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A COMPARATIVE ANALYSIS OF INCOME INEQUALITY AND HUMAN DEVELOPMENT ACROSS THE WORLD

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Abstract

Numerous studies have looked at the relationship between income disparity and economic progress. They believed that economic growth was reflected in the GDP per capita. People's decisions have a direct impact on progress. As people grow as a result of human development, their options increase. This idea encompasses a wide spectrum of human choices.Additionally, inequality may hurt living standards, health, and education. This study looked at how income inequality affects human development across national boundaries. The education index (EI), health index (HI), and income index (IX) are the three subindices that make up the human development index (HDI), which we utilized as a measure of human development. The Gini Coefficient has been used to quantify income inequality. As dependent variables, HDI, EI, HI, and IX have been estimated using four econometric models. An analysis of panel data of 66 countries from 2004 to 2022 was conducted using the Hausman test to identify whether fixed and random effects were equally appropriate. The Drisc and Kray method, as well as Generalized Least Squares, have also been used to produce consistent results in descriptive statistics. There is a negative correlation between HDI, EI, HI, and IX and income inequality, according to empirical findings. Human choice can be expanded through the reduction in income inequality, especially in low HDI economies.

Keywords: *: Human Development Index, Gross Domestic Product, Income Inequality*
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1. INTRODUCTION

The term income inequality refers to an uneven distribution of income. In economic terms, it has become a core issue. Economic growth is negatively affected by inequality every day. Using the Human Development Index and income inequality, this research paper determines their relationship. Low-income countries are affected by uneven income distribution, as well as developed countries. The human development index is among the essential indicators of development in the rest of the world. According to the data, countries with higher HDI have lower inequality levels. Inequality in lower HDI countries is being studied to determine inequality's cost.

The study finds little empirical evidence on the impact of income inequality on economic growth on the Human Development Index. Observing inequality through this channel helped me understand how it impacts economic growth, ultimately leading to HDI. Economic growth and income inequality were examined (Rahmawati et al., (2023); Faisal (2022); Ciment (2007); Mahmood and Noor (2015); Galor (2000); and Voitchovsky (2003) determined the negative impact of income inequality on lower-income countries and its positive impact on economic growth. According to Simon Kuznet (1955), income inequality follows a U-shaped relationship. There were some surprising findings in Forbes' (2000) study. Despite country-specific effects, research indicates that an increase in income inequality in a country has a positive and significant impact on its economic growth over the medium and short term. Society suffers from income inequality when incomes are unevenly distributed. One of the most important components of society is inequality. As of late, it has become a more talked-about topic worldwide. There is a higher degree of inequality than ever before (Sakir2015). According to Thomas Piketty (2013), Capital in the 21st Century, and Joseph Stiglitz (2012), inequality causes the world to pay a price through more unequal income distributions.

The subject of inequality and its relation with development is always an exciting topic to discuss in the light of society. Concertation and circulation of wealth become an essential economic component and play a crucial role in society. How is wealth redistributed in society, and to what extent? It is an issue involving all humanity. In this paper, we find the relationship between inequality and development. Human development is one of the essential measures of development (). In this study, we would like to use HDI to measure the development process in different countries. Most of the literature addressed the link between income inequality and economic growth (Suryani & Woyanti, 2021); Hassan & Khan, 2022; Forbes, 2000; Barro & Austing, 2000; Ranis, 2004; Deininger & Squire, 1998; Kuznet, 1955; Mbaku, 1997).

Countries are selected based on the availability of data. Data constraints were hurdled, but we have tried to make our study explain the relationship in a higher exploration aspect. In the theoretical framework, we discuss the sequence of theory on inequality and economic growth from Kuznet (1955); different studies depicted different findings; some studies found a positive relationship between income inequality and economic growth (Forbes(2000); Banerjee and Duflo(2003)

d; others found a negative relation (Kuznet(1955), Forbes(2000), Barro(2000) and Ostry(2014), Sakir(2015). Inequality is included in ECO's (2017) agenda and is widely debated on this core economic issue. UNDP's (2015) goals targeted to reduce inequality till 2030. In the last two decades, inequality has increased significantly, and consequences have been observed regarding increasing hunger and poverty (OXFAM report,2016). Our study aims to explore the consequences of inequality in terms of development. Moreover, determines the relationship between economic growth and income inequality and what the literature depicted. The study aims to clarify the theories on inequality and growth.

In this study, we face constraints on data availability and missing values, particularly the Gini coefficient.

In the first section, we discussed the introduction of our study. The second section will review the previous study on this issue. In the next section, the theoretical framework and methodology will be discussed. In section four, empirical results will be highlighted, and in the last section, we will conclude the study by giving suggestions.

2. LITERATURE REVIEW

Income distribution is one of the core objectives of macroeconomic policy goals. Different studies showed different kinds of relations. Most studies depicted the relationship between income inequality, economic growth, and human development. Barro's (2000) result showed that the effect of income inequality on economic growth was different in poor and prosperous economies; in rich economies, positive and poor were negatively impacted by income inequality. Schultz (1963), Becker and Chiswick (1966), Psacharoos (1977), and Gregorio and Lee (2002) determine the impact of income distribution capital capital. Panizza (1999) determined the relationship relation between inequality and economic growth. Barro (1999) found that higher income inequality retarded the economic growth. Glore (2000) investigated how income inequality affected the development process. Economic growth and income inequality. Inequality harms economic growth (Piketty, 2013). Income inequality negatively impacts economic growth (Amar & Pratama, 2020; Sinha & Sengupta, 2019; Clement, 2010; Galore & Moav, 2004; Benhabib, 2003; Barro, 1999). Kuznets studied that inequality discouraged growth in the initial stages and postulated his empirics, a well-known U-shape cure; some studies supported Kuznet's Hypothesis. (Banerjee and Dufflo 2003; Dienger and Squire 1998; Mbaku 1997). Some studies express that inequality positively affects economic growth (Mahmood & Noor, 2015; Voitchovsky, 2003; Galore, 2000; Forbes, 2000). Capital market imperfection caused inequality (Barro, 1998). Credit market imperfection also causes an increase in income inequality (Galore & Zuira, 2012).

Mahmood and Noor (2015) determined the relationship between human capital inequality and income inequality in developed and developing countries. Data has been taken from 1970 to 2010 from 92 different countries. This paper uses the Gini Coefficient to measure inequalities and the Globalization Index consistently; GDP per capita and trade are control variables. Dynamic panel data two-step System

Generalized Method of Moment (GMM) statistical technique used to determine the results. According to the results, human capital inequality positively affects income inequality in developing and developed countries. The average average year of education also significantly impacted income inequality for all sampled countries. Global Index, GDP per capita, and trade also significantly impact inequalities. The Government should reduce income inequality because it affects human capital inequality and growth.

2.1. By Economic Growth

Sakir (2014) investigated income inequality from different perspectives. He tried to understand the thinkable reasons for income inequality in the modern world. He postulated his findings through debating mannered and supported the sign that exceptionally talented individuals using technology have been a reason behind rising income inequality. Further explained that there may be other possible reasons, including globalization. In this study, he focused on the issue of ninety-nine percent and the one percent through his findings, which depicted income inequality as an inimical outcome of disparities among the classes. He analyzed that income inequality affects human development for countries at different stages of human development. The paper found that the relationship between the Gini coefficient and human development differs for countries at various stages of human development. He concluded that income inequality reduced human development for all countries irrespective of the stage of human development. Finally, the study determined the relationship between income inequality and poverty level in the United States. Findings showed that the poverty level in the US did not increase even though income inequality has increased.

Hamid and Amin (2013) determined the relationship between the human development index and trade in OIC countries. The data has been taken from 1980 to 2005 and dataset from 2000 to 2009. They used a generalized method of moments (GMM) procedure in a panel data approach. This study categorizes countries into three income groups: high, middle, and low-income. The results showed that income affects the human development index. It suggested that to achieve the HDI level, some policies would be adopted to increase income.

Similarly, Sarwar et al. (2013) analyzed the association between education, poverty, and economic growth. Fixed effect model used on taking panel data from 1995-96 to 2012-13. Findings indicated that education positively affects economic growth and poverty negatively affects economic growth in South Asian Countries. Education may lead to economic growth and poverty reduction, which will cause an increase in human development. Moreover, Climent (2010) examined empirically the impact of income and human capital inequality on economic growth in different regions of the world. In this research paper, a dynamic panel data model controls for country-specific effects and considers the persistence of the inequality indicators; the findings show that the effect of income and human capital mainly depends on regional development. Empirics depicted a negative effect of income and human capital inequality on economic growth in the whole sample for which there are available data, as well as in the low and middle-income economies

but higher-income countries; it shows the positive impact on economic growth. This analysis expresses the encouraging influence of inequality on growth in high-income economies, suggesting that it is not stable over time, and it may impact the growth of lower and middle-income economies, definitely discouraging the impact on economic growth.

Furthermore, Human capital accumulation has a significant impact on economic growth. In every country, human capital accumulation plays an essential role in development. There were different phenomena observed in the study; firstly, it increased the growth and, latterly, harmed the development process. The initial stage of the Industrial Revolution increased economic growth and hampered income inequality. Higher-income countries motivated higher savings, resulting in increased investment and human development. They also expressed the credit market imperfection approach's role in inequality (Galore & Moav, 2004). Voitchovsky (2003) found the relationship between income distribution and economic growth. In this study, income inequality is a determinant of economic growth. A panel of countries was used to determine the impact of income inequality on economic growth from a cross-country perspective. The OLS coefficient estimates were used as a statistical technique due to unobserved country-specific influences. There were 25 countries used for analysis. Findings show that inequality positively impacts growth, and the down distribution of income is negatively impacted by economic growth. Results suggested that different regions have different channels to impact economic growth, so treating accordingly is beneficial for policymakers. Benhabib(2003) analyzed that there is a tradeoff between inequality and growth. He plotted the economic growth, which showed inequality in the graph, and depicted the antagonistic relationship differently. When a sustainable position is achieved, inequality causes economic growth. He suggested that the Government should increase the possible range of sustainable cooperative outcomes.

Moreover, Banerjee and Duflo (2003) examined the correlation between economic growth and income inequality in different countries. They employed the non-parametric methods and indicated that the shaped curve of economic growth caused changes in inequality. It indicated that changes in inequality harmed the economic growth in the next period through estimation of results complied with the above relationship as Kuznet (1955) expressed that inverted "U" shaped relationship found in his study. Hence, Galor (2000) has investigated the effect of income distribution on the development process. This research paper used the unified model to measure the impact of income distribution on the development process. Through the historical evolution process, he found different regimes in which income reacted differently to the development process. Unified models integrate different points of view on income inequality, and debate would lead to more applicable and predictable results. This paper analyzed the classical approach and changes in the modern approach, which suggests that higher-income countries gain more from inequality because their economy accelerates investment in human capital and economic growth. Likewise, Ranis (200) has explored that the development process is measured in terms of economic growth, but it is not a measure of welfare. In this paper, he debated that further relations must be considered who adequately explain the impact of this variable on one another. He perceived that the

development process accelerates the overall welfare of society. Analysis indicated that a bidirectional relation was observed in this study.

Barro (1999) has determined the relationship between income inequality and economic growth and its impact on investment. He used panel studies depicting that income inequality caused lower economic growth in developing countries. In developed countries, income inequality causes an increase in income growth. The results complied with the study of Kuznet(1955), in which he postulated that in the early phase, income inequality retard growth and latterly increased the development process. He described that many variations had yet to be expected to be explained in the analysis. Forbes (2000) explains the relationship between economic growth and income inequality. He used datasets to determine the results. Through panel data countr, countries' effect and time in time-invariant to contend. Findings indicated that an increased inequality would enhance economic growth and be positively significant to growth. Deininger and Squire (1998) investigate income inequality on economic growth. Their study measured the income and land ownership inequality on economic growth. They complied with Kuznet's study that initial economic inequality reduced economic growth in the short run but caused economic growth to increase the economic growth. An increase in aggregate investment raised the economic growth and reduction in poverty.

Mbaku(1997) examined the validity of Kuznet's hypothesis, which was based on the relationship between income inequality and development. He used HDI and PLQI Proxies for development. He used HDI and PLQI for development proxies rather than per capita income used in previous studies. He postulated that HDI and PQLI imported measures for development, and it expressed a more reliable relationship. He employed different countries' Gini and per capita income data using the bottom and top quintile ratios. The results of this research expressed that the U hypothesis of Kuznet's be verified. He suggested that further researchers use HDI and PQLI for development analysis. Galore and Zeira (1993) studied the wealth distribution in human capital capital. They examined how credit market imperfection and indivisibilities from different perspectives affect human capital through investment channels. Findings showed that multiple steady states impacted the growth through the investment saving channel.

Further explained that different factors involved in the distribution of income' Deininger and Squire (1996) determined the relationship between inequality and income distribution. They employed the dataset containing the Gini coefficient and income. Data was collected from different quintiles of different regions. In this study, different inequality datasets showed different regional income and economic growth. Findings indicated not much of a strong relationship between growth and poverty reduction. Kuznet (1955) analyzed the income distribution of people in America and examined the effect of income inequality on economic growth. He divided income data into different groups. He used data from 1875 to 1934 and proportional income groups. He analyzed that initially, income harms economic growth, and later, it causes a rise in economic growth.

3. THEORETICAL FRAMEWORK AND METHODOLOGY

There are different ways through which income inequality affects the human development index. In theories, only a few studies have depicted the impact of income distribution on HDI, and more studies have shown the channels in which income inequality affects the development growth of human capital and physical capital. HDI is an essential measure of development. This study mainly focuses on how such income inequality affects development. The classical approach states the hypothesis that inequality benefits economic development in the post-industrialization period (Keynes, 1920; Kaldor, 1957). It channelized that wealth inequality channels resources increases if an individual has a higher marginal propensity to save and must tend to increase aggregate savings, capital accumulation, and economic growth. Simen Kuznet (1955) postulated the U-shaped relationship between income inequality and development.

The origin of the modern perspective Galor and Zeira (1988, 1993) give the modern perspective origin. Galor and Zeira analyzed heterogeneity's role in determining macroeconomic activity. They proposed the novel viewpoint that heterogeneity and, according to them, income inequality play an essential role in economic growth. The impressive research that bases a unified model modern perspective on the relationship between inequality and economic development has been initially broadly segmented. It lacked a unified hypothesis regarding the role of inequality in the development process, particularly in light of the contrasting predictions generated by the classical and the modern approaches.

Galor (2000) investigated that the classical approach holds at low-income levels but not in much later stages of development. In the early stages, it promoted income inequality because human capital did not account for adding capital accumulation. In later stages, increasing the effect on human capital accumulation would increase the development. Galor and Weil (1999, 2000) developed unified models that measure the relationship between income inequality and economic development. Climent (2007) showed the positive relationship between income inequality and human capital. Mahmood and Noor (2015) determine the positive significant relationship between income inequality and human capital inequality. Panizza (1995) determined the negative relationship between income inequality and economic growth.

Broadly discuss the topic in theory, the effect of income inequality on development. Theory points to two contrary directions of relation: inequality positively, and the other adversely affects economic growth. Some postulate that reducing inequality, while other market imperfections regulate inequality. In socialism, inequality harms development and has an inimical effect on society. Socialism and liberalism postulated that for the well-being of society, the distribution of wealth must be equitable.

Our study determines whether inequality is good or bad for the development process and how wealth would be distributed, which is related to political questions. Initially, inequality harmed growth, which caused an increase in economic growth,

known as the work of Simon Kuznet (1955). He found the U-shaped relationship between economic growth and development. Growth is suitable for people with low incomes (Dollar and Kraay (2002), Kleineberg and Kraay(2003). Nicholas Kaldor and Debraj Ray state that the saving rate affects the growth level and that the income rate causes differences in the saving rate. Kaldor postulates that a higher saving rate tends to higher investment and, ultimately, growth. Debraj Roy argues that inequality harms growth if all are equal in society; it depicts the curve's middle point.

4. EMPIRICAL RESULTS AND DISCUSSION

4.1. Descriptive Analysis

Descriptive statistics depict the quantitive description of the data's main feature used in our study. This included the mean, maximum and minimum values of observation, standard deviation and total counting of observation used in the study. The average value of the Gini coefficient is 38.89, and its standard deviation is 9.23. The maximum value of the Gini coefficient is 79.51and the minimum value is 16.23, which shows the considerable difference between the high and low values of inequality. The average value of the variable population is 33,300,000.00, and the standard deviation is 54,200,000.00. The maximum value of the population is 321,000,000.0, and a minimum of 292,074.00, which expresses the difference in population in sampled countries. The average variable government expenditure is 944,000,000, the standard deviation is 6,790,000,000, the maximum value is 143, 000, 000, 0, and the minimum value is 29, 700, 000,00.

Table 1: Summary of Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
hdi	792.00	0.74	0.21	0.28	4.68
gi	780.00	38.90	9.23	16.23	79.51
ge	770.00	944,000,000.	6,790,000,000	29,700,000,00	143,000,000,00
rem	792.00	2,540,000,000.	4,420,000,000.	2,500,000.00	30,000,000,000.
pop	792.00	33,300,000.00	54,200,000.00	292,074.00	321,000,000.0
inf	792.00	5.81	7.59	(4.48)	121.74

4.2 Correlation Analysis

Table 2: Correlation Matrix

Variables	hdi	ex	Hx	inx	Gi	ge	pop	rem	inf
hdi	1								
ex	0.9575	1							
hx	0.9598	0.9034	1						
inx	0.972	0.8817	0.9121	1					
gi	-0.2249	-0.1939	-0.2115	-0.26	-1				
ge	0.0189	0.011	0.01	0.0394	-0.0416	1			
rem	-0.011	0.0279	0.0605	-0.0357	0.0083	-0.0509	1		
pop	-0.0496	-0.0879	-0.0074	-0.0307	0.1156	-0.0741	0.5179	1	
inf	-0.1627	-0.1121	-0.1293	-0.1927	0.0462	-0.0506	0.0376	0.1609	1

The correlation matrix refers to expressing the relationship among the variables in the study. It showed the relationship between human development index and other control variables, Gini coefficient, population, remittances and inflation. The correlation matrix depicts that the Gini coefficient negatively correlates with hdi -.2249; although the correlation is very low, the negative relationship is expressed in theories and empirics. The population is also negatively related to the HDI value of -.0496. Government expenditure also correlates with an HDI value of .0189, and inflation correlates with a value of -.1627. Correlations are found between dependent variables and explanatory variables. Although a strong association was not found, the relationship carries weight to further empirics, which will show the relationship from a broader perspective

In our study, we have studied the consequences and price of inequality, which bear in the context of the human development index in different countries. In our study, we developed another model showing the relationship between income inequality and HDI indices.

4.3: Empirical Findings of All Econometric Models

The result of econometric model 1 is given below.

Table 3 Dependent Variable: Human Development Index

Variables	FE	OLS	D and K
	(0.708)	(0.000)	(0.000)
Loggi	-.1573761	-0.1466	-.1573761

	(0.000)	(0.000)	(0.000)
Logpop	.2127631	-.0478087	-.0478087
	(0.090)	(0.000)	(0.000)
Logrem	.008986	.0428446	.0428446
Loginf	(0.973)	(0.000)	(0.000)
	-.0001149	-.0497902	-.0497902
Cons	(0.000) -4.068203	(0.297) .1987697	(0.016) .1987697
Auto	**Ramsey Test**	**Hetro**	**Hausman Test**
(0.0002)	(0.0013)	(0.000)	(0.000)

Different studies showed that inflation caused economic growth. (Inflation hurts economic growth (Barro,2013; Fatima et al.,2011; Fisher,1993; Kasidi and Mwakanemela,2013).Inequality is bad for economic growth (Piketty, 2013). Inequality negatively affects the economic growth found by many researchers (Climent,2010; Galore & Moav,2004; Benhabib,2003; Barro,1999). Kuznets studied that inequality harms growth in the initial stages and postulated his empirics, a well-known U shape curve; some studies supported Kuznet's Hypothesis. (Banerjee and Dufflo,2003; Dienger and Squire,1998; Mbaku,1997). Some studies express that inequality causes economic growth (Mahmood & Noor,2015; Voitchovsky,2003; Galore,2000; Forbes,2000).

Techniques are used OLS, fixed effect and D and K for estimation in the model. A relationship between income inequality and development has been found, which proxied HDI and other control variables, Population, and Inflation. Income inequality is insignificant in FE and negatively significant in OLS and D and K models, results supported by literature (Climent,2010; Galore & Moav,2004; Benhabib,2003; Barro,1999). The results also complied with Kuznet's and related studies (Banerjee & Dufflo, 2003; Dienger & Squire,1998; Mbaku,1997). It is found that Population cause a lower human development index in both OLS and D and K results. Remittances affect development positively, and inflation has an inimical impact on the human development index (). Results are more viable in using the D and K techniques for estimation.

Different diagnostics tests are applied, and the results check the model's validity. The Hausman and Ramsey tests depicted that the D and K model is appropriate and the model is fit, respectively. The test for serial correlation and modified test for group-wise Heteroskedasticity expresses that there is no issue of auto and hetero. Detailed results are given in Appendix A.

Table 4 Education Index and Income Inequality

Variables	OLS	RE	GLS
	(0.000)*	0.728	(0.000)*
loggi	-0.1913891	-0.0125906	-0.1913891
	0.085	0.387	(0.084)*
logge	0.0030182	0.0042204	0.0030182
	0.014	0.001	0.013
logrem	0.0151937	0.0158057	0.0151937
	(0.000)*	0.606	.026963
loginf	-0.0323346	-0.0018477	-0.7563
	0.485	0.001	0
Cons	0.1463754	-0.5563959	0.1463754
Auto	**Ramsey Test**	**Hetro**	**Hausman Test**
(0.0057)*	(0.0326)**	(0.0000)*	0.2222

The model depicts the relationship between the education index and income inequality on the sub-index of the Human Development Index. In the study, we explore the impact of inequality on sub-indices of the human development index like the education index, the health index and per capita income. Control variables used in this model are the same as in model 1: population, remittances and inflation. Results have been determined through OLS, Random effect and generalized least square techniques in STATA.

Results indicate that the inequality effect is negatively significant on the education index in OLS and GLS and insignificant in RE. Income inequality causes a decrease in the education sector in sampled countries. Government expenditure effects positively affect the education index significantly in OLS and GLS and insignificantly in RE. Different studies show that government expenditure positively affects economic growth (Irdon,2005; Fouldi,2010; Nurudean & Usman,2010; Patricia & Iruchkwu,2013; Gregorious & Iruchkwu,2013; Gregorious & Ghosh,2012; Osborn,2003; Kibet et al.,2014; Abdon & Estrad,2014; Ayodele et al.,2016; Fawwaz,2015). Remittances also significantly impact the education index in OLS, RE and GLS. A negative association is found between inflation and education index significantly in OLS and GLS and insignificantly in RE. Different diagnostics tests are applied, and the results check the model's validity. The Hausman and Ramsey tests depicted that the GLS model is appropriate and the model is fit, respectively. The test for serial correlation and modified test for group-wise Heteroskedasticity expresses the issue of auto and hetero. Detailed results are given in Appendix Model No. 03

Table 5 Health Index and Income Inequality

Loghx	OLS	FE	Drisc/Kraay
	(0.000)*	0.813	(0.000)*
Loggi	-0.2092827	-0.0089217	-0.2092827
	0.168	0.736	(0.000)*
Logge	0.0020008	0.0035575	0.0020008
	0	0.001	0
Logrem	0.0277288	0.0163892	0.0277288
	0	0.41	0
Loginf	-0.0425124	-0.002959	-0.0425124
	0.936	0.002	0.83
Cons	-0.0425124	-0.536404	0.0139974
Auto	**Ramsey Test**	**Hetro**	**Hausman Test**
(0.0004)*	(0.0174)*	(0.0000)*	0.0195

The model depicts the relationship between the health index and income inequality on the sub-index of the Human Development Index. In this study, we explore the impact of inequality on sub-indices of the human capital index. The control variable used in this model is the same as in model no. 2: Government expenditure, remittances and inflation.

