Worldwide Gender Inequality in Education

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Abstract

The issue of gender inequality across the globe is a captivating issue, especially in regard to education. This paper examines the gender gap in education by dividing countries into developed and developing nations and attempts to uncover the relationship between expected female years of schooling and gross national income per capita. Other explanatory variables such including poverty headcount ratio, religious importance, literacy rate, infant mortality rate, and urban population are used to strengthen the model. Using data from 2017 and 2018, a positive correlation between expected years of schooling and GNI per capita is hypothesized and supported, along with the other variables, religious importance, poverty headcount ratio, and infant mortality rate, being negatively correlated while literacy rate and urban population rate were positively correlated.

I. Introduction

Education is something that the citizens of developed nations take for granted. Many people dread going to school and doing their assignments, while others risk their lives or go through great hardship to obtain an education. It is widely agreed that in all countries, an education is the best way to help pull oneself and one's family out of poverty. Higher education helps the most in developed countries, while more basic forms of education can be just as helpful in developing countries. There are some developed countries, the United States in particular, that make obtaining a degree in higher education difficult and expensive, and also burden the student with huge amounts of debt. This creates a huge gap in education between the poor and the wealthy. People who cannot afford to go to college take out student loans and are subsequently forced into paying that debt off for the rest of their life, never to be totally financially comfortable. Women owe ⅔ of the student loan debt in the United States, and they make up 56% of undergrad students and 60% of students earning master's degrees (Kindig). That is a huge portion of women seeking higher education in the United States, and one would think that wages follow that, but they do not. Because of this disparity, women have less disposable income to pay back loans and take a longer amount of time to do so. This disparity also can discourage women from attending college in the first place, allowing the inequality to persist. This situation is not seen as often in other developed countries though. Most European countries have publicly funded colleges and universities, so their citizens can attend for free or for a very low price. The inequality is not as present when compared to the United States, but no country is completely equal yet.

Education in most developing nations is underfunded therefore women and girls tend to face the harshest disadvantages. The United Nations Girls' Education Initiative (UNGEI) champions gender equality in and through education. They have key advocacy areas in 12 years of quality education, safe schools, gender-transformative education, and partnership with youth. According to UNGEI, when girls receive an education, it increases their ability to gain access to higher-paying jobs. This is important because it boosts the economy and promotes gender equality. Globally, if all girls received a primary education, 1.7 million children would be rescued from poverty-induced malnutrition. In addition, if all girls worldwide received a secondary education, 12.2 million children could avoid malnutrition and stunted growth. In 2013, UNESCO reported that nearly 25 percent of all girls in developing countries have not completed primary school, and that out of the 774 million people in the world who are illiterate, two-thirds are women (Annan). Improvements to girls' education in developing countries are incredibly important and providing girls with the opportunity to obtain an education will make the global community richer.

II. Literature Review

Schooling and Industrialization in China: Gender Differences in School Enrollment

In this article, Ming-Hsuan Lee focuses on the decrease in gender inequality in education in China over the past thirty to forty years. China has had a long history of gender inequality. At the end of the 1800s, nearly 30-40% of men could read or write to some extent, while only 2-10% of women could do the same. Data from the 1982 census showed that among those born between 1928 and 1932, 60% of men were literate, compared to 17% of women. Over time though, the gender inequality gap decreased, and in 2005, college enrollments showed that there were more women going to college than men. However, gender inequality didn't move as fast for rural communities and poor households. Poor families are more likely to devote resources to their son rather than their daughter because their son will have a better chance of success in the workforce. Data has also shown that the more money a family had, the more likely they were to enroll their daughter into school. Industrialization also played a big role in gender inequality in China by expanding the industrial and service sectors of the job market to women. The jobs in these sectors required basic skills that most women were already performing at home, so the transition to working in a factory was an easy one for women to make. Women dominated these industries and also began to take over some previously male-dominated jobs that required higher education and more advanced skills. Industrialization increased women's employment and it increased their power within the household by allowing them to make more money. These new jobs gave parents more incentive to enroll their daughters in school. It showed them that daughters could provide for their parents just like their sons. There have also been multiple laws and policies introduced to promote gender equality in education including Promoting Nine-Year Compulsory Education in Poor Areas Focusing on Girls, which was initiated and funded by the United Nations and the Chinese government, and the One-Child policy. The One-Child policy made it difficult for parents to display son preference, but it was not monitored heavily in more rural areas. Living in a rural versus an urban area can also affect the gender equality of education. There was less educational gender inequality in urban areas because the people there enjoyed significantly more access to the benefits of the Household Registration System. Families in rural areas were sometimes allowed to have more than one child which caused the discrimination of female education to continue. Industrialization also triggered urbanization. Urbanization opened up a lot of labor jobs aimed towards men that required less education, and the influx of these jobs may have had an impact on the value of male schooling. There have been many factors that have been said to explain this decrease in gender inequality in education, but few studies have looked deeper into how the job structure and skill requirements changed because of Industrialization.

Conceptualizing Gender Equality in Research on Education Quality

The article by Sheila Aikman, Anjum Halai, and Jolly Rubagiza takes a new approach to gender equality in education quality. Human capital theory, a human rights and power perspective, postcolonial critiques, and the view of development as social action for empowerment with gender intersecting with other inequalities are all used to conceptualize gender-equitable education quality. It is argued in the article that "education in low-income countries can only be of quality when it explicitly recognizes and helps to realize the rights and capabilities of all women and girls, and all men and boys" (Aikman). Gendered inequalities can negatively affect the quality of one's education, so low-income countries have to understand how these inequalities of gender are felt, perpetuated, and reinforced, not only in school but in everyday life and society. It is important to show the links between narrow and limited notions of quality education and gender equality as a guarantee that girls can have the same access to schooling, and most importantly, partake in their education in a way that is equivalent to boys. The research shows that education needs to change power structures that allow students to stay in disadvantageous positions. It also shows that education must solve the culture of silence that sustains violence against girls in school and in their everyday lives. Education must also work to provide adequate schooling for boys and girls regardless of their identities or needs that can be influenced by their various backgrounds. This includes social, ethnic, linguistic, and economic backgrounds. EdQual RPC also showcased the need for more "reflection and analysis of gendered relationships, structures, and actions across the projects and contexts so that not only is quality assessed in terms of greater fairness of distribution of resources and opportunities but in terms of the nature and value of the educational experience for girls and boys (Aikman). The research from EdQual RPC shows a new and deeper understanding of gender and gender equality.

Measuring Gender Equality in Education: Lessons from Trends in 43 Countries

This article, written by Stephanie R. Paski, Katharine J. McCarthy, and Barbara S. Mensch, addresses the issue of declining primary school enrollment throughout the world. Trends in 24 sub-Saharan African countries were examined in the late 1960s to the late 1990s. Only 45% of girls and 66% of boys attended school by the late 1960s, but by the late 1990s those percentages increased to 73% of girls and 78% of boys. During that same time period, completion of primary schools went from 46% for boys and 26% for girls up to 58% for boys and 53% for girls. That progress began to slow down towards the late 90s. A lot of the world was also starting to experience some form of economic downturn, rapid population growth, and structural adjustment programs that led to reduced funding for education. The EFA movement was launched in 1990 to make world leaders guarantee that primary school enrollment would be possible for all children within the next decade. It was renewed in 2000 and six goals were to be met by 2015. The fifth goal was to alleviate some of the gender disparities found in the schooling system.

"The 2016 Gender Review accompanying UNESCO's annual Global Education Monitoring Report stated that, 'in 2014, gender parity was achieved globally, on average, in primary, lower secondary, and upper secondary education'" (Paski). There is still much more work to be done regarding gender inequality in education though, because women are still facing numerous challenges when they try to get a quality education compared to boys. The authors of the article show this through their research on primary school enrollment and attainment for 15–19-year-old females. They found that, on average, the disadvantages that affect the primary school enrollment of females have lessened, and that gender parity has been attained in the completion of primary school and the enrollment of secondary school. Even though gender parity has been achieved in these 43 countries, attainment and enrollment is still low for girls and boys in many other countries and that is something that remains a concern.

My research is different from these economic journals because the journals focus more on specific countries and structures within those countries that impact gender inequality of education. My paper is focused on gender inequality in education on a worldwide scale and how being in a developed or developing country impacts the gender inequality that girls face trying to obtain an education.

III. Data

Table 1 – Variable Descriptions

Variable	Description	Year	Units	Source
GNIpc	GNI Per Capita	2017	Current USD	World Bank
YearSchool	Expected Years of Education (female)	2018	Years	World Bank
ReligImp	Percentage of population that considers religion to be very important	2018	% of population	Pew Research Center
POV	Poverty Headcount Ratio at $1.90 per day (2011 PPP)	2017	% of population	World Bank
LitRate	Literacy Rate	2018	% of people aged 15 and above	World Bank
IMR	Infant Mortality Rate	2017	Per 1000 live births	World Bank
UrbPop	Urban Population Percentage	2017	% of total population	World Bank
logGNIpc	Natural logarithm of GDP per capita	2017	Current USD	World Bank

logYearSchool	Natural logarithm of expected years of education	2018	Years	World Bank

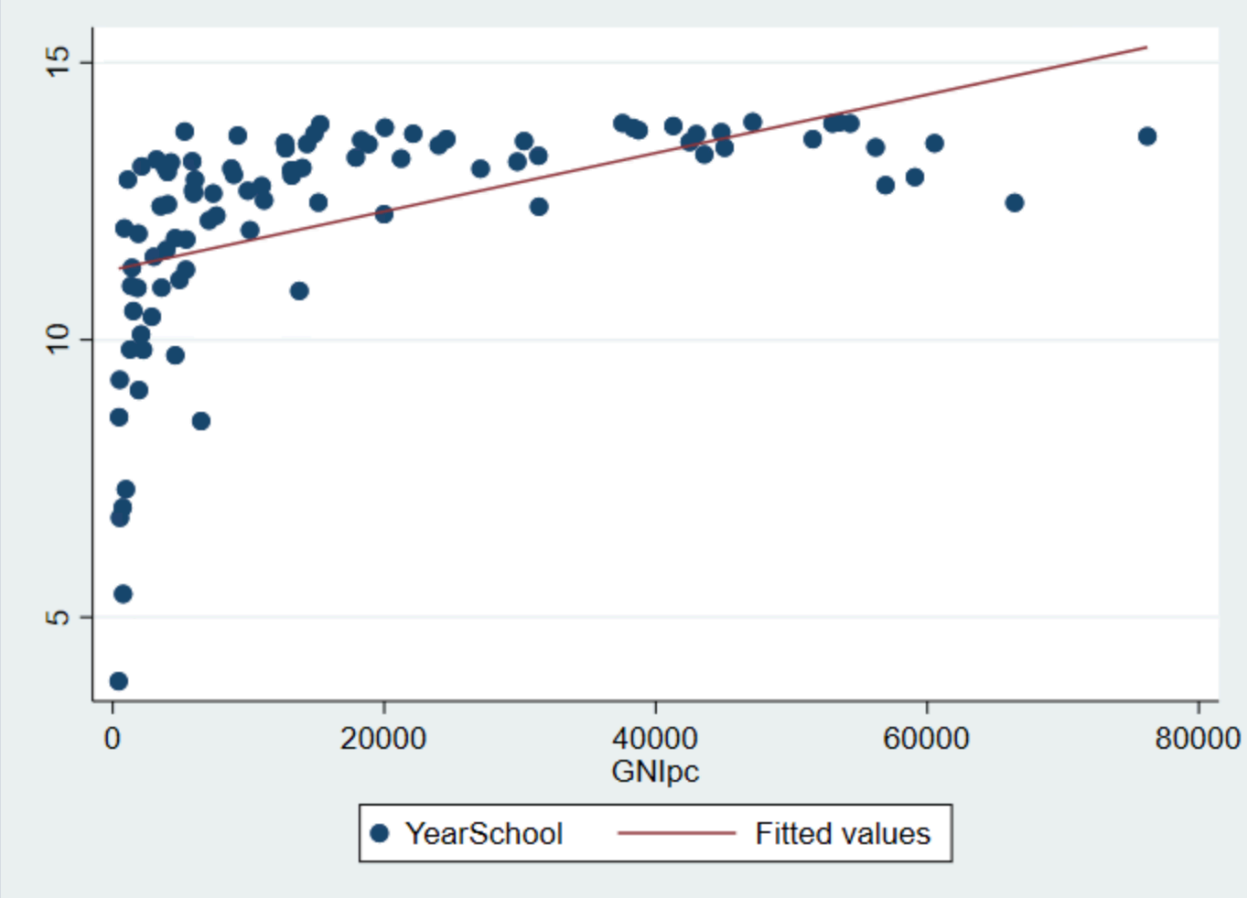
In order to examine the disparity in education in developed and developing nations, cross-sectional data was gathered, examined, and summarized in the table above. The dependent variable is the mean female expected years of education in a country since this is a good indicator of the inequality in education. The main explanatory variable used is GNI per capita because it is a better indicator of the overall economic condition of a country since it calculates the economy's total income regardless of if it is earned in their borders or overseas. Additionally, several other explanatory variables have been added to strengthen the regression model and correlation. These include religious importance, poverty headcount ratio, literacy rate, infant mortality rate, and urban population percentage. I chose poverty headcount ratio, literacy rate, infant mortality rate, and urban population percentage because they are good indicators to measure a country's development. The variable the interested me the most and the one that I most recently added is the religious importance variable. I was interested in seeing how the religious importance in a country can affect the stereotypes that are projected onto girls that affect their educational attainment. My hypothesis for the explanatory variables is that poverty headcount ratio, infant mortality rate and religious importance will be negatively correlated with average years of schooling and literacy rate and urban population percentage will be positively correlated. These variables can all play a part in the gender gap in education in a country. All of the data was obtained from the World Bank, except for the religious importance variable which was obtained from the Pew Reseach Center.

Table 2 – Variable Descriptive Statistics

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
GNIpc	100	17663.8	18869.91	440	76210
YearSchool	95	12.21	1.97	3.85	13.93
ReligImp	69	46.55	31.18	3	94
POV	58	3.84	9.20	0	49.4
LitRate	56	87.95	16.33	35.47	99.89
IMR	100	15.02	17.57	1.7	85.9
UrbPop	100	66.05	21.53	17.13	100
logGNIpc	100	9.06	1.35	6.09	11.24
logYearSchool	95	2.48	0.21	1.35	2.63

Above are the summary statistics of the data set. The summary shows a wide variety in the values of the data. Literacy rate and poverty headcount ratio have the smallest number of observations, as they were not listed for many of the countries. The inconsistency in the number of observations can be attributed to countries with unreported or unknown values for many of the variables in the model. The countries were also divided into Developed and Developing countries using the Human Development Index as the measure. There are 100 countries in total, 50 developing and 50 developed. HDI was developed by the United Nations to measure human development in a country and is calculated using a country's education, health, and life expectancy (*Developed*). HDI is set on a scale from 0 to 1, with most developed countries having a score above 0.8. However, there is no set minimum or maximum to determine whether a country is developed or not so this must be interpreted with caution.

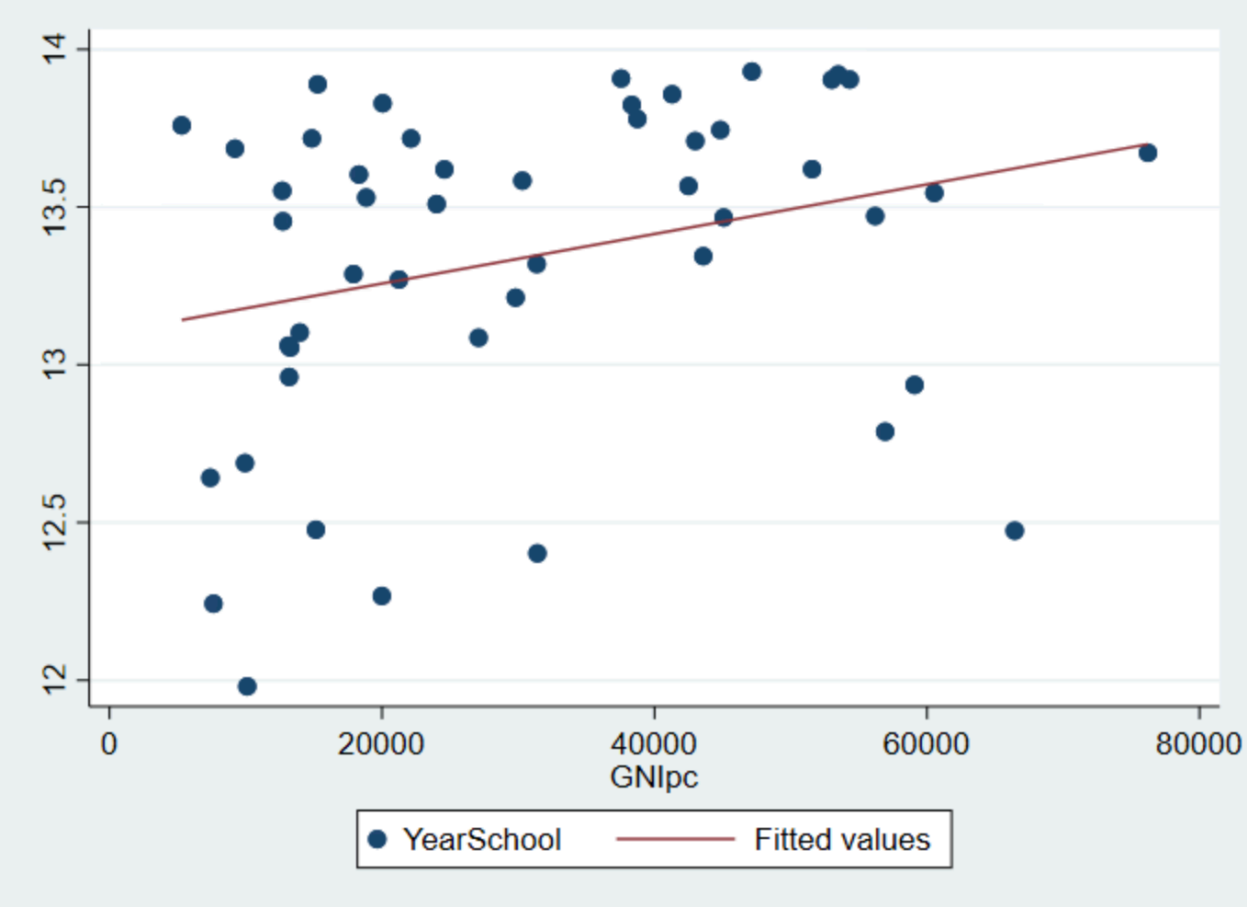
Figure 1 – Simple Linear Regression



My hypothesis for this research is that expected years of schooling is positively correlated with GNI per capita. This is the initial figure that I created when I began researching and looking at the data. This shows that there is a positive correlation between these two variables. Of course, this does not

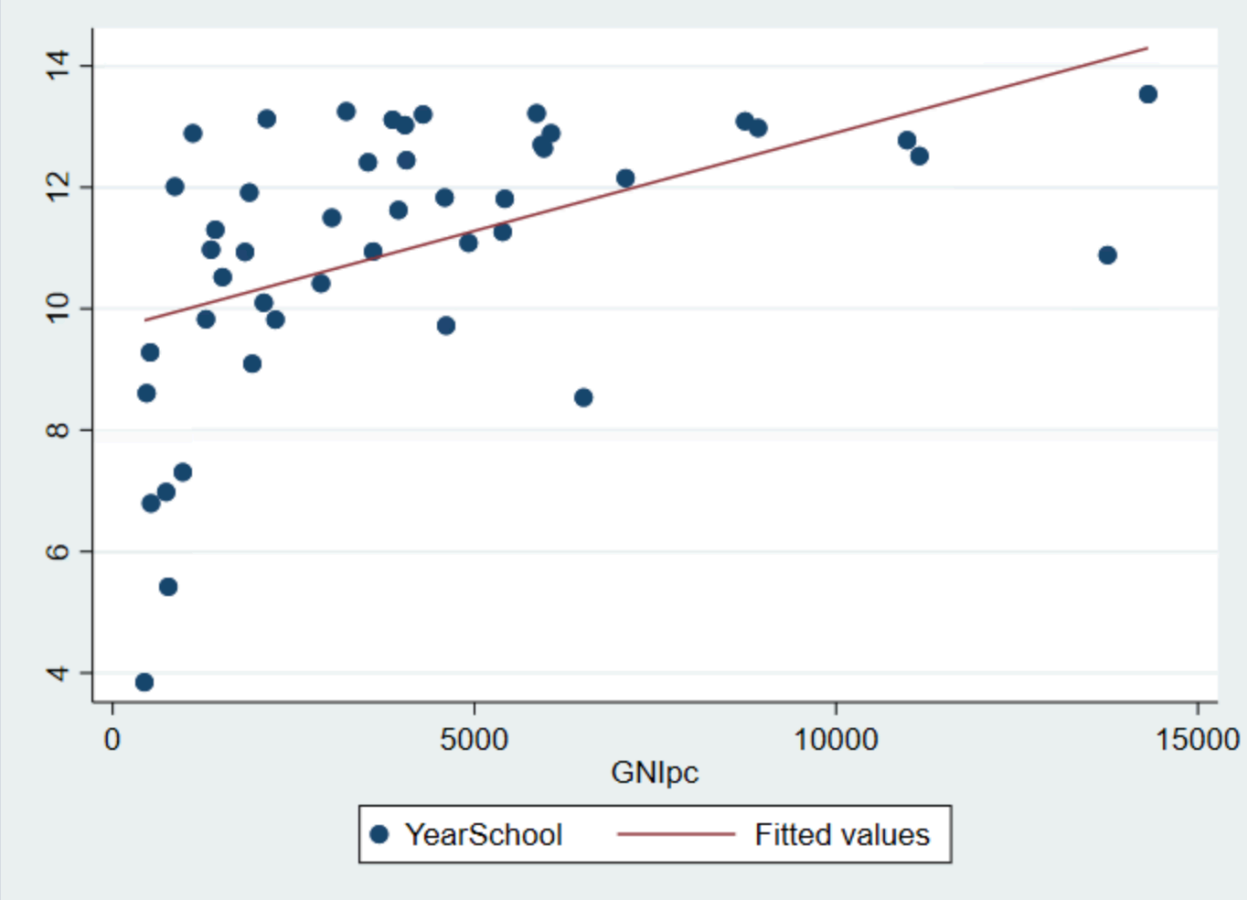
explain everything, but it is generally accepted that countries with a higher GNI per capita will have a higher expected year of schooling for females. As you can see, this scatter plot is very clustered and that is where dividing them into developed and developing countries will be beneficial.

Figure 2 – Developed Countries Simple Linear Regression



This figure is a regression of the developed countries' GNI per capita and expected years of schooling. There is less clustering and even though the correlation is not incredibly strong, there is still an obvious correlation between these two variables. However, there is still clustering since the y axis has a break and starts at 12 years. The outliers could be explained by the fact that the HDI is not a perfect way to determine whether a country is developed or developing so there is not a perfect regression line.

Figure 3 – Developing Countries Simple Linear Regression



This figure is the simple linear regression of the developing countries' female expected years of schooling and GNI per capita. The regression line is steeper, and these seemed to be correlated more strongly than the developed countries.

Before the regression analysis all Gauss-Markov assumptions must be evaluated:

1. Linear in parameters.
    1. All models are linear in parameters.
2. Random sampling.
    1. Data was obtained from each country where available, proving that the sampling was random.
3. No perfect collinearity between explanatory variables.
    1. The table below shows that there is no perfect collinearity between the explanatory variables:

Table 3 – Correlation Table

	GNIpc	YearSchool	ReligImp	POV	LitRate	IMR	UrbPop

GNIpc	1.0000						
YearSchool	0.3892	1.0000					
ReligImp	-0.4881	-0.6775	1.0000				
POV	-0.3460	-0.6728	0.5684	1.0000			
LitRate	0.4063	0.8028	-0.7405	-0.7213	1.0000		
IMR	-0.6903	-0.6210	0.6966	0.4277	-0.5166	1.0000	
UrbPop	0.3959	0.2559	-0.1730	-0.3053	0.1663	-0.5019	1.0000

4. Zero Conditional Mean
    1. The expected value of the error term, u, is assumed to be zero. Since this is a multiple regression model, this assumption is much more likely to hold.
5. Homoskedasticity
    2. The variance of the error term, u, is expected to be held constant.

IV. Results

Model 1: $\log YearSchool = B_0 + B_1(\log GNIpc) + u$

For the first model, I began with a simple regression model to check the relationship between the natural logarithm of GNI per capita and expected years of schooling for females. I chose to use a logarithmic form because the regular numbers were giving me exponential values so the logarithmic form would be easier to interpret.

Estimated Equation 1: $\log YearSchool = 1.501338 + 0.1082246(\log GNIpc)$

GNI per capita showed a positive relationship between both variables, showing us that for a 1% increase in GNI per capita would yield a 0.11% increase in the female expected years of schooling. The coefficient on logGNIpc is positive, denoting that these two variables have a positive linear relationship. The model has an R-squared value of 0.50, which shows a mild correlation between the variables. It also has a P-value of 0. These values showed that it is statistically significant at the 1% level, indicating a strong relationship.

The simple linear regression model is a great basis for analyzing the correlation between GNI and years of schooling, however adding more explanatory variables in a multiple linear regression model can help add precision to the interpretation.

Model 2: $\log YearSchool = B_0 + B_1(\log GNIpc) + B_2(ReligImp) + u$

For the second model, I added one more variable, religious importance, to the simple regression model. This variable is important to the model because it can be used to analyze if that could be an explanation for the level of expected years of schooling in a country.

Estimated Equation 2: logPSE = 1.917645 + 0.0729323(logGNIpc) + -0.0018589(ReligImp)

These additions to the simple linear regression model provide a more specific picture. As predicted, religious importance is negatively correlated to expected years of schooling for females and it proves to be statistically significant at the 1% level with a p-value of 0.016. It has an R-squared value of 0.60, indicating a moderate correlation. This means that for every 1% increase in religious importance, the expected years of schooling for females falls by 0.002%. I also tested this model with the dummy variable, and for developing countries, the coefficient on ReligImp increased by 0.000895, indicating that the expected years of schooling would fall by 0.000895% more if religious importance was higher in that country. However, in a developed country, the coefficient on ReligImp is a much lower value, -0.0008432, indicating that it would only fall by 0.0008432% if religious importance was increased. This suggests that religious importance negatively affects developing countries more than developed countries. See appendix for these values.

Model 3: logYearSchool = B_0 + B_1(POV) + B_2(IMR) + B_3(LitRate) + u

For the third model, I tested three variables– poverty headcount rate, infant mortality rate, and literacy rate– that could be indicating whether a country is developed or developing, similar to the Human Development Index. It does have a small sample size so it must be interpreted with caution.

Estimated Equation 3: logYearSchool = 1.478976 + -0.0061452(POV) + -0.0068508(IMR) + 0.0117101(LitRate)

Poverty headcount ratio showed the expected negative correlation with female school enrollment, if the poverty headcount ratio increases by 1%, expected years of schooling by 0.006%. Infant mortality rate also has a similar negative correlation, with every 1% increase in infant mortality rate, the expected years of schooling falls by 0.007%. However, the literacy rate has a positive correlation with female school enrollment. If the literacy rate increases by 1%, expected years of schooling increases by 0.012%. The R-squared value for this model is 0.78, which shows a strong correlation between the variables. Both infant mortality rate and literacy rate are significant at the 1% level and poverty headcount ratio is significant at the 10% level analyzing the P-value and using a T-test.

Model 4: logYearSchool = B_0 + B_1(logGNIpc) + B_2(ReligImp) + B_3(POV) + B_4(IMR) + B_5(LitRate) + B_6(UrbPop) + u

For the fourth model, I decided to regress all the variables and analyze the outcome. Unfortunately, this model has a small sample size of only 20 countries, since there was limited data for poverty headcount ratio and literacy rate. However, it could be interesting to analyze the outcome.

Estimated Equation 4: logYearSchool = 1.298703 + -0.0279803(logGNIpc) + 0.0003617(ReligImp) + -0.0055873(POV) + -0.0070499(IMR) + 0.0157609(LitRate) + 0.0002691(UrbPop)

This model has an R-squared value of 0.76, denoting a strong relationship. However, a lot of the coefficients on the variables have decreased significantly and even flipped signs, being negative instead of positive and vice versa. Also, the p-values have increased especially for religious importance and urban population. This caused some concern for multicollinearity for me, so I decided to do a variance inflation factor (VIF) test, however all the values were low and did not look worrisome at all. See appendix for these values. The standard errors are low, so I believe these are correlated, just not as strongly as the previous models, especially since it has such a small sample size of 20 countries.

Model 5: $logYearSchool = B_0 + B_1(logGNIpc) + B_2(ReligImp) + B_3(UrbPop) + u$

After analyzing the previous regression results, I decided to drop the variables POV, LitRate, and IMR to have a better sample size to work with. Also, because after analyzing numerous different models, this one had the best estimation results.

Estimated Equation 5: logYearSchool = 2.04087 + 0.0456942(logGNIpc) + -0.0020859(ReligImp) + 0.0020282(UrbPop)

The results to this regression were easier for me to interpret since the number of observations is a much better size, 65. The R-squared value for this is 0.60 which indicates a moderate relationship between the variables. However, the p-values for these variables are all relatively low. LogGNIpc is significant at the 8% level and ReligImp is significant at the 1% level. Urban population is significant at the 10% level. GNI per capita and urban population show a positive relationship with the expected years of schooling and religious importance shows the expected negative relationship.

Table 4 – Regression Models Summary

Dependent Variable: logYearSchool

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
logGNIpc	0.11***	0.073***		-0.028*	0.046**
	(0.01)	(0.02)		(0.024)	(0.026)
ReligImp		-0.002***		0.0004	-0.002***
		(0.0008)		(0.0009)	(0.0008)

POV			-0.006** (0.004)	-0.006 (0.004)	
IMR			-0.007*** (0.002)	-0.007** (0.004)	
LitRate			0.012*** (0.004)	0.016*** (0.006)	
UrbPop				0.0003 (0.001)	0.002** (0.001)
Intercept	1.50*** (0.10)	1.91*** (0.19)	1.48*** (0.44)	1.30** (0.68)	2.04*** (0.21)
No. of obs.	95	65	24	20	65
R-squared	0.50	0.59	0.78	0.76	0.60

Significant at *20% **10% ***1%

V. Extensions

After analyzing Model 4, and noticing how poverty headcount rate, infant mortality rate, and literacy rate had low t-statistics and small coefficients, I conducted an F-test to determine the joint significance of these variables since it struck me as odd that they were not very significant when I attempted to do other models and their p-values were high. Model 4 is the unrestricted model, and Model 5 is the restricted model for the following hypotheses:

$$H_0 : B_3 = 0, B_4 = 0, B_5 = 0$$

$$H_1 : H_0 \text{ is false}$$

An F-value of 4.287 was calculated and the critical value of the f-distribution at the 5% level is 2.60. The F-value is larger than the critical value, so we reject the null hypothesis and find that poverty headcount rate, infant mortality rate, and literacy rate are jointly significant at the 5% level. This can explain why they are significant together, even when having small coefficients and low t-statistics alone.

VI. Conclusions

In conclusion, my initial hypothesis of female years of schooling and GNI per capita being positively correlated was true. The only model where this was questioned was model 3, however with such a small sample size it is hard to determine if that was extremely accurate. In all other models, it was positively correlated with statistical significance. Each linear regression model had an R-squared value indicating a moderate/strong correlation between expected female years of schooling and GNI per capita.

The other variables, religious importance, poverty headcount ratio, and infant mortality rate, were negatively correlated while literacy rate and urban population rate were positively correlated.

My work further amplifies the need for strategic development in girls' education around the world. There are many socio-economic factors that lie in this problem that can certainly be researched further. Understanding these factors is key to unraveling the disparity and moving closer to equality for all children across the world. Obtaining more data for the variables or a larger cross-section would allow for greater analysis of its effects. An educated woman is more likely to marry at a later age, have fewer children, and her children are more likely to survive. Girls' education strengthens economies and diminishes inequality. It is imperative that every girl has the opportunity to acquire an education.

Appendix

List of Countries Used:

Afghanistan	Denmark	Kyrgyz Republic	Panama
Albania	Dominican Republic	Korea, Rep.	Peru
Argentina	Ecuador	Kuwait	Poland
Australia	Egypt, Arab Rep.	Sri Lanka	Portugal
Armenia	Spain	Lithuania	Paraguay
Austria	Estonia	Luxembourg	Qatar
Belgium	Finland	Latvia	Romania
Bangladesh	France	Morocco	Russian Federation
Bulgaria	Gabon	Madagascar	Rwanda
Bahrain	United Kingdom	Mexico	Saudi Arabia
Belarus	Georgia	North Macedonia	Singapore
Bolivia	Ghana	Mali	Sierra Leone
Brazil	Greece	Malta	El Salvador
Brunei Darussalam	Honduras	Myanmar	Sao Tome and Principe
Central African Republic	Croatia	Montenegro	Slovenia
Canada	Hungary	Mongolia	Sweden
Chile	Indonesia	Mauritius	Seychelles
China	India	Malaysia	Thailand
Congo, Rep.	Ireland	Namibia	Tonga
Colombia	Iran, Islamic Rep.	Nigeria	Tanzania
Costa Rica	Iceland	Netherlands	Uruguay
Cyprus	Israel	Norway	United States
Czech Republic	Italy	Nepal	Vietnam
Germany	Japan	New Zealand	Samoa
Djibouti	Kenya	Oman	Zimbabwe

Stata Summary Statistics:

Variable	Obs	Mean	Std. Dev.	Min	Max
GNIpc	100	17663.8	18869.91	440	76210
YearSchool	95	12.21314	1.974669	3.848103	13.92983
ReligImp	69	46.55072	31.17575	3	94
POV	58	3.837931	9.197212	0	49.4
LitRate	56	87.94534	16.32921	35.47377	99.88931
IMR	100	15.023	17.5689	1.7	85.9
UrbPop	100	66.05148	21.53317	17.125	100
logGNIpc	100	9.061266	1.354694	6.086775	11.24125
logYearSch~l	95	2.484496	.2094332	1.34758	2.634033

Variable Correlation:

	GNIpc	YearSc~l	ReligImp	POV	LitRate	IMR	UrbPop
GNIpc	1.0000						
YearSchool	0.3892	1.0000					
ReligImp	-0.4881	-0.6775	1.0000				
POV	-0.3460	-0.6728	0.5684	1.0000			
LitRate	0.4063	0.8028	-0.7405	-0.7213	1.0000		
IMR	-0.6903	-0.6210	0.6966	0.4277	-0.5166	1.0000	
UrbPop	0.3959	0.2559	-0.1730	-0.3053	0.1663	-0.5019	1.0000

Stata Regression Model Outputs:

Model 1:

```
. regress logYearSchool logGNIpc
```

Source	SS	df	MS	Number of obs	=	95
				F(1, 93)	=	91.51
Model	2.04487288	1	2.04487288	Prob > F	=	0.0000
Residual	2.07817927	93	.022346014	R-squared	=	0.4960
				Adj R-squared	=	0.4905
Total	4.12305214	94	.043862257	Root MSE	=	.14949

logYearSch~l	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logGNIpc	.1082246	.0113134	9.57	0.000	.0857585	.1306908
_cons	1.501338	.1039137	14.45	0.000	1.294986	1.70769

