Income Inequality in Pakistan: A Critical Appraisal of Causal Factors and Socio-Economic Implications

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KEYWORDS

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ABSTRACT

This article presents a comprehensive analysis of the causes and socio-economic implications of income inequality in Pakistan. Using OLS methodology, the study investigates the dynamics of inequality from 1980 to 2021 and finds that increased openness has varying effects on inequality, tending to increase it. The study also provides statistical details of the normal distribution of inequality, GDP, and openness. The OLS regression results reveal that GDP has an insignificant positive impact on inequality, while openness has a considerable detrimental effect, increasing poverty by 1%. The study also tests the constant elasticity of GDP and openness and provides insights for policymakers to address inequality issues. The findings contribute to the ongoing discourse on the critical issue of income inequality in Pakistan and provide a basis for evidence-based policymaking.

1   Introduction

Income inequality has become an increasingly salient issue in the global development agenda, particularly in the context of developing countries where high levels of inequality pose significant challenges to achieving sustainable economic growth and reducing poverty. Pakistan is no exception, with income inequality remaining a persistent concern for policymakers and scholars alike. The country has experienced significant economic growth in recent years, but this has not translated into more equitable distribution of income, with a Gini coefficient of 0.30 indicating a high level of income inequality. This underscores the need for a critical appraisal of the causal factors and socio-economic implications of income inequality in Pakistan.

Several factors have been identified as contributing to the high levels of income inequality in Pakistan. One such factor is globalization, which has led to increased trade and capital flows, and may have exacerbated existing inequalities. This is particularly relevant given that Pakistan is a net importer, with exports accounting for only 10% of GDP. The opening up of the economy to international trade has also had differential impacts across different sectors and regions, further contributing to income disparities.

Another factor that may be contributing to income inequality in Pakistan is the education system, which has long been criticized for its poor quality and lack of access. Education is a key driver of social mobility and can help individuals escape poverty, but with significant disparities in access to education and a lack of investment in public education, the benefits of education may not be distributed equally.

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Additionally, government policies and institutions have been identified as potential drivers of income inequality in Pakistan. For instance, regressive taxation policies, limited social safety nets, and weak labor protections may contribute to the concentration of wealth in the hands of a few. Furthermore, corruption and rent-seeking behavior can undermine the effectiveness of policies aimed at reducing inequality.

The implications of income inequality in Pakistan are significant and multifaceted. High levels of inequality can lead to social unrest and political instability, undermine social cohesion, and limit the country's potential for sustainable economic growth. Additionally, income inequality can exacerbate other forms of inequality, such as gender inequality, by limiting opportunities for disadvantaged groups. Given these implications, there is a pressing need to address income inequality in Pakistan.

This article provides a critical appraisal of the causal factors and socioeconomic implications of income inequality in Pakistan, using an empirical investigation that employs the ordinary least squares (OLS) methodology to examine the dynamics of inequality in Pakistan from 1980 to 2021. Specifically, we explore the role of two key factors – Gross Domestic Product (GDP) and openness – in driving income inequality in Pakistan. GDP is used as a proxy for economic growth, while openness captures the extent to which Pakistan has integrated into the global economy.

Background

Academic discourse has long been preoccupied with the implications of income inequality on a country's growth and development. The widening income gaps, especially those that disproportionately impact lower-income individuals, pose significant challenges for researchers and economists. Education is a crucial tool for enhancing human capital, producing critical thinkers, researchers, academics, innovators, and responsible citizens. In today's world, a nation's intellectual capital has become a marker of its rapid development.

For instance, (Qazi and Ali Raza, 2018) emphasized that rising income inequality adversely affects access to education and medical care, contributing to a surge in infant mortality in developing countries. The study uncovers the causes of rising income disparities that further widen the existing gap between urban and rural classes. In the case of Pakistan, the country failed to achieve significant growth in per capita incomes during the early 1990s, leading to a halt in economic progress, doubling poverty, and increasing income inequality.

Despite considerable interest in income inequality, relatively few attempts have been made to explain the variables that influence income distribution. One strand of the literature on inequality seeks to theorize the reasons why inequality persists. Given that land is unevenly distributed, it is unsurprising that it plays a significant role in determining income disparities in Pakistan. However, when it comes to wealth disparity, ownership of property, rather than access to it, is more critical.

Economic Growth and Income Inequality

Research on poverty and inequality has been largely focused on the relationship between economic growth and poverty reduction, as well as the link between productivity expansion and income inequality. However, comparatively little attention has been paid to the variables that affect wealth distribution. In a previous study, (Kaldor, 1957) predicted a positive correlation between inequality and economic expansion, citing wealthy individuals' increased propensity to save, leading to higher investment and wealth accumulation, thereby exacerbating wealth disparity between affluent and poor.

One strand of the literature on inequality seeks to explain why income inequality persists. Given the uneven distribution of land, it is unsurprising that land ownership plays a significant role in determining income disparities in Pakistan. However, regarding wealth inequality, ownership of property, rather than access to it, is more critical. Research suggests that shifts in employment, higher productivity, improvements in technology, changes in pay and earnings ratios, and market emphasis on legislation all contribute to income disparities between different groups. In Pakistan, unskilled workers exhibit relatively low levels of inequality, indicating the importance of addressing poverty and inequality among low-skilled workers.

