# Prediction of Adjusted Net National Income Per Capita of Countries

# Introduction to the Research Question

The purpose of this study was to identify the best predictors for Adjusted Net National Income Per Capita of countries from multiple World Bank development indicators such as Exports of Goods and Services, Food Production Index, Foreign Direct Investment- Net Inflows, Forest Area, Gdp at Market Prices, and Gdp Growth

As someone who has had a keen interest in the development of countries and the work of the World Bank in helping the development of countries, I will like to find out about the best development factors that will lead to an increase or decrease in the Adjusted Net National Income Per Capita of Countries.

Such knowledge will enable countries, governments and stakeholders to make informed decisions and focus on the factors that will help increase their Adjusted Net National Income Per Capita without wasting much time and resources on indicators that do not count much. This, will in effect, help drive forward the development of each country.

# Methods

## Sample

The sample included N=248 countries and regions of the world for the years 2012 and 2013. The sample is made up of national, regional and global estimates. I am only looking at the 2012 data for this sample data. I will also be looking at all the 86 variables in the World Bank data for 2012 which will help predict the Adjusted Net National Income Per Capita of countries for that year – 2012 and also help make future predictions of subsequent years, such as the year, 2013

## Measures

The Adjusted Net National Income Per Capita ,(Current Us$), quantitative response variable, measures the Gross National Income (GNI) minus consumption of fixed capital and natural resources depletion.

Predictors used in the algorithm are all quantitative and they are:

| Predictor | Meaning |
|---|---|
| x100_2012 | Death Rate, Crude (Per 1,000 People) |
| x121_2012 | Exports Of Goods And Services (% Of Gdp) |
| x125_2012 | Fertility Rate, Total (Births Per Woman) |
| x126_2012 | Fixed Broadband Subscriptions (Per 100 People) |
| x129_2012 | Food Production Index (2004-2006 = 100) |
| x12_2012 | Adjusted Savings: Carbon Dioxide Damage (% Of Gni) |
| x131_2012 | Foreign Direct Investment, Net Inflows (% Of Gdp) |
| x132_2012 | Foreign Direct Investment, Net Inflows (Bop, Current Us$) |
| x134_2012 | Forest Area (% Of Land Area) |
| x139_2012 | Gdp At Market Prices (Current Us$) |
| x140_2012 | Gdp Growth (Annual %) |
| x142_2012 | Gdp Per Capita (Current Us$) |
| x143_2012 | Gdp Per Capita Growth (Annual %) |
| x146_2012 | Gross Domestic Savings (% Of Gdp) |

| | |
|---|---|
| x149_2012 | Health Expenditure Per Capita (Current Us$) |
| x14_2012 | Adjusted Savings: Consumption Of Fixed Capital (% Of Gni) |
| x150_2012 | Health Expenditure, Total (% Of Gdp) |
| x153_2012 | Household Final Consumption Expenditure, Etc. (% Of Gdp) |
| x154_2012 | Imports Of Goods And Services (% Of Gdp) |
| x155_2012 | Improved Sanitation Facilities (% Of Population With Access) |
| x156_2012 | Improved Water Source (% Of Population With Access) |
| x157_2012 | Incidence Of Tuberculosis (Per 100,000 People) |
| x15_2012 | Adjusted Savings: Consumption Of Fixed Capital (Current Us$) |
| x161_2012 | Industry, Value Added (% Of Gdp) |
| x162_2012 | Inflation, Consumer Prices (Annual %) |
| x163_2012 | Intentional Homicides (Per 100,000 People) |
| x167_2012 | Internet Users (Per 100 People) |
| x169_2012 | Labor Force, Female (% Of Total Labor Force) |
| x16_2012 | Adjusted Savings: Education Expenditure (% Of Gni) |
| x171_2012 | Life Expectancy At Birth, Female (Years) |
| x172_2012 | Life Expectancy At Birth, Male (Years) |
| x173_2012 | Life Expectancy At Birth, Total (Years) |
| x174_2012 | Lifetime Risk Of Maternal Death (%) |
| x179_2012 | Manufacturing, Value Added (% Of Gdp) |
| x187_2012 | Mobile Cellular Subscriptions (Per 100 People) |
| x18_2012 | Adjusted Savings: Energy Depletion (% Of Gni) |
| x190_2012 | Mortality Rate, Infant (Per 1,000 Live Births) |
| x191_2012 | Mortality Rate, Neonatal (Per 1,000 Live Births) |
| x192_2012 | Mortality Rate, Under-5 (Per 1,000) |

