**Fig. 1**. Average Temperatures Sample Nations and Global Land Surface anomalies



**Table 1.** Climate Change and Homicide Rates, ARFIMA-MLM Results

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Independent Variable | | All Nations | | Africa | | Latin America | | Asia | | Former Communist | | Europe | North America/ AUS/NZ |
| *ARFIMA-MLM, Fixed-Effects, coefficients and standard error, 1,2* | | | | | | | | | | | | | |
| Temperature | | .0556690 \*\*\*  (.0115161) | | .164906\*  (.087247) | | .043037 (.043634) | | .0182932 (.0307079) | | -.0034511 (.0142016) | | .018192 (.014372) | .028349 \*\*  (.008588) |
| Male Youth Unemployment | | .0028597  (.0020918) | | .015748 + (.011231) | | .010462 (.009186) | | -.0139384 (.0130307) | | -.0029615+ (.0021858) | | .004603\* (.002438) | .009164 (.009525) |
| Price Index | | .0041200 \*\*\*  (.0012600) | | .015305\*\*\* (.004503) | | -.004700\* (.002695) | | .0004296 (.0027810) | | .0029822 + (.0020618) | | .016357\*  .007166 | -.013542 (.014676) |
| Infant Mortality | | .0003852  (.0087558) | | -.130344\* (.074800) | | .039765 (.032914) | | -.0214064 + (.0137363) | | .0264940 + (.0191649) | | -.220479\*\*\* (.064816) | 1.077669 \*\*\* (.131440) |
| Migrant Percentage | | -.0037755  (0094936) | | -0.098223 (.189860 ) | | .012336 (.040895) | | -.0878627\*\*\* .0211672 | | .0466892\*\*  (.0185282) | | -.028868\*\* (.010212) | -.022300 (.018578) |
| Battle Deaths | | .0022279  (.0058567 ) | | .176878\* (.073922) | | .264091\*\*\* (.067685) | | .0012126 (.0050010) | | -.0008816 (.0382397) | | n/a 3 | .249295 (1.609267) |
| Intercept | | .0491643  (.3423395) | | .143407 (.952715) | | -.064079 (.374859) | | .0529795 (.4246893) | | .0276923 (.2097005) | | -.127452 (.108843) | -.155593 (.120826) |
| *ARFIMA-MLM, Random Effects, variance and standard deviation* | | | | | | | | | | | | | |
| Nation intercept | 1.52925  (1.52925) | | 5.12132  (2.2630) | | .63771  (.7986) | | 1.34158  (1.1583) | | .44501  (.667107) | | .096784 (.31110) | | .001303  (.0361) |
| Year intercept | 0.08904  (0.2984) | | .03181  (.1783) | | .08256  (.2873) | | .01565  (.1251) | | .0003638  (.001907) | | .003355 (.05792) | | .011538  (.1074) |
|  |  | |  | |  | |  | |  | |  | |  |
| N | 673 (57 nations, 13 Years) | | 62 (6 Nations, 13 Years) | | 146 (12 Nations, 13 Years) | | 99 (9 Nations, 13 Years) | | 131 (11 Nations, 13 Years) | | 183 (15 Nations, 13 Years) | | 52 (4 Nations, 13 Years) |

1. Fixed effects for each year in the dataset are omitted.

2. +=p<.1, \*=p<.05, \*\*=p<.01, and \*\*\*=p<.001. All p significance levels based on single-tailed t-values.

3. No battle casualties were recorded in included European nations during study period, hence no estimate could be created

**Table 2.** Proportionate Effects of Climate Change on Homicides

|  |  |  |  |
| --- | --- | --- | --- |
| **Predicted Effects of Temperature** | Raw Fixed-Effect Coefficient | % Homicide Rate Change for a One Degree Increase in Temperature | % Homicide Rate Change for one Standard Deviation Increase in Temperature |
| *All Nations \** | .056 | 5.92% | 57.75% |
|  |  |  |  |
| *Africa \** | .165 | 17.94% | 58.46% |
| *North America/ AUS/NZ \** | .028 | 2.84% | 15.54% |
| *Asia* | .018 | 1.82% | 16.60% |
| *Europe* | .018 | 1.82% | 5.97% |
| *Former USSR* | -.003 | -.300% | -1.33% |
| *Latin America* | .043 | 4.39% | 17.40% |

\* denotes statistically significant coefficient.