

Description of sample size and population

The population of my experiment was all of the countries in the world. The sample size is only 143 countries in order to keep the data clear from bias and outliers. Countries currently in wartime were removed from the data set as well as countries with extremely high expenditures in the trillions.

Original Data

Country % impoverished expenditures

Zimbabwe	72.3	3.84
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Sierra Leone	70.2	0.90928
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Suriname	70	0.9397
Guinea-Bissau	67	0.2635
Sao Tome and Principe	66.2	0.1124

Swaziland	63	3.83
Zambia	60.5	6.357
Guatemala	59.3	9.156
Haiti	58.5	1.65
Lesotho	57	1.255
Togo	55.1	1.203
Liberia	54.1	0.6938

Malawi	50.7	1.567
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Eritrea	50	2.601
Gambia, The	48.4	0.339
Guinea	47	1.748
Chad	46.7	1.481
Senegal	46.7	4.9

Sudan	46.5	13.36
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Cote d'Ivoire	46.3	9.464
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Mozambique	46.1	4.054
Niger	45.4	2.171
Comoros	44.8	0.2073
Equatorial Guinea	44	2.523
Kenya	43.4	19.24
East Timor	41.8	2.4
Belize	41	0.572
Angola	40.5	45.44
Burkina Faso	40.1	3.655
Seychelles	39.3	0.6007
Rwanda	39.1	2.337
Bolivia	38.6	18.02
Grenada	38	0.2523
Papua New Guinea	37	4.591
Benin	36.2	2.152

Greece	36	96.35
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Guyana	35	1.164
El Salvador	34.9	6.517
Gabon	34.3	2.914
Argentina	32.2	158.6
Kyrgyzstan	32.1	2.409
Armenia	32	3.192
Bangladesh	31.5	33.5
Tajikistan	31.5	2.374
Fiji	31	1.648
Mauritania	31	1.396
Dominican	30.5	13.62

Republic		
Botswana	30.3	5.478
Cameroon	30	6.556
Cape Verde	30	0.5467
Gaza Strip	30	1.278
Kosovo	30	2.203
Italy	29.9	948.1
Honduras	29.6	5.283
Nicaragua	29.6	4.15
Ethiopia	29.6	13.79

Dominica	29	0.2604
Virgin Islands	28.9	1.518
Namibia	28.7	5

Colombia	27.8	91.73
Micronesia, Federated States of	26.7	0.1921
Tuvalu	26.3	0.03246
Ecuador	25.6	38.08
Burma	25.6	11.23
Latvia	25.5	11.53
Nepal	25.2	5.945

Ghana	24.2	12.36
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Tonga	24	0.1812
Guam	23	1.299
Djibouti	23	0.8992
Anguilla	23	0.08032
Algeria	23	70.2
Panama	23	13.44

Tanzania	22.8	8.818
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Peru	22.7	64.81
Romania	22.4	68.13
Paraguay	22.2	5.968
Lithuania	22.2	15.7
Laos	22	4.038

Bulgaria	22	19.35
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Costa Rica	21.7	11.92
Mongolia	21.6	3.681
Philippines	21.6	56.02
Macedonia	21.5	3.605
Estonia	21.3	10.44
Spain	21.1	539
Moldova	20.8	2.947
Trinidad and Tobago	20	7.446
Uganda	19.7	4.928
Venezuela	19.7	189.7
French Polynesia	19.7	1.833
Hong Kong	19.6	61.64
Croatia	19.5	24.83
United Arab Emirates	19.5	111.1
Portugal	19	100
Iran	18.7	84.45

Cambodia	17.7	4.354
Poland	17.6	216.2
Bosnia and Herzegovina	17.2	7.607
New Caledonia	17	1.993
Germany	16.7	1619
South Africa	16.6	108.3

Jamaica	16.5	4.314
Malta	16.3	4.583
Greenland	16.2	1.594

Maldives	16	1.643
Tunisia	15.5	12.21

Belgium	15.1	258.6
Morocco	15	26.75
Sweden	15	264.4

Hungary	14.9	64.7
Chile	14.4	65.38
Albania	14.3	3.874
Slovenia	14.3	21.06
Jordan	14.2	11.51

Uzbekistan	14	15.08
Denmark	13.4	168.9
Bhutan	13.3	0.7374
Russia	13.3	281.4
Korea, South	12.5	335.8
Slovakia	12.3	38.79
Vietnam	11.3	69.37
Bermuda	11	1.176
Indonesia	10.9	159.6
Czech Republic	9.7	200
Uruguay	9.7	19.72
Canada	9.4	665.7
Bahamas, The	9.3	2.46
Georgia	9.2	4.925
Serbia	8.9	17.59
Netherlands	8.8	352.4
Montenegro	8.6	2.05

Ireland	8.2	87.19
Mauritius	8	3.038
Thailand	7.2	85.12
Sri Lanka	6.7	16.88
Switzerland	6.6	234.4
Belarus	5.7	20.57
Azerbaijan	4.9	10.22
Faroe Islands	4.2	0.8838
Austria	4	204.6
Malaysia	3.8	60.63
Brazil	3.7	756.3

Kazakhstan	2.7	38.3
Taiwan	1.5	92.03
Turkmenistan	0.2	6.714

Summary of the Counts

The data is collected from 143 countries and has both their current poverty rate and their expenditure as taken from the end of 2017.

Cited Sources

Central Intelligence Agency, Central Intelligence Agency, 1 Feb. 2018,

www.cia.gov/library/publications/resources/the-world-factbook/fields/224.html.

“Country Comparison > Population below Poverty Line.” *Zambia GDP - per Capita (PPP) - Economy*, www.indexmundi.com/g/r.aspx?v=69.

Descriptive Statistics

▸ Descriptive Statistics: % of the Nation impoverished, ... ditures (in bill)

Statistics

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3
% of the Nation impoverished	145	0	26.64	1.34	16.15	0.20	14.95	23.00	35.50
National Expenditures (in bill)	145	0	56.4	11.2	135.1	0.0	2.0	6.4	42.1

Variable	Maximum
% of the Nation impoverished	72.30
National Expenditures (in bill)	948.1

Regression Analysis

Regression Analysis: National Expenditures (in bill) ... on impoverished

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	1	191256	191256	11.22	0.001
% of the Nation impoverished	1	191256	191256	11.22	0.001
Error	143	2438447	17052		
Lack-of-Fit	120	2321458	19345	3.80	0.000
Pure Error	23	116989	5086		
Total	144	2629702			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
130.584	7.27%	6.62%	4.97%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	116.5	21.0	5.56	0.000	
% of the Nation impoverished	-2.257	0.674	-3.35	0.001	1.00

Regression Equation

National Expenditures (in bill) = 116.5 - 2.257 % of the Nation impoverished

Fits and Diagnostics for Unusual Observations

Obs	National Expenditures (in bill)	Fit	Resid	Std Resid	
1	3.8	-46.6	50.5	0.40	X
2	0.9	-41.9	42.8	0.34	X
3	0.9	-41.5	42.4	0.33	X
4	0.3	-34.7	34.9	0.27	X
5	0.1	-32.9	33.0	0.26	X
6	3.8	-25.7	29.5	0.23	X
53	948.1	49.1	899.0	6.91	R
86	539.0	68.9	470.1	3.61	R
126	665.7	95.3	570.4	4.40	R
142	756.3	108.2	648.1	5.02	R

R Large residual

X Unusual X

Method of Collection

I collected my data by searching the internet first for a list of all the countries in the world and the percentage of their population that was impoverished. After I found that, I searched again for a list of the expenditures for every country in the world for last year. After I collected both

pieces of data, I checked the world crisis center to see which countries were currently in a wartime scenario in order to remove them from my list. Finally, I removed all of the outliers from my data set to remove most of my bias.

Summary of the Data

The data shows that there is a weak correlation between expenditure and poverty rates, but there is still a correlation. As poverty levels increase, expenditures typically decrease.