| | |
|---|---|
| x195_2012 | Net Migration |
| x19_2012 | Adjusted Savings: Energy Depletion (Current Us$) |
| x1_2012 | Access To Electricity (% Of Population) |
| x204_2012 | Out-Of-Pocket Health Expenditure (% Of Total Expenditure On Health) |
| x25_2012 | Adolescent Fertility Rate (Births Per 1,000 Women Ages 15-19) |
| x261_2012 | Secure Internet Servers (Per 1 Million People) |
| x268_2012 | Surface Area (Sq. Km) |
| x274_2012 | Survival To Age 65, Female (% Of Cohort) |
| x275_2012 | Survival To Age 65, Male (% Of Cohort) |
| x277_2012 | Terrestrial And Marine Protected Areas (% Of Total Territorial Area) |
| x283_2012 | Urban Population (% Of Total) |
| x284_2012 | Urban Population Growth (Annual %) |
| x29_2012 | Age Dependency Ratio (% Of Working-Age Population) |
| x2_2012 | Access To Non-Solid Fuel (% Of Population) |
| x31_2012 | Agricultural Land (% Of Land Area) |
| x35_2012 | Agriculture, Value Added (% Of Gdp) |
| x36_2012 | Agriculture, Value Added (Annual % Growth) |
| x37_2012 | Air Transport, Passengers Carried |
| x38_2012 | Air Transport, Registered Carrier Departures Worldwide |
| x45_2012 | Arable Land (% Of Land Area) |
| x47_2012 | Armed Forces Personnel (% Of Total Labor Force) |
| x205_2012 | Percentage Of Students In Primary Education Who Are Female (%) |
| x211_2012 | Personal Remittances, Paid (Current Us$) |
| x212_2012 | Personal Remittances, Received (% Of Gdp) |
| x213_2012 | Personal Remittances, Received (Current Us$) |

| | |
|---|---|
| x218_2012 | Population Ages 65 And Above (% Of Total) |
| x219_2012 | Population Density (People Per Sq. Km Of Land Area) |
| x21_2012 | Adjusted Savings: Natural Resources Depletion (% Of Gni) |
| x220_2012 | Population Growth (Annual %) |
| x221_2012 | Population, Ages 0-14 (% Of Total) |
| x222_2012 | Population, Ages 15-64 (% Of Total) |
| x223_2012 | Population, Female (% Of Total) |
| x242_2012 | Private Credit Bureau Coverage (% Of Adults) |
| x243_2012 | Proportion Of Seats Held By Women In National Parliaments (%) |
| x244_2012 | Public Credit Registry Coverage (% Of Adults) |
| x253_2012 | Renewable Electricity Output (% Of Total Electricity Output) |
| x255_2012 | Renewable Internal Freshwater Resources Per Capita (Cubic Meters) |
| x258_2012 | Rural Population (% Of Total Population) |
| x48_2012 | Armed Forces Personnel, Total |
| x49_2012 | Automated Teller Machines (Atms) (Per 100,000 Adults) |
| x58_2012 | Birth Rate, Crude (Per 1,000 People) |
| x67_2012 | Cause Of Death, By Communicable Diseases And Maternal, Prenatal And Nutrition Conditions (% Of Total) |
| x68_2012 | Cause Of Death, By Injury (% Of Total) |
| x69_2012 | Cause Of Death, By Non-Communicable Diseases (% Of Total) |
| x86_2012 | Commercial Bank Branches (Per 100,000 Adults) |
| x9_2012 | Adjusted Net National Income (Current Us$) |

**Analyses**

The distributions for the predictors and the Adjusted Net National Income Per Capita ,(Current Us$), response variable were evaluated by calculating the mean, standard deviation and minimum and maximum values for the quantitative predictor variables. This is because all the predictors are quantitative.

Scatter plot was also examined, and Pearson correlation was used to test bivariate associations between individual quantitative predictors and the Adjusted Net National Income Per Capita ,(Current Us$), response variable.

Lasso regression with the least angle regression selection algorithm was used to identify the subset of variables that best predicted Adjusted Net National Income Per Capita ,(Current Us$). The lasso regression model was estimated on a training data set consisting of a random sample of 60% of the batches (N=148.8), and a test data set included the other 40% of the batches (N=99.2). All predictor variables were standardized to have a mean=0 and standard deviation=1 prior to conducting the lasso regression analysis. Cross validation was performed using k-fold cross validation specifying 10 folds. The change in the cross validation mean squared error rate at each step was used to identify the best subset of predictor variables. Predictive accuracy was assessed by determining the mean squared error rate of the training data prediction algorithm when applied to observations in the test data set

Results

The data included a lot of predictor variables for the 2012 year; a total of 85 predictor variables.

Therefore, I first of all, I conducted a Lasso regression analyses to only get the predictor variables that are relevant in predicting **The Adjusted Net National Income Per Capita ,(Current Us$)** response variable. As a result 74 of the variables were shrunk to zero (0) hence not retained in the model. And 11 of them were retained. The retained 11 are

I. GDP PER CAPITA (CURRENT US$),
II. HEALTH EXPENDITURE PER CAPITA (CURRENT US$),
III. SECURE INTERNET SERVERS (PER 1 MILLION PEOPLE),
IV. FIXED BROADBAND SUBSCRIPTIONS (PER 100 PEOPLE),
V. ADJUSTED NET NATIONAL INCOME (CURRENT US$),
VI. SURVIVAL TO AGE 65, MALE (% OF COHORT),
VII. POPULATION AGES 65 AND ABOVE (% OF TOTAL),
VIII. ADJUSTED SAVINGS: NATURAL RESOURCES DEPLETION (% OF GNI),
IX. RURAL POPULATION (% OF TOTAL POPULATION) ,
X. ADJUSTED SAVINGS: CARBON DIOXIDE DAMAGE (% OF GNI),
XI. EXPORTS OF GOODS AND SERVICES (% OF GDP) )

Fig1 shows Table1 which gives descriptive Statistics for Data Analytic Variables which were retained in the model.

Fig1:

**Table 1. Descriptive Statistics for Data Analytic Variables**

| ANALYSIS VARIABLE | N | MEAN | STANDARD DEVIATION | MINIMUM | MAXIMUM |
|---|---|---|---|---|---|
| x21_2012 - (ADJUSTED SAVINGS: NATURAL RESOURCES DEPLETION (% OF GNI) ) | 55 | 4.02 | 5.32 | 0.00 | 21.31 |
| x261_2012 - (SECURE INTERNET SERVERS (PER 1 MILLION PEOPLE)) | 55 | 414.44 | 714.58 | 0.28 | 3133.61 |
| x142_2012 - (GDP PER CAPITA (CURRENT US$) ) | 55 | 17624.47 | 19493.07 | 270.09 | 83208.69 |
| x121_2012 - (EXPORTS OF GOODS AND SERVICES (% OF GDP) ) | 55 | 44.37 | 21.40 | 5.52 | 107.20 |
| x126_2012 - (FIXED BROADBAND SUBSCRIPTIONS (PER 100 PEOPLE) ) | 55 | 14.06 | 12.74 | 0.01 | 40.17 |
| x218_2012 - (POPULATION AGES 65 AND ABOVE (% OF TOTAL) ) | 55 | 10.31 | 6.28 | 2.35 | 21.16 |
| x275_2012 - (SURVIVAL TO AGE 65, MALE (% OF COHORT) ) | 55 | 73.47 | 12.02 | 46.08 | 90.02 |
| x149_2012 - (HEALTH EXPENDITURE PER CAPITA (CURRENT US$) ) | 55 | 1567.58 | 2032.09 | 23.96 | 9070.51 |
| x9_2012 - (ADJUSTED NET NATIONAL INCOME (CURRENT US$) ) | 55 | 320914115286.35 | 626979714689.37 | 1110573363.00 | 2990000000000.00 |
| x12_2012 - (ADJUSTED SAVINGS: CARBON DIOXIDE DAMAGE (% OF GNI) ) | 55 | 0.44 | 0.33 | 0.05 | 1.88 |
| x258_2012 - (RURAL POPULATION (% OF TOTAL POPULATION) ) | 55 | 38.89 | 19.86 | 2.27 | 84.20 |
| x11_2012 - (ADJUSTED NET NATIONAL INCOME PER CAPITA (CURRENT US$) ) | 55 | 14137.21 | 15674.55 | 192.66 | 67688.51 |

The average Adjusted Net National Income Per Capita ,(Current Us$) was 14137.21 ( sd=15674.55). The predictor variable with the highest average was Adjusted Net National Income (Current Us$) with a

mean of 320914115286.35 (sd= 626979714689.37) followed by Gdp Per Capita (Current Us$) with a mean of 17624.47 (sd = 19493.07)

**Bivariate Analyses**

Scatter plots, Fig2 and Fig3, were generated to visualise the association between Adjusted Net National Income Per Capita ,(Current Us$) and the quantitative predictor variables and Pearson correlation "r" values were calculated for the associations.

Fig2 Association Between Quantitative Predictors and x11_2012 - Adjusted Net National Income Per Capita ,(Current Us$)- first 5

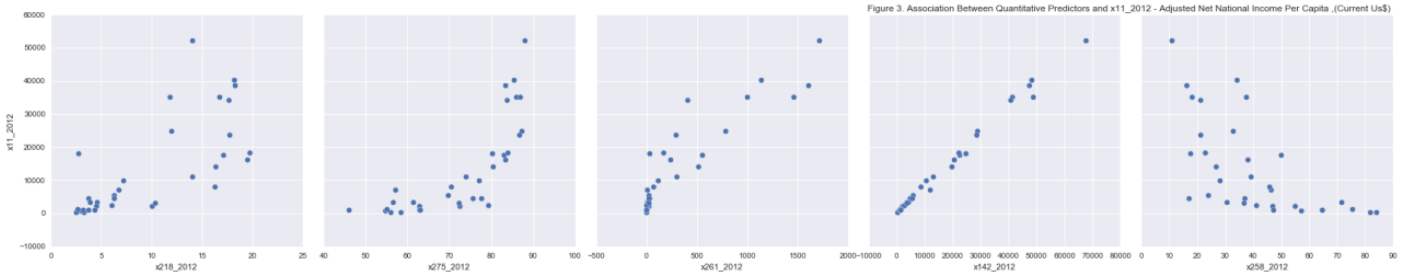
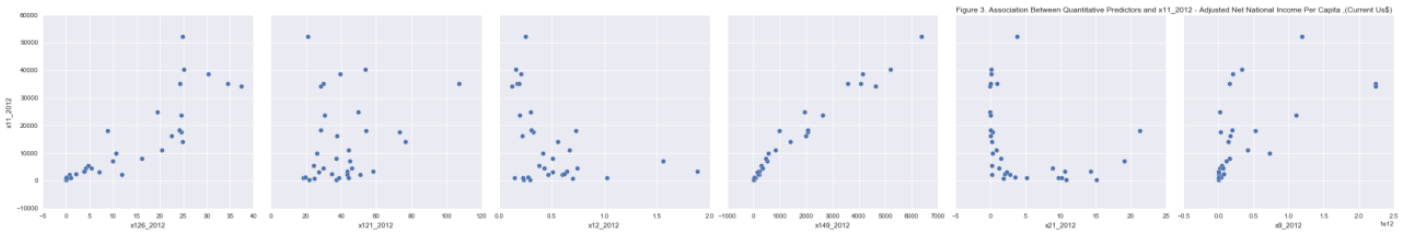



Fig 3 Association Between Quantitative Predictors and x11_2012 - Adjusted Net National Income Per Capita ,(Current Us$) – last 6




The Pearson correlation "r" values and the associated p-values revealed that **all** the retained variables were significantly associated with The Adjusted Net National Income Per Capita ,(Current Us$) as can be seen in the Table 2 below.

Table2

| Table 2: Pearson Correlation "r" value and relative p-values for the association between quantitative predictor values and The Adjusted Net National Income Per Capita ,(Current Us$) | | |
|---|---|---|
| **VARIABLE** | **PEARSON , r** | **p-value** |
| x261_2012 - (SECURE INTERNET SERVERS (PER 1 MILLION PEOPLE)) | 0.82 | 0.0001 |
| x12_2012 - (ADJUSTED SAVINGS: CARBON DIOXIDE DAMAGE (% OF GNI) ) | -0.42 | 0.0013 |
| x121_2012 - (EXPORTS OF GOODS AND SERVICES (% OF GDP) ) | 0.33 | 0.0145 |
| x149_2012 - (HEALTH EXPENDITURE PER CAPITA (CURRENT US$) ) | 0.99 | 0.0001 |
| x126_2012 - (FIXED BROADBAND SUBSCRIPTIONS (PER 100 PEOPLE) ) | 0.87 | 0.0001 |
| x258_2012 - (RURAL POPULATION (% OF TOTAL POPULATION) ) | -0.63 | 0.0001 |
| x9_2012 - (ADJUSTED NET NATIONAL INCOME (CURRENT US$) ) | 0.57 | 0.0001 |
| x275_2012 - (SURVIVAL TO AGE 65, MALE (% OF COHORT) ) | 0.74 | 0.0001 |
| x142_2012 - (GDP PER CAPITA (CURRENT US$) ) | 1.00 | 0.0001 |
| x218_2012 - (POPULATION AGES 65 AND ABOVE (% OF TOTAL) ) | 0.71 | 0.0001 |
| x21_2012 - (ADJUSTED SAVINGS: NATURAL RESOURCES DEPLETION (% OF GNI) ) | -0.40 | 0.0026 |

From the Scatter Plots and the Pearson “r” values it can be seen that **GDP PER CAPITA (CURRENT US$) (r = 1.00, p= .0001)** is the most strongest relation to the response variable**, Adjusted Net National Income Per Capita ,(Current Us$)** followed by **HEALTH EXPENDITURE PER CAPITA (CURRENT US$) (r= 0.99, p= .0001).**

**Multivariable analyses**

**Table 3** shows the retained predictor variables and their respective model co-efficients.

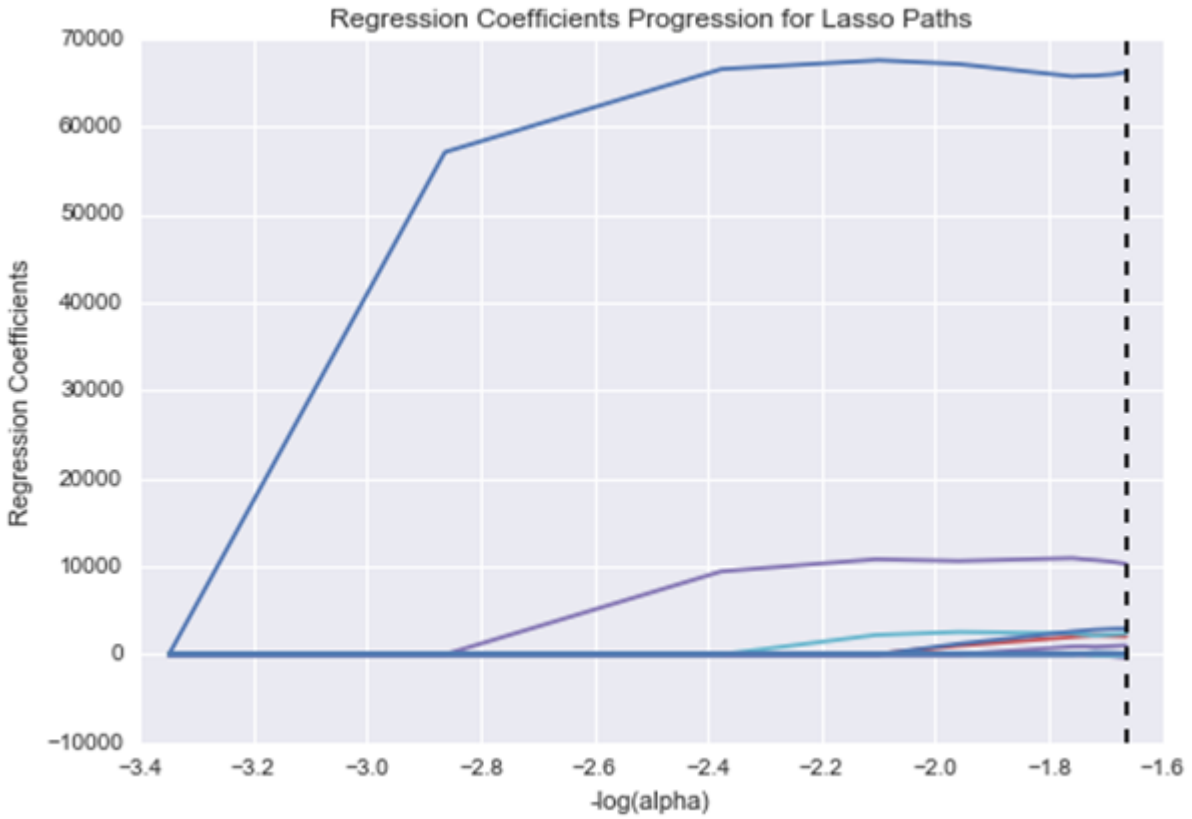
Table 3

**Tabel 3: Model Co-efficients of Retained Predictors**

| Predictor | Co-efficient |
|---|---|
| x142_2012 - (GDP PER CAPITA (CURRENT US$) ) | 11949.37828 |
| x149_2012 - (HEALTH EXPENDITURE PER CAPITA (CURRENT US$) ) | 1996.271328 |
| x261_2012 - (SECURE INTERNET SERVERS (PER 1 MILLION PEOPLE)) | 711.9843858 |
| x126_2012 - (FIXED BROADBAND SUBSCRIPTIONS (PER 100 PEOPLE) ) | 431.2711585 |
| x9_2012 - (ADJUSTED NET NATIONAL INCOME (CURRENT US$) ) | 353.5999677 |
| x275_2012 - (SURVIVAL TO AGE 65, MALE (% OF COHORT) ) | 164.2523971 |
| x218_2012 - (POPULATION AGES 65 AND ABOVE (% OF TOTAL) ) | 18.70327262 |
| x21_2012 - (ADJUSTED SAVINGS: NATURAL RESOURCES DEPLETION (% OF GNI) ) | -9.633017391 |
| x258_2012 - (RURAL POPULATION (% OF TOTAL POPULATION) ) | -17.73558659 |
| x12_2012 - (ADJUSTED SAVINGS: CARBON DIOXIDE DAMAGE (% OF GNI) ) | -31.87655894 |
| x121_2012 - (EXPORTS OF GOODS AND SERVICES (% OF GDP) ) | -69.89047621 |

From the Table 3 and also Fig 4 below:

Fig 4



it can be seen that **GDP PER CAPITA (CURRENT US$)** is most strongly associated with **Adjusted Net National Income Per Capita ,(Current Us$)** and this is followed by **HEALTH EXPENDITURE PER CAPITA (CURRENT US$) .** This corroborates the -Pearson correlation "r" results. The **Adjusted Net National Income Per Capita ,(Current Us$)** increases when **GDP PER CAPITA (CURRENT US$)** increases**.** The response variable also increases when **HEALTH EXPENDITURE PER CAPITA (CURRENT US$)** increases**.** The reverse is true**.** These were the 2 strongest variables that is positively associated with The Adjusted Net National Income Per Capita ,(Current Us$)- the target variable. And increase in

- SECURE INTERNET SERVERS (PER 1 MILLION PEOPLE),
- FIXED BROADBAND SUBSCRIPTIONS (PER 100 PEOPLE),
- ADJUSTED NET NATIONAL INCOME (CURRENT US$),
- SURVIVAL TO AGE 65, MALE (% OF COHORT),
- POPULATION AGES 65 AND ABOVE (% OF TOTAL)

all result in an increase in the The Adjusted Net National Income Per Capita ,(Current Us$) and vice versa. Hence there is a positive relationship between the Adjusted Net National Income Per Capita ,(Current Us$) and the above stated 7 variables.

However, it can be seen that for

- ADJUSTED SAVINGS: NATURAL RESOURCES DEPLETION (% OF GNI),
- RURAL POPULATION (% OF TOTAL POPULATION),
- ADJUSTED SAVINGS: CARBON DIOXIDE DAMAGE (% OF GNI) and
- EXPORTS OF GOODS AND SERVICES (% OF GDP)