Model 2:

```
. regress logYearSchool logGNIpc ReligImp
```

Source	SS	df	MS	Number of obs	=	65
				F(2, 62)	=	43.71
Model	1.31434698	2	.657173488	Prob > F	=	0.0000
Residual	.932058829	62	.015033207	R-squared	=	0.5851
				Adj R-squared	=	0.5717
Total	2.2464058	64	.035100091	Root MSE	=	.12261

logYearSch~l	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logGNIpc	.0729323	.0180072	4.05	0.000	.0369363	.1089283
ReligImp	-.0018589	.000753	-2.47	0.016	-.0033641	-.0003537
_cons	1.917645	.1922794	9.97	0.000	1.533284	2.302006

```
. regress logYearSchool logGNIpc ReligImp if Developed == 0
```

Source	SS	df	MS	Number of obs	=	30
				F(2, 27)	=	19.03
Model	.864441386	2	.432220693	Prob > F	=	0.0000
Residual	.613150748	27	.022709287	R-squared	=	0.5850
				Adj R-squared	=	0.5543
Total	1.47759213	29	.050951453	Root MSE	=	.1507

logYearSch~l	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logGNIpc	.1574691	.0365067	4.31	0.000	.0825635	.2323747
ReligImp	-.002754	.0012493	-2.20	0.036	-.0053173	-.0001907
_cons	1.318961	.3397858	3.88	0.001	.6217785	2.016144

```
. regress logYearSchool logGNIpc ReligImp if Developed == 1
```

Source	SS	df	MS	Number of obs	=	35
				F(2, 32)	=	7.91
Model	.01573949	2	.007869745	Prob > F	=	0.0016
Residual	.03181726	32	.000994289	R-squared	=	0.3310
				Adj R-squared	=	0.2891
Total	.047556751	34	.001398728	Root MSE	=	.03153

logYearSch~l	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logGNIpc	.0176335	.0081915	2.15	0.039	.000948	.0343191
ReligImp	-.0008432	.0003453	-2.44	0.020	-.0015466	-.0001399
_cons	2.438496	.0859883	28.36	0.000	2.263344	2.613649

Model 3:

```
. regress logYearSchool POV IMR LitRate
```

Source	SS	df	MS	Number of obs	=	24
				F(3, 20)	=	24.14
Model	.243623603	3	.081207868	Prob > F	=	0.0000
Residual	.067277353	20	.003363868	R-squared	=	0.7836
				Adj R-squared	=	0.7511
Total	.310900955	23	.013517433	Root MSE	=	.058

logYearSch~l	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
POV	-.0061452	.0039773	-1.55	0.138	-.0144417	.0021513
IMR	-.0068508	.0022755	-3.01	0.007	-.0115974	-.0021042
LitRate	.0117101	.0043787	2.67	0.015	.0025762	.020844
_cons	1.478976	.4379134	3.38	0.003	.5655046	2.392447

Model 4:

```
. regress logYearSchool logGNIpc ReligImp POV IMR LitRate UrbPop
```

Source	SS	df	MS	Number of obs	=	20
				F(6, 13)	=	6.69
Model	.121336904	6	.020222817	Prob > F	=	0.0021
Residual	.039272539	13	.003020965	R-squared	=	0.7555
				Adj R-squared	=	0.6426
Total	.160609444	19	.008453129	Root MSE	=	.05496

logYearSch~l	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logGNIpc	-.0279803	.0242831	-1.15	0.270	-.0804407	.0244801
ReligImp	.0003617	.000872	0.41	0.685	-.0015221	.0022456
POV	-.0055873	.0049988	-1.12	0.284	-.0163866	.005212
IMR	-.0070499	.0042333	-1.67	0.120	-.0161953	.0020955
LitRate	.0157609	.0064535	2.44	0.030	.001819	.0297028
UrbPop	.0002691	.0012114	0.22	0.828	-.0023479	.0028861
_cons	1.298703	.6779797	1.92	0.078	-.1659828	2.763389

```
. vif
```

Variable	VIF	1/VIF
IMR	3.81	0.262441
ReligImp	3.48	0.287066
LitRate	3.20	0.312208
logGNIpc	2.74	0.364636
POV	2.30	0.434437
UrbPop	1.78	0.561380
Mean VIF	2.89	

Model 5:

```
. regress logYearSchool logGNIpc ReligImp UrbPop
```

Source	SS	df	MS		
Model	1.34663668	3	.448878893	Prob > F	0.0000
Residual	.899769126	61	.014750314	R-squared	0.5995
				Adj R-squared	0.5798
Total	2.2464058	64	.035100091	Root MSE	.12145

Number of obs	=	65
F(3, 61)	=	30.43

logYearSch~l	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logGNIpc	.0456942	.0256335	1.78	0.080	-.0055631	.0969515
ReligImp	-.0020859	.0007615	-2.74	0.008	-.0036086	-.0005632
UrbPop	.0020282	.0013708	1.48	0.144	-.0007129	.0047694
_cons	2.04087	.2078752	9.82	0.000	1.625198	2.456542

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