Results have been determined through OLS, Random effect and Disc and Kray techniques in STATA. The finding expresses that the inequality effect negatively affects the OLS D and K health index and is insignificant in FE. Government expenditure positively affects the education index in D and K and insignificantly in OLS and FE. Remittances also positively impact the education index significantly in OLS, FE D and K. A Negative association is found between inflation and the education index significantly in OLS D and K and insignificantly in FE.

Different diagnostics tests are applied, and the results check the model's validity. The Hausman and Ramsey tests depicted that the D and K model is appropriate and the model is fit, respectively. The test for serial correlation and modified test for group-wise Heteroskedasticity expresses the issue of auto and hetero. Detailed results are given in Appendix C.

Model No. 04
In our study we use following model econometric model.

Table 6 Per Capita Income Index and Income Inequality

Loginx	OLS	RE	GLS
	(0.000)*	0.83	(0.000)*
Loggi	-0.3356402	-0.0081113	-0.3356402
	0.008	0.243	(0.008)*
Logge	0.006257	0.0071673	0.006257
	0.002	0	0.002
Logrem	0.0252953	0.0267313	0.0252953
	0	0.676	0
Loginf	-0.09132	-0.0015417	-0.09132
	0.346	0	0.344
Cons	0.2667749	-1.067423	0.2667749
Auto	Ramsey Test	Hetro	Hausman Test
(0.0364)*	(0.6630)*	(0.0000)*	0.4016

In this model, we find a link between the per capita index and income inequality on the Human Development Index sub-index. In this study, we explore the impact of inequality on sub-indices of the human capital index. The control variable used in this model is the same as in model no. Three government expenditures, remittances and inflation.Results have been determined through OLS, Random effect and generalized least square techniques in STATA. Results express that inequality negatively affects the income index in OLS and GLS and is insignificant in RE. Government expenditure effects positively affect the income index significantly in OLS and GLS and insignificantly in RE. Remittances also significantly impact the education index in OLS, RE and GLS. A negative association is found between inflation and education index significantly in OLS and GLS and insignificantly in RE.

Different diagnostics tests are applied, and the results check the model's validity. The Hausman and Ramsey tests depict that the GLS model is appropriate and the model is fit, respectively. The test for serial correlation and modified test for group-wise Heteroskedasticity expresses the issue of auto and hetero. Detailed results are given in Appendix D.

5. CONCLUSION

Overall, this study found a correlation between income inequality and human development, with countries with higher income inequality having lower human development outcomes. This suggests that policies to reduce income inequality positively affect human well-being. This highlights the importance of policies that promote economic equality and mobility, such as progressive taxation and social

safety nets. Furthermore, it highlights the need to address the structural causes of income inequality, such as the concentration of wealth and unequal access to education. This should also involve investing in public infrastructure and services and promoting fair and equitable labor practices. Finally, it is important to remember that reducing income inequality is only one part of improving human well-being and that other areas, such as health, education, and housing, must also be addressed. Moreover, governments should focus on creating jobs and investing in training programs to help those affected by income inequality gain the skills and confidence they need to succeed.

This model finds a link between the per capita index and income inequality on the Human Development Index sub-index. In this study, we explore the impact of inequality on sub-indices of the human capital index. The control variable used in this model is the same as in model no. Three government expenditures, remittances, and inflation. Results have been determined through OLS, Random effect, and generalized least square techniques in STATA. Results express that inequality negatively affects the income index in OLS and GLS and is insignificant in RE. Government expenditure effects positively affect the income index significantly in OLS and GLS and insignificantly in RE. Remittances also significantly impact the OLS, RE, and GLS education index. A negative association is found between inflation and education index significantly in OLS and GLS and insignificantly in RE. Different diagnostics tests are applied, and the results check the model's validity. The Hausman and Ramsey tests depict that the GLS model is appropriate and the model is fit, respectively. The test for serial correlation and modified test for group-wise Heteroskedasticity expresses the issue of auto and hetero.

Additionally, governments should develop policies promoting social mobility and providing more opportunities for disadvantaged people. Furthermore, governments should create incentives for businesses to invest in marginalized communities and support systems for entrepreneurs in disadvantaged areas. Finally, governments should provide targeted assistance to those most affected by income inequality, such as access to education, healthcare, and housing.

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