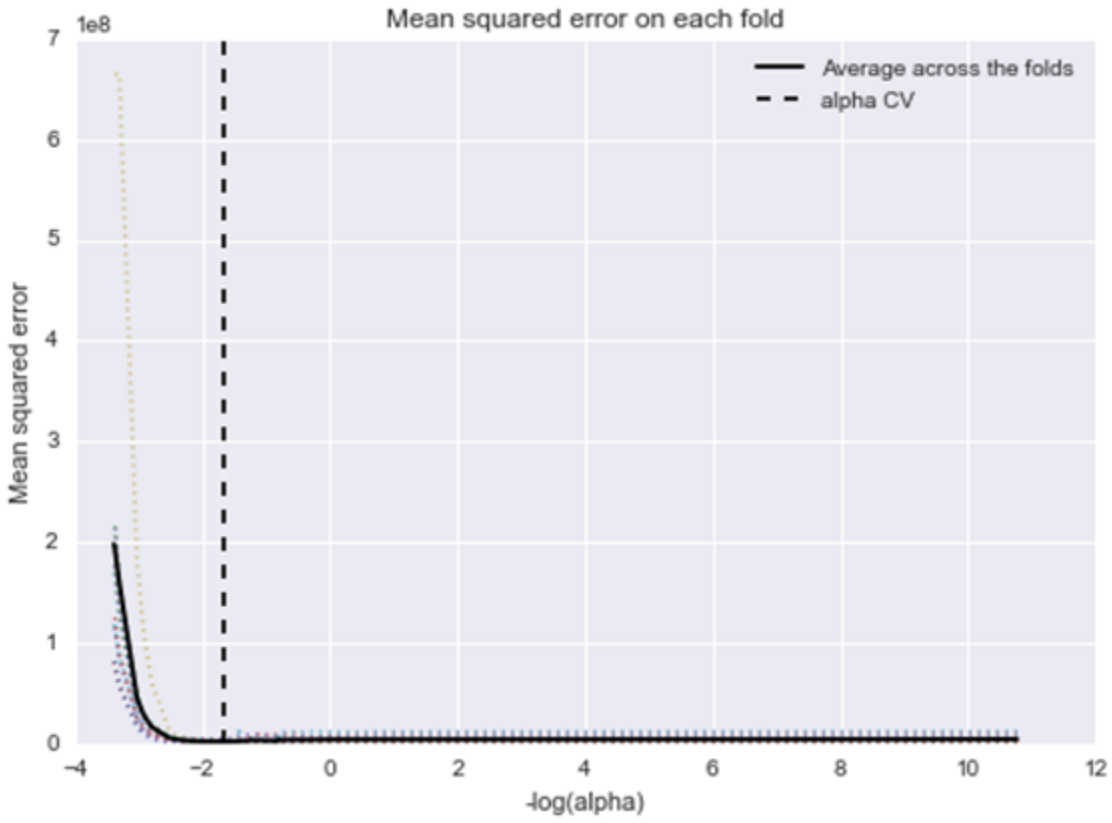
an increase in any of these results in a decrease in the Adjusted Net National Income Per Capita ,(Current Us$) and vice versa. Hence there is a negative relationship between these 4 predictor variables and **Adjusted Net National Income Per Capita ,(Current Us$)**

Together, these 11 predictors accounted for 99.5% (almost 100%) of the variance in **The Adjusted Net National Income Per Capita ,(Current Us$).** The mean squared error (MSE) for the test data (MSE= 1607604.93409) differed slightly from the MSE for the training data (MSE= 812548.990714).

| | |
|---|---|
| **MSE -TRAINING DATA** | 812548.990714 |
| **MSE -TEST DATA** | 1607604.93409 |
| | |
| **R-Square - TRAINING DATA** | 0.995739422921 |
| **R-Square - TEST DATA** | 0.99525790594 |

This suggests that predictive accuracy may decline a little bit when the lasso regression algorithm developed on the training data set is applied to predict future **Adjusted Net National Income Per Capita ,(Current Us$)** as seen in (Figure 5) below.

Fig5


Mean squared error on each fold
1e8
Average across the folds
alpha CV
Mean squared error
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0
1
2
3
4
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−4
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8
10
12

Conclusions/Limitations

**Brief Overview Of Key Findings And Implications**

This project used lasso regression analysis to identify the best predictors for Adjusted Net National Income Per Capita, (Current Us$) of countries from multiple World Bank development indicators in N= 248 countries and regions of the world for the year 2012 which is made up of national, regional and global estimates. The **Adjusted Net National Income Per Capita, (Current Us$)** for this period ranged from **192.66 (Current Us$)** to **67688.51 (Current Us$)** indicating that there was considerable variability in the **Adjusted Net National Income Per Capita, (Current Us$)** of countries and regions of the world for that year.

The prediction accuracy of the model was 0.995739422921 (96%) on the training dataset and 0.99525790594 (99.5%) when ran on the test dataset. Hence, the algorithm helped to identify the best predictors for Adjusted Net National Income Per Capita, (Current Us$) of countries for the year 2012 given the indicators available in this World Bank dataset.