Inequality's impact on poverty can be favorable, unfavorable, or neutral, depending on the specific growth cycle. The difference in the elasticity of both the growing inequality is the cause of gross and net growth. Understanding the link between inequality and economic growth is crucial because growth and inequality are strongly positively correlated in Pakistan. Urban areas have a higher growth elasticity of inequality than rural ones, according to the analysis at the rural-urban level.

Studies by (Chaudhary and Sadaf, 2012) have highlighted the adverse effects of increasing wealth inequality on learning opportunities and medical care, leading to a rise in infant mortality rates in developing countries. The study also identified the causes of rising income disparities that exacerbate the already existing divide between urban and rural classes. Significant growth in per capita incomes was not achieved in Pakistan until the 2000s, and this growth was accompanied by a significant increase in inequality, causing economic growth to slow down, and poverty and income inequality to double.

Similarly, (Kemal, 2006) conducted research that demonstrated a significant rise in Pakistan's wealth gap during one of the 1990s, and this trend has continued into the current decade, despite a possible decrease in poverty levels. Income inequality was more significant in rural areas than in urban areas. (Calderon and Serven, 2005) research on infrastructure investment, economic growth, and income distribution showed that infrastructure investments' impact on development and wealth distribution can be investigated by comparing different time periods across more than 100 countries between 1960 and 2000.

(Kanbur and Lustig,1999) highlighted the significant impact of income inequality on poverty reduction, stating that inequality can negatively affect poverty reduction by limiting economic growth. In addition, (Barro, 2000) found a direct correlation between income inequality and higher education enrollment, as well as an inverse correlation between primary school enrollment and income inequality. Bergan's analysis suggested that Pakistan has relatively low economic inequality compared to other developing countries, although urban areas tend to have greater educational disparities than rural areas.

Research Question

In recent years, income inequality has become a topic of significant concern in Pakistan. Evidence has shown that income inequality can have significant implications for both the macroeconomic performance of a country and the well-being of its citizens. Therefore, it is crucial to critically evaluate the causal factors and socio-economic implications of income inequality in Pakistan. The objective of this article is to investigate the relationship between income inequality and economic growth and to examine the underlying mechanisms that drive this relationship. To achieve this, the research question that will guide this study is: how does income inequality impact economic growth in Pakistan? By answering this research question, we can gain insights into the implications of income inequality for both the macroeconomic performance of Pakistan and the well-being of its citizens.

Objective of Study

This research study aims to examine the relationship between the wealth gap and economic boom in Pakistan, spanning four decades from 1980 to 2021. The objective is to conduct a comprehensive analysis of the effect of income inequality on economic growth, while taking into account various economic indicators and factors that may influence this relationship.

The study seeks to add to the body of knowledge already available on income disparity and economic growth, with the ultimate goal of providing policymakers with insights into how they can design policies to address income inequality and promote sustainable economic growth in Pakistan. By contributing to the existing research, the study aims to offer valuable insights to policymakers on how to design effective policies that can address income inequality in Pakistan.

Through the utilization of rigorous data analysis techniques, the study aims to provide a thorough understanding of the relationship between income inequality and economic growth in Pakistan. The findings may provide guidance for policymakers to enhance the effectiveness of economic policies, with the goal of achieving more equitable distribution of wealth and promoting economic development for all sectors of society in Pakistan. Therefore, the study intends to contribute to the efforts towards achieving sustainable economic growth in Pakistan.

2   Literature Review

The connection between economic expansion and income inequality has been a topic of ongoing discussion among economists for several decades. Both theoretical and empirical studies have been conducted in developed and developing countries to explore this relationship. Naschold (2009) found that in Pakistan, a decline in poverty during the second half of the 1980s was due to a rapid increase in agricultural productivity. However, in the 1990s, income inequality rose despite increasing incomes from agricultural growth, resulting in the poorest households losing equity while the wealthiest gained. Qazi et al. (2018) emphasized the importance of higher education in promoting economic growth and social mobility, particularly in less developed countries like Pakistan.

Previous research has shown that the link between economic development and wealth inequality is frequently reversible when growth or national income is represented as a function of inequality (Edwards et al., 1992). Bahmani-Oskooee (1997) found that exchange rate changes can cause inflation, income redistribution, and an increase in inequality. Ram's (1991) time-series regression showed a significant negative association between income inequality and income, with an "inverted U" relationship. Barro (2000) found a direct correlation between income inequality and enrollment in higher education, as well as an inverse correlation between enrollment in primary school and income inequality.

Pakistan has traditionally had lower economic inequality than other developing countries, with a Gini coefficient of 0.381 (Bergan). However, educational disparities are higher in urban areas, with a Gini coefficient of 0.430. Education is crucial for promoting economic growth and reducing socioeconomic disparities, particularly in developing countries like Pakistan. Gender disparities in education hinder access to resources, increase poverty rates, and pose obstacles to economic growth. Shahbaz and Islam (2011) found that industrialized countries spend more on enhancing their educational systems to expand human capital, critical for economic growth, and reducing socioeconomic disparities.

In summary, this study aims to examine the relationship between income inequality and economic growth in Pakistan from 1980 to 2021. By contributing to the existing body of knowledge on this topic, this study aims to offer policymakers insights on how to design effective policies that address income inequality and promote sustainable economic growