The Influence of Gender Inequality on Economic Growth

Hausarbeit im Rahmen des Hauptseminars ”Ökonomie des Geschlechterverhaltens in der Geschichte” von Prof. Dr. Baten im SS 2004

David Gümbel
Quellgasse 16
72070 Tübingen
Informatik
Contents

1 Introduction 1

2 Gender Inequality and Economic Growth 2
   2.1 Recent Research .............................................. 2
   2.2 Summary ...................................................... 3

3 Analysis of the Impact of Gender Inequality on Growth in Industrialized Countries 4
   3.1 Idea ........................................................... 4
   3.2 Construction of the Model ................................. 5

4 Results from Cross-Country Regressions 8
   4.1 Explanation and Prediction of the Level of GNP per capita . . 8
   4.2 Explanation of Growth ......................................... 10
   4.3 Discussion of the Results .................................... 11
      4.3.1 Measurement of Economic Progress .................... 11
      4.3.2 Inequality in Employment ................................. 12
      4.3.3 Inequality in Education ................................. 13

5 Conclusion 15

A Tables: Level of GNP per capita explained 16

B Tables: Level of GNP per capita predicted 17

C Tables: Absolute Growth of GNP per capita explained 18

D Tables: Percentage of Growth of GNP per capita explained 19
1 Introduction

Inequality between man and woman can be of various kinds. As far as economic aspects are considered, biases in life expectancy, education, jurisdiction, and professional life are among the top suspects that might deserve closer investigation. However, in very general, it seems necessary to clarify that inequality in itself does not necessarily need to be something to be considered as negative. As a blunt example, differences in height and bodily strength between the two sexes are certainly not of discriminatory nature, but simply a biological fact. Thus, when attempting to measure inequality, one should take care not to incorporate \textit{a priori} ethical aspects into the items explaining inequality. Nonetheless, it may not be forgotten that gender inequality itself can well be considered bad and require political counteractions, regardless of the existence of a link with economic growth.

This paper focuses on democratic industrialized countries in the 1970s and tries to measure the influence of gender inequality in health, education, and the labor market using cross-country regressions. In section two, a summary of literature and recent research results relevant for this work is given. Section three layouts the basic ideas behind the model that was used in the regressions and describes the calculation of the incorporated factors and some auxiliaries. In the fourth section, the results of the analysis using the basic model and its variations are explained. Section five concludes and briefly sums up the results of the work presented in this paper.
2 Gender Inequality and Economic Growth

2.1 Recent Research

Stephan Klasen of the University of Munich published a broad statistical analysis of possible reduction of economic growth by gender inequality factors\(^1\) in 1960 to 1992. By the use of cross-country and panel regressions, he finds that there is a notable and negative influence of gender inequality. Most importantly, a bias in education directly impacts economic growth via lowering the average quality of human capital, and inequality in employment is also linked with lower growth\(^2\). Gender inequality in education also seems to influence other factors impeding economic growth, such as fertility and child mortality rates, thus indirectly lowering economic progression. These effects are sizeable, as inequality in education accounts for up to 0.9% lower annual growth in South Asia and Sub-Saharan Africa since the 1960s, while growth in the same regions may have been prohibited by another 0.3% when compared to East Asia.

The findings of David Dollar and Roberta Gatti\(^3\) seem to support those of Klasen. They find a correlation between a high GNP per capita and low gender inequality. Using different measures of gender inequality, such as biases in education, life expectancy, indices of legal and economic equality in society and marriage, and measures of women’s empowerments, they also find that inequality can be to a considerable extent be explained by regional factors, civil freedom, and religious preference. This suggests that there are not market failures hindering investment in females in developing countries, so gender gaps are rather a product of choice there. The correlation of high GNP per capita and gender bias in education is found to be strongly convex, which suggests that from a certain stage in the process of economic progress, female education plays a superproportional role.


\(^{2}\)The terms “growth” and “economic growth” are used synonymously in this paper from now on, and so are “inequality” and “gender inequality”.

A different approach is the one proposed by Stephanie Seguino\textsuperscript{4}, who argues that countries that meet certain economic criteria could profit from gender inequality in wages. Her analysis focuses on semi-industrialized, export-oriented countries in which women account for the bulk of the labor force in exporting industries, in a time period from 1975 to 1995. Using empirical analysis methods, the paper finds a positive link between gender wage inequality and economic growth both across countries and over time (within countries). Another work by Seguino\textsuperscript{5} applies the approach to Asia and finds that in 1975 to 1990, the economies that disadvantaged women most were the fastest growing ones. This is explained by positive effects of low female wages on exports and investments. Apart from the ethical implications of Seguino’s research results, the political consequences are likely to substantiate further scientific investigation in this field.

2.2 Summary

While these findings might seem contradictory at first glance, there are a lot of common factors to be observed. The role of education, especially secondary education, seems to be significant for economic growth, and even more so when economies advance further in their process of economic progress. Moreover, the results suggest inequality in employment to have negative effects, although in some cases - such as the ones examined by Seguino - these effects may be positive. Nonetheless, inequality in employment is a factor to be taken into account when researching links of inequality and growth. In addition, regional, political or religious factors can also explain to a certain extent gender inequality, so a ”culture factor” should not be neglected, either.


\textsuperscript{5}Seguino, Stephanie, Accounting for Asian Economic Growth: Adding Gender to the Equation, 2000, Feminist Economics Vol. 6 No. 3, pp. 27-58[3]
3 Analysis of the Impact of Gender Inequality on Growth in Industrialized Countries

3.1 Idea

As the results of Klasen and Dollar & Gatti suggest that there is a link between high GNP per capita and little or less gender inequality, it seemed interesting to investigate this in a set of selected countries. Using cross-country regressions, this claim was analyzed, and in addition, it was tried to explain growth with gender inequality using several methods: The inequality measured in 1970 was used as a predictor for the level of per-capita income in 1982, as well as for the absolute and the percentage of growth in the 12 year period from 1970 to 1982.

Because of the apparent influence of regional, political, and religious factors, the set of countries should be to a certain extent homogeneous regarding these aspects, while the number should for obvious (statistical) reasons not be too small. As religious and regional factors are very hard to rule out, the only rules applied when selecting the countries were that a) the countries should be industrialized and b) the political system of the countries should be democratic. It is logical, thus, that the major part of the countries selected are from Western Europe and Northern America. The availability of gender-disaggregate empirical data sets was also a constraint, which led to the exclusion of Switzerland and the United States due to the lack of data for secondary schooling in the period analyzed.

Parameters For the modeling of gender inequality, three factors were used. First of all, differences in life expectancy between males and females were incorporated, as these may serve as a measurement for inequality in health. Although this factor might not be of such fundamental influence in industrialized countries as it is in the developing world, it seemed interesting and appropriate for examination nonetheless. For the measurement of inequality in employment, the difference between female labor force and female population share was used. Wage discrimination, which might well be chosen as an
alternative measurement here, was assumed to influence this factor, as wage
discrimination was regarded as reducing the incentive for female wagework.
For the apparently important factor of education, the difference between male
and female enrollment ratios (primary and secondary) was used. Due to the
infinitesimal inequality in primary education and a possible multicollinearity
problem, only secondary education was applied to the model.

The data base used was the 1995 CD-ROM edition of the World Bank’s
"World Data"\textsuperscript{6}.

\subsection*{3.2 Construction of the Model}

\textbf{Life Expectancy} The factor of inequality in life expectancies was included
to measure biases in health. As women have - for various biological reasons
- a higher life expectancy than men, an auxiliary was used for comparison
rather than the life expectancies. The auxiliary was taken from the United
Nations’ HDI index\textsuperscript{7} and is calculated as follows:

\begin{align}
LIFE_m & := \frac{\text{LifeExpectancy}_m - 22.5}{60} \\
LIFE_f & := \frac{\text{LifeExpectancy}_f - 27.5}{60}
\end{align}

$LIFE$ takes values around 1, with higher numbers meaning higher life
expectancy. The comparison between males and females measuring inequality
was done by the following equation, which takes higher values for higher
inequality.

\begin{equation}
INEQ_{\text{life}} := \frac{|LIFE_m - LIFE_f|}{LIFE_m + LIFE_f}
\end{equation}


\textsuperscript{7}The HDI assumes women to biologically have a life expectancy that is five years greater
than men’s.
**Labor Force** To measure inequality in employment, the difference of female population share and female labor force share was employed as follows:

\[
INEQ_{labor} := \frac{|PopulationShare_f - LaborForceShare_f|}{200} \quad (4)
\]

It may seem inappropriate not to also include men in this equation, as it is supposed to measure gender inequality, which would require a male factor as well. However, in this case, this does not make sense analytically, as the male counterparts of population share and labor force share would be calculated simply as PopulationShare\(_m\) = 100% − PopulationShare\(_f\) and LaborForceShare\(_m\) = 100% − LaborForceShare\(_f\). This would not incorporate new independents into this equation, thus not increasing the equation’s explanatory quality.

**Education** For measuring inequality in education by the use of primary and secondary enrollment ratios, the following two equations were used:

\[
INEQ^{prim}_{edu} := \frac{|GrossEnrollment^{prim}_f - GrossEnrollment^{prim}_m|}{GrossEnrollment^{prim}_m + GrossEnrollment^{prim}_f} \quad (5)
\]

\[
INEQ^{sec}_{edu} := \frac{|GrossEnrollment^{sec}_f - GrossEnrollment^{sec}_m|}{GrossEnrollment^{sec}_m + GrossEnrollment^{sec}_f} \quad (6)
\]

However, the values for \(INEQ^{prim}_{edu}\) were found to be diminutive. Additionally, the two terms might not be fully independent, so only the factor of inequality in secondary education was included into the regressions.

**Growth** Per-capita income growth was inserted into the regressions in two variations. First of all, absolute growth for any country \(x\) in 1970 to 1982 was used as an explained variable:

\[
GROWTH_{abs}(x) := GNP^{pc}_{1982}(x) - GNP^{pc}_{1970}(x) \quad (7)
\]

All economies considered encountered this type of growth in the period analyzed. In order to control for the absolute level of per-capita income at the
start of the period, percentage of growth was used in the regressions as well. For this factor, a transformation was applied in order to reduce exogenous influences: The average growth of the industrialized countries (as defined by [6]) was used as a base and subtracted from each country’s figures, defining growth\(^8\) for any country \(x\) as follows\(^9\):

\[
GROWTH\% (x) := \frac{GNP_{1982}^{pc}(x) - GNP_{1970}^{pc}(x)}{GNP_{1970}^{pc}(x)} - \frac{GNP_{1982}^{pc}(IC) - GNP_{1970}^{pc}(IC)}{GNP_{1970}^{pc}(IC)}
\]  

\(8\)

\(9\)The same kind of transformation would have mathematically been possible for equation 7 as well. However, this would not have made sense analytically, due to the incomparability of absolute income levels.

\(\text{IC} = \text{industrialized countries}\)
4 Results from Cross-Country Regressions

4.1 Explanation and Prediction of the Level of GNP per capita

In a first approach, it was tried to statistically explain the absolute level of GNP per capita\textsuperscript{10} by the three factors previously defined. As the life expectancy factor models inequality in access to medical treatment and general health conditions, which were assumed not to be large in the developed world, $INEQ_{life}$ was suspected to be of little explanatory quality. More interesting results, however, were expected to come from the educational factor $INEQ_{edu}$, as inequality in education was found to be influential by all cited authors. Moreover, according to Dollar & Gatti\cite{4}, female secondary schooling becomes even more important with higher economic development, so in the considered industrialized countries, this effect was probable to show up.

While gender inequality may influence economic growth, there are a lot of other parameters to be considered, many of them being more closely tied to economics than the relatively "soft" factors used in the regression. By removing industrialized countries' average growth from $GROWTH\%$, an attempt was made to soften those influences relative to those of other factors such as gender inequality. However, due to the generalizing effect of this transformation which effectively applies the same correction to all countries while the non-inequality factors influencing growth may well be not homogeneous over the countries at all, some exogeneous influences are probable to be still left in the models used. It was thus considered possible that none of the determinants incorporated into this analysis would be statistically significant on the 5% or 10% level. Nonetheless, at least the sign of the relatively influential parameters was expected to be negative.

Based on the fundamental model explained in section three, two models were constructed. The first, model one, used all three explanatory variables defined when trying to statistically explain or predict the absolute level of GNP or its percentage of growth. As the life expectancy factor was assumed

\textsuperscript{10}From now on, GNP and GNP per capita are used synonymously.
to be not as influential as the other two, model two used only $INEQ_{edu}^{sec}$ and $INEQ_{labor}$.

**Model One**  When explaining per-capita income in 1970 with inequality factors in 1970 this model showed statistical significance\(^\text{11}\) as well as a good adjusted $R^2$. As expected, the health parameter has a very high (the highest) error probability, which supports the assumption of its relative irrelevance for growth in the countries analyzed. Of the two other factors, which both have a negative sign, only $INEQ_{edu}$ is statistically significant, which conforms to the findings of Dollar & Gatti[4].

While model one as a whole is also able to sufficiently predict the absolute level of GNP in 1982 using inequality factors of 1970, and the regression is of a notable quality, none of the incorporated parameters are statistically significant. Both inequality in employment and secondary education have a negative sign, although $INEQ_{edu}^{sec}$ has an astonishingly small significance. The life expectancy factor’s positive sign seems odd, but with an error probability of over 50%, this may well be due to chance.

**Model Two**  By the use of the second model, which no longer contains $INEQ_{life}$, the assumption of its meaninglessness could be supported. The removal of this parameter increased quality and significance of all regressions run in comparison to model one. When explaining level of GNP in 1970 using inequality factors of 1970, the parameter modeling inequality in education is the only one that showed statistical significance. In the prediction of 1982 GNP using 1970 inequality, both employed parameters remain statistically insignificant, although inequality in employment moves quite close to statistical significance on the 10% level. As expected, the signs of both factors are negative.

\(^{11}\)Result tables are shown in appendix A for per-capita income level explanation, and appendix B for per-capita income level prediction
4.2 Explanation of Growth

A second focus was laid on trying to explain economic growth with gender inequality. The basic assumption was that little inequality could be considered an advantage that would pay off for the countries providing it in mid- and long-term periods. To analyze this, it was attempted to explain percentage of growth and absolute growth (as defined by equations 8 and 7) using the three explanatory variables defined previously. Again, the two models of the previous section were used for the regression. The results are shown in appendix C for explanation of absolute growth and in appendix D for percentage of growth.

The regressions run showed statistical significance and reasonable quality when explaining absolute growth. Like in the explanation of GNP levels, model two proved to provide better quality. Model one did not show any significant parameter, but signs were as expected, except for the health parameter’s positive beta. Interestingly, the parameter with the lowest statistical significance in both models was education. When applying model two, only the $INEQ_{labor}$ factor showed statistical significance on the 10% level.

While model one has an error probability of almost 50% and an adjusted $R^2$ that is even negative when explaining percentage of growth, some improvement was expected from model two. However, while the second model indeed explains $GROWTH_{\%}$ better than the first, both models show no statistical significance and have an adjusted $R^2$ very close to zero.
4.3 Discussion of the Results

When searching for potential reasons for the results of the regressions run, there are several factors to be considered. As for the regression as a whole, exogeneous variables that influence economic growth were not inserted in the model used in this paper\(^\text{12}\). This imprecision might have induced a measuring error into the models explaining growth that is sufficiently large to marginalize the effects of gender inequality on per-capita income. Also, degree of freedom certainly is an issue, as only 22 countries were analyzed, which is relatively little for statistical purposes. Some data may be hard to compare across countries, such as the female labor force share\(^\text{13}\) In general, the problem that "much of women’s economic activities are unrecorded as many subsistence, home, and reproductive activities are not included in the System of National Accounts (SNA)” (Klasen[1, page 10]) persists, which is implicates that there is a measurement insufficiency that may lead to errors.

4.3.1 Measurement of Economic Progress

While GNP per capita is rather easy to measure and thus simple to include into empirical research, it may well be asked what implications may be assumed when its value is high. As this factor is calculated simply by dividing the country’s GNP by its inhabitants, per-capita income may possibly model a kind of economic progress that does not affect a large part of the population share. It seems a valid hypothesis that in fact, not high per-capita income but high distributional fairness is linked with less gender inequality.

This would make sense for several reasons: It may well be assumed that economic progress makes it possible (or more possible) to care for the distribution of wealth, be it because the existance of wealth is a precondition for its distribution, or because individuals’ preferences change towards social balance. Inequality in itself may also endanger or hinder economic progress simply by inducing political instability. Also, it seems logical to propose that a relatively balanced distribution of wealth in a country is an indicator for

\(^{12}\)This is a difference in modeling to Klasen[1, page 12f] as well as Dollar & Gatti[4, page 7].

\(^{13}\)This problem is also mentioned by Klasen[1, page 10].
an equality preference, which would implicate an aversion against any kind of inequality, including gender inequality. Of course, in this chain of implications, ethical, religious and political parameters may not be neglected, for e.g. religious preferences might counteract an existing aversion against inequality in the case of gender inequality. It might prove useful to rerun the regressions using the median of per-capita income rather than GNP per capita itself.

4.3.2 Inequality in Employment

Inequality in employment turned out to be the most influential factor of all those used in the regressions when explaining for absolute per-capita income growth as well as when predicting the 1982 GNP level. As explained, this makes sense economically, for equation 4 uses female labor force participation as a central parameter, and an increase in female labor force share can be assumed to implicate an overall increase in working population. This way of measuring inequality in employment was expected to be an appropriate replacement for measuring wage inequality (for wage inequality was assumed to reduce the incentive for female wagework, leading to a smaller female labor force share). However, the effect of wage discrimination on the female labor force possibly suffers from a large time lag, so a comparison of $INEQ_{labor}$ and a parameter that directly measures wage inequality might provide further clarification.

Furthermore, it is possible that inequality in employment is itself majorly determined by political factors. The findings of Black, Trainor and Spencer\textsuperscript{14} suggest that gender-related wage inequality is extensively influenced by the comprehensiveness of a country’s overall wage protection system. While this does not contradict the findings of Dollar & Gatti\textsuperscript{4}, who empirically found a link of gender inequality and political factors, the parameter $INEQ_{labor}$ is not helpful in supporting or discarding this assumption. Thus, a different modeling of inequality in employment might be useful. Alternatively, the set

of countries could be selected homogeneously regarding this aspect rather than their political system.

4.3.3 Inequality in Education

When explaining the level of GNP of 1970 using 1970 inequality, inequality in education is clearly the most influential parameter, showing statistical significance in both models as well as a high beta. This is consistent with the findings of Dollar & Gatti[4] and own expectations. Obviously, economically developed, democratic countries have managed to educate their female population well. It economically makes sense to assume a high importance of human capital for the production process in these developed economies, implicating that a well educated female population (which helps produce high quality and high amounts of human capital) has certainly some importance in achieving high per-capita income. Thus, the assumption that inequality in education hinders economic growth in a way that makes it harder to create high GNP can be supported by the regressions.

Contrary to the expectations, the parameter modeling inequality in secondary schooling was not found to be the most influential one when predicting per-capita income level or explaining absolute growth. This is particularly interesting because the importance of female secondary education is emphasized by both Dollar & Gatti[4] and Klasen[1]. It may well be the case that this factor is important for achieving high levels of GNP, but does not help in strengthening further growth. Inequality in education (in terms of $INEQ_{edu}$) is rather small in the countries analyzed, so it makes sense to assume that promoting further equality does not have a large impact onto human capital supply. Its influence could be overshadowed by other parameters, a suggestion that is supported by the employment parameter showing statistical significance in model two’s explanation of absolute growth. Inequality in employment, as measured here, is rather large, and as increasing female labor force share probably means increasing the overall labor force, this assumption makes sense economically.

Moreover, differing results of the regressions run in this paper may be
due to different modeling. Dollar & Gatti incorporate exogenous variables that influence gender inequality[4, page 6f], which was not the case in the model applied in this paper. As enrollment ratios were used to construct the educational parameter, there might be another source of error coming from the data used. It makes more sense to measure primary and secondary achievement rather than enrollment, for they might measure inequality in a more exact way. It seems appropriate to construct an alternative parameter for gender inequality that uses achievements for measurement. This was not done in these regressions due to lack of data, but when using other data sources in addition to [6], such an approach might provide further clarification. However, the problem of possible multicollinearity of male and female education of the same level was addressed by normalizing $INEQ_{edu}^{sec}$ on the sum of male and female education, thereby adjusting the penalty for gaps$^{15}$.

$^{15}$As can be seen from equation 6, due to this transformation a constant gap was weighted less when the overall education level was higher.
5 Conclusion

From the regressions applied in this paper, the hypothesis that a high per-capita income is associated with less gender inequality can be supported. Similar to Dollar & Gatti, it was found that inequality in education is strongly and negatively associated with high GNP per capita. However, the factor of inequality in education did not turn out to be the most influential one when predicting per-capita income levels. In this case, the parameter modeling biases in employment showed the highest explanatory quality, which has been explained economically by this parameter possibly being associated with the total labor force size. The expectation that the parameter for inequality in health would not turn out meaningful was also found in the regressions’ results, which has been explained by the selection of industrialized economies. These are probable to provide a level of health care sufficiently high for differences in life expectancies not to have sizeable economic implications.

While level of per-capita income and absolute growth could be relatively well explained with factors of gender inequality, this was not the case when trying to explain percentage of growth. Both models applied did not prove to be capable of showing results of any statistical quality. While it is possible that this is due to exogeneous variables influencing growth not having been directly inserted into the equations, it seems probable that economies with smaller inequality parameters - and those have been shown to be associated with higher per-capita income - could not increase this high level by a further reduction of inequality in a way that would show through when looking at percentage growth figures. This is supported by the finding that absolute growth could be well explained using inequality.
A Tables: Level of GNP per capita explained

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>$R^2$</th>
<th>Adj. $R^2$</th>
<th>Std. Error of the Estimate</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.603</td>
<td>0.364</td>
<td>0.258</td>
<td>753.60</td>
<td>3.434</td>
<td>0.039</td>
</tr>
<tr>
<td>2</td>
<td>0.602</td>
<td>0.363</td>
<td>0.296</td>
<td>734.29</td>
<td>5.406</td>
<td>0.014</td>
</tr>
</tbody>
</table>

Table 1: Model Summary

<table>
<thead>
<tr>
<th>Factor</th>
<th>Standardized Coefficients (Beta)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>2.847</td>
<td>0.011</td>
</tr>
<tr>
<td>$INEQ_{labor}$</td>
<td></td>
<td>-0.210</td>
<td>-0.861</td>
</tr>
<tr>
<td>$INEQ_{sec edu}$</td>
<td></td>
<td>-0.435</td>
<td>-1.792</td>
</tr>
<tr>
<td>$INEQ_{life}$</td>
<td></td>
<td>0.039</td>
<td>0.197</td>
</tr>
</tbody>
</table>

Table 2: Model 1 - Coefficients

<table>
<thead>
<tr>
<th>Factor</th>
<th>Standardized Coefficients (Beta)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>5.870</td>
<td>0.000</td>
</tr>
<tr>
<td>$INEQ_{labor}$</td>
<td></td>
<td>-0.218</td>
<td>-0.928</td>
</tr>
<tr>
<td>$INEQ_{sec edu}$</td>
<td></td>
<td>-0.442</td>
<td>-1.884</td>
</tr>
</tbody>
</table>

Table 3: Model 2 - Coefficients
B Tables: Level of GNP per capita predicted

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>$R^2$</th>
<th>Adj. $R^2$</th>
<th>Std. Error of the Estimate</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.577</td>
<td>0.333</td>
<td>0.222</td>
<td>3116.08</td>
<td>2.994</td>
<td>0.058</td>
</tr>
<tr>
<td>2</td>
<td>0.563</td>
<td>0.317</td>
<td>0.245</td>
<td>3068.69</td>
<td>4.410</td>
<td>0.027</td>
</tr>
</tbody>
</table>

Table 4: Model Summary

<table>
<thead>
<tr>
<th>Factor</th>
<th>Standardized Coefficients (Beta)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>2.710</td>
<td>0.014</td>
</tr>
<tr>
<td>$INEQ_{labor}$</td>
<td></td>
<td>-0.375</td>
<td>-1.492</td>
</tr>
<tr>
<td>$INEQ_{sec edu}$</td>
<td></td>
<td>-0.198</td>
<td>-0.797</td>
</tr>
<tr>
<td>$INEQ_{life}$</td>
<td></td>
<td>0.133</td>
<td>0.653</td>
</tr>
</tbody>
</table>

Table 5: Model 1 - Coefficients

<table>
<thead>
<tr>
<th>Factor</th>
<th>Standardized Coefficients (Beta)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>6.291</td>
<td>0.000</td>
</tr>
<tr>
<td>$INEQ_{labor}$</td>
<td></td>
<td>-0.399</td>
<td>-1.642</td>
</tr>
<tr>
<td>$INEQ_{sec edu}$</td>
<td></td>
<td>-0.220</td>
<td>-0.907</td>
</tr>
</tbody>
</table>

Table 6: Model 2 - Coefficients
### C Tables: Absolute Growth of GNP *per capita* explained

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>$R^2$</th>
<th>Adj. $R^2$</th>
<th>Std. Error of the Estimate</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.547</td>
<td>0.299</td>
<td>0.183</td>
<td>2559.27</td>
<td>2.565</td>
<td>0.087</td>
</tr>
<tr>
<td>2</td>
<td>0.528</td>
<td>0.278</td>
<td>0.202</td>
<td>2528.32</td>
<td>3.664</td>
<td>0.045</td>
</tr>
</tbody>
</table>

Table 7: Model Summary

<table>
<thead>
<tr>
<th>Factor</th>
<th>Standardized Coefficients (Beta)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>2.461</td>
<td>0.024</td>
</tr>
<tr>
<td>$INEQ_{labor}$</td>
<td></td>
<td>-0.400</td>
<td>-1.563</td>
</tr>
<tr>
<td>$INEQ_{sec,edu}$</td>
<td></td>
<td>-0.113</td>
<td>-0.442</td>
</tr>
<tr>
<td>$INEQ_{life}$</td>
<td></td>
<td>0.154</td>
<td>0.737</td>
</tr>
</tbody>
</table>

Table 8: Model 1 - Coefficients

<table>
<thead>
<tr>
<th>Factor</th>
<th>Standardized Coefficients (Beta)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>5.931</td>
<td>0.000</td>
</tr>
<tr>
<td>$INEQ_{labor}$</td>
<td></td>
<td>-0.430</td>
<td>-1.724</td>
</tr>
<tr>
<td>$INEQ_{sec,edu}$</td>
<td></td>
<td>-0.138</td>
<td>-0.554</td>
</tr>
</tbody>
</table>

Table 9: Model 2 - Coefficients
D Tables: Percentage of Growth of GNP *per capita* explained

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>$R^2$</th>
<th>Adj. $R^2$</th>
<th>Std. Error of the Estimate</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.362</td>
<td>0.131</td>
<td>-0.014</td>
<td>0.74131</td>
<td>0.906</td>
<td>0.458</td>
</tr>
<tr>
<td>2</td>
<td>0.331</td>
<td>0.110</td>
<td>0.016</td>
<td>0.73038</td>
<td>1.171</td>
<td>0.331</td>
</tr>
</tbody>
</table>

Table 10: Model Summary

<table>
<thead>
<tr>
<th>Factor</th>
<th>Standardized Coefficients (Beta)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>0.614</td>
<td>0.547</td>
</tr>
<tr>
<td>$INEQ_{labor}$</td>
<td></td>
<td>0.363</td>
<td>-1.273</td>
</tr>
<tr>
<td>$INEQ_{sec edu}$</td>
<td></td>
<td>0.396</td>
<td>1.393</td>
</tr>
<tr>
<td>$INEQ_{life}$</td>
<td></td>
<td>0.155</td>
<td>0.666</td>
</tr>
</tbody>
</table>

Table 11: Model 1 - Coefficients

<table>
<thead>
<tr>
<th>Factor</th>
<th>Standardized Coefficients (Beta)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>2.273</td>
<td>0.035</td>
</tr>
<tr>
<td>$INEQ_{labor}$</td>
<td></td>
<td>-0.393</td>
<td>-1.418</td>
</tr>
<tr>
<td>$INEQ_{sec edu}$</td>
<td></td>
<td>0.370</td>
<td>1.335</td>
</tr>
</tbody>
</table>

Table 12: Model 2 - Coefficients
References


