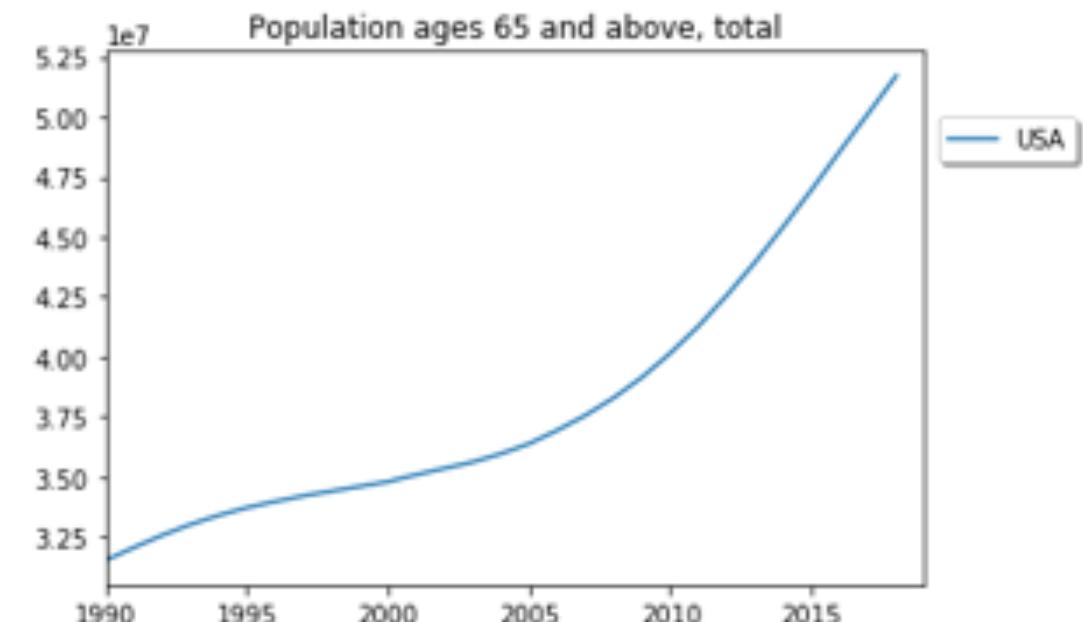
ANALYSIS

BACKGROUND

METHODOLOGY



ANOMALIES



“ The U.S. Fertility Rate Is Down, Yet More Women and Mothers ”

“ Birth rate in the U.S. falls to lowest levels in 32 years, CDC says. ”

MILITARY VS EDUCATION

PECULIARITY



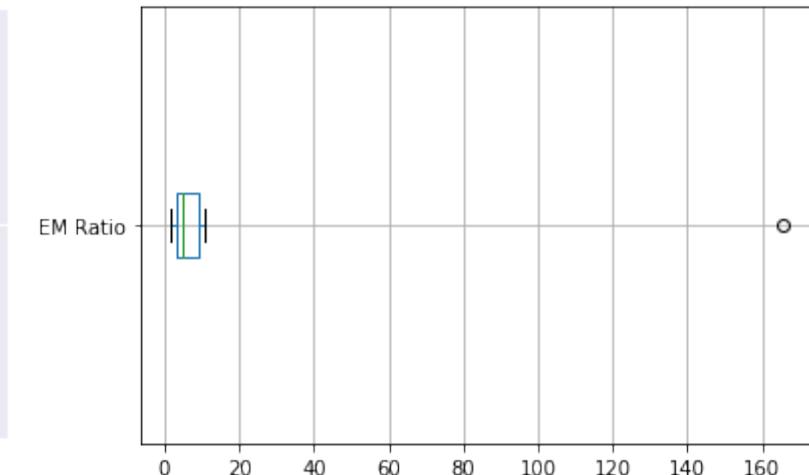
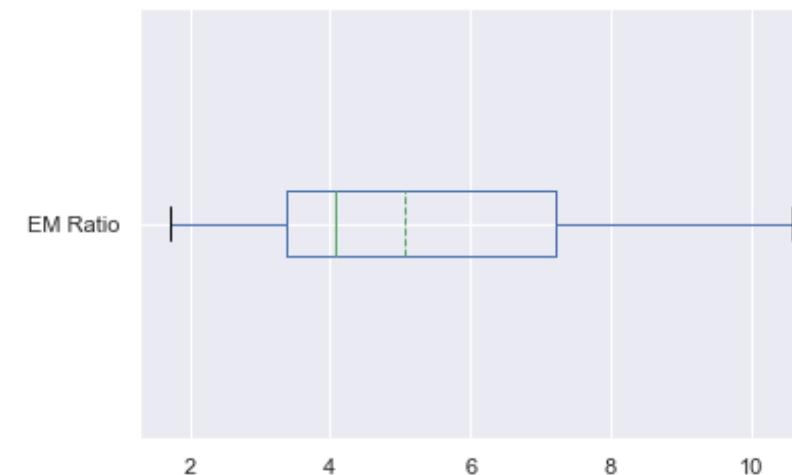
METHODOLOGY

ANOMALIES

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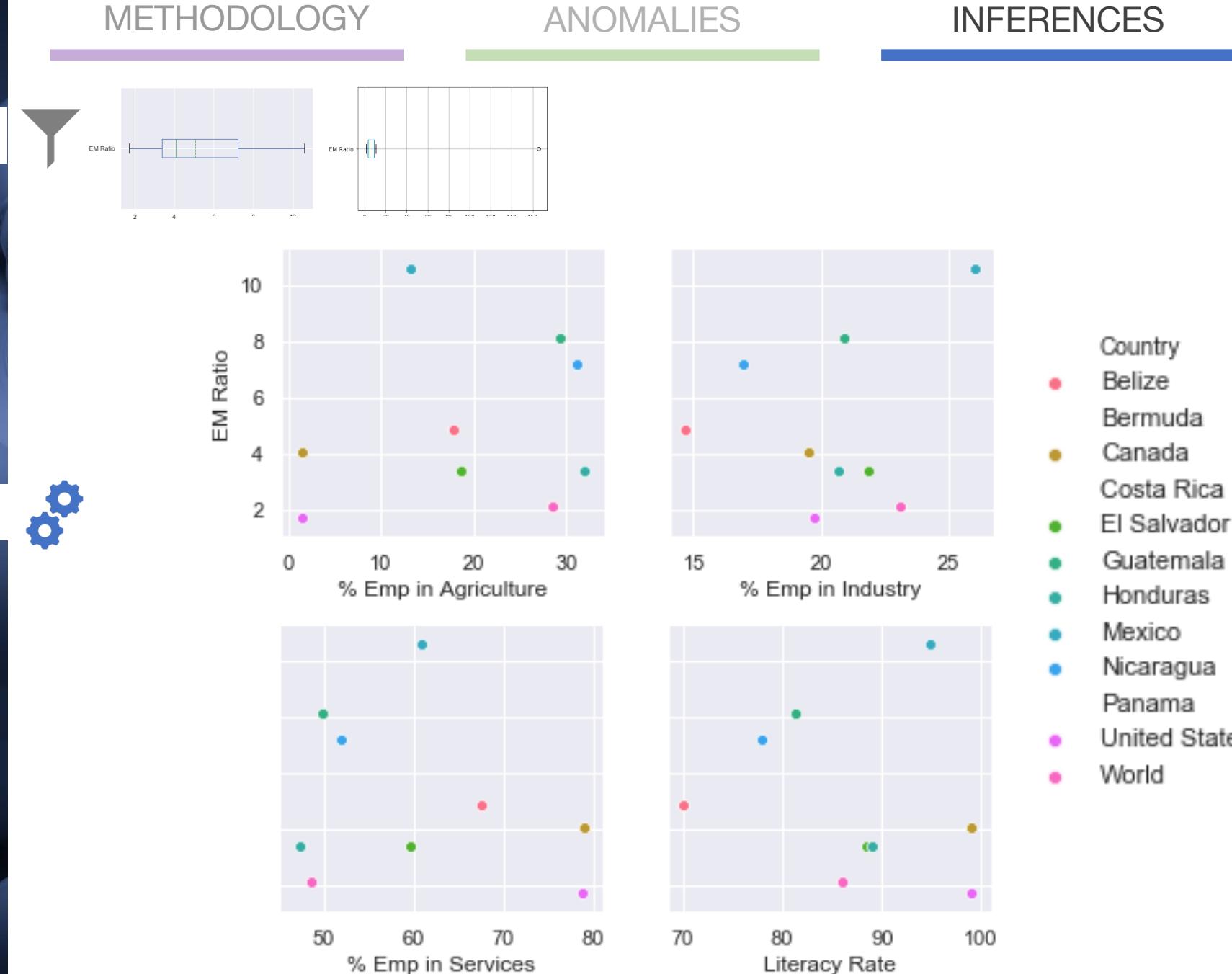
	Country	% Emp in Agriculture	% Emp in Industry	% Emp in Services	Literacy Rate	GDP	Military expenditure (% of GDP)	Population	Education Expense % GDP	EM Ratio
19	Belize	17.733000	14.657000	67.609001	70.030000	1.862615e+09	1.32302	3.757690e+05	6.430000	4.860076
21	Bermuda	Nan	Nan	Nan	32.900000	Nan	Nan	6.387400e+04	1.700000	Nan
34	Canada	1.518000	19.528000	78.955002	99.000000	1.646867e+12	1.2934	3.654027e+07	5.281000	4.083052
45	Costa Rica	12.580000	18.450001	68.970001	97.400000	5.817455e+10	0	4.949954e+06	7.180000	Nan
59	El Salvador	18.575001	21.886000	59.540001	88.482712	2.492797e+10	1.05179	6.388122e+06	3.550000	3.375213
80	Guatemala	29.316000	20.898001	49.785999	81.300000	7.562010e+10	0.363192	1.691494e+07	2.960000	8.149957
85	Honduras	31.985001	20.683001	47.332001	89.000000	2.294018e+10	1.74381	9.429013e+06	5.870000	3.366196
128	Mexico	13.118000	26.013000	60.869999	94.900000	1.158071e+12	0.502372	1.247773e+08	5.313000	10.575824
144	Nicaragua	31.091000	16.938999	51.970001	78.000000	1.384359e+10	0.623063	6.384855e+06	4.490000	7.206331
151	Panama	14.494000	18.549000	66.956001	94.100000	6.228380e+10	0.0192956	4.106771e+06	3.190000	Nan
205	United States	1.435000	19.729000	78.835999	99.000000	1.948539e+13	3.10901	3.251471e+08	5.381000	1.730776
213	World	28.409310	23.074889	48.515787	86.000000	8.089134e+13	2.16144	7.510990e+09	4.554135	2.106993



MILITARY VS EDUCATION

PECULIARITY

ANALYSIS



MILITARY VS EDUCATION

PECULIARITY

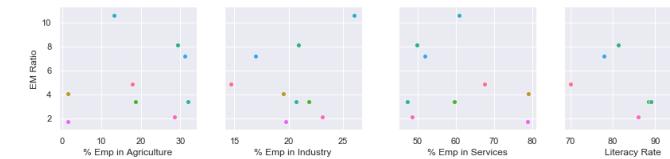
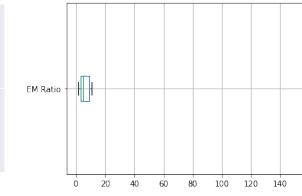
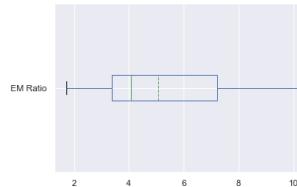
ANALYSIS

BACKGROUND

METHODOLOGY

ANOMALIES

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“ Why getting rid of Costa Rica’s army
70 years ago has been such a success ”



“ In fact, if the whole world stopped spending money on the military for just 8 days, we could have the \$39 billion needed to provide 12 years of free, quality education to every child on the planet.” – Malala Yusufzai (2015)



“NOW GO AWAY, OR I SHALL TAUNT YOU A SECOND TIME!”

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