There was significant increase in the MSE when the training set lasso regression algorithm was used to predict the Adjusted Net National Income Per Capita, (Current Us$) in the test data set. This suggests that the predictive accuracy of the algorithm may not be very stable for future datasets and hence has to be looked into further by using other analytic methods such as Multiple Regression.

The Pearson correlation "r" values and associated p-values revealed that **all** the retained variables were significantly associated with **Adjusted Net National Income Per Capita ,(Current Us$)** as can be seen in the Table 2 above. From the Scatter Plots and the Pearson "r" values and also from the multivariate analysis it can be seen that **GDP PER CAPITA (CURRENT US$)** is the most strongest relation to the **Adjusted Net National Income Per Capita ,(Current Us$)** followed by **HEALTH EXPENDITURE PER CAPITA (CURRENT US$).**

This means that countries and regions should spend more on increasing their GDP PER CAPITA (CURRENT US$) and also they should make more efforts and allocate more resources to HEALTH EXPENDITURE PER CAPITA (CURRENT US$) as the more these two variables increase, there is more likelihood of increase in their Adjusted Net National Income Per Capita ,(Current Us$). Although,

- SECURE INTERNET SERVERS (PER 1 MILLION PEOPLE),
- FIXED BROADBAND SUBSCRIPTIONS (PER 100 PEOPLE),

- ADJUSTED NET NATIONAL INCOME (CURRENT US$),
- SURVIVAL TO AGE 65, MALE (% OF COHORT),
- POPULATION AGES 65 AND ABOVE (% OF TOTAL)

all indicated a positive co-efficient ,meaning an increase in these variables are likely to lead to increase in the Adjusted Net National Income Per Capita ,(Current Us$) of countries and regions, due to general scarcity of resources globally, if there is only a few resources at the disposal of countries and regions, it will be advisable to allocate this scarce resources to **GDP PER CAPITA (CURRENT US$)** and **HEALTH EXPENDITURE PER CAPITA (CURRENT US$)**. This is because these were the 2 that indicated the most strongest positive association with **Adjusted Net National Income Per Capita ,(Current Us$) .**

On the other hand, it is advisable for countries and regions to reduce their

- ADJUSTED SAVINGS: NATURAL RESOURCES DEPLETION (% OF GNI),
- RURAL POPULATION (% OF TOTAL POPULATION),
- ADJUSTED SAVINGS: CARBON DIOXIDE DAMAGE (% OF GNI) and
- EXPORTS OF GOODS AND SERVICES (% OF GDP)

as a decrease in these variables have the tendency to increase their Adjusted Net National Income Per Capita ,(Current Us$) as these factors are negatively associated with the Adjusted Net National Income Per Capita ,(Current Us$) **.**

**Limitations**

Although the p-values associated with the Pearson correlation "r" values indicated that all the retained 11 variables were significantly associated with The Adjusted Net National Income Per Capita ,(Current Us$) , it can be seen that some of the associations were not linear hence the Pearson correlation could not capture the true relationship between those indicators and The Adjusted Net National Income Per Capita ,(Current Us$); therefore could not help in interpreting the Adjusted Net National Income Per Capita ,(Current Us$) variability given those non-linear associations**.**

In effect, though the model accurately predicts 99.5% (almost 100%) of the variance in The Adjusted Net National Income Per Capita ,(Current Us$), with all the indicators combined, a further examination of the variables using other analysis like Multiple Regression will further enlighten the true associations between these non-linear curves and The Adjusted Net National Income Per Capita ,(Current Us$).

What is more, as indicated in the codebook, this World Bank data set is a subset of data extracted from the primary World Bank collection of development indicators, which means there are other development indicators which were not provided and hence not captured in this analysis. It is possible that the indicators identified as important predictors of The Adjusted Net National Income Per Capita ,(Current Us$), among the set of predictors analyzed in this project are confounded by other factors not considered in this analysis,

As a result, these same factors may not emerge as important factors when other factors are taken into consideration. Therefore, future efforts to develop a solid predictive algorithm for The Adjusted Net National Income Per Capita, (Current Us$), should expand the algorithm by adding more development indicators to the statistical model, and testing the applicability of the algorithm for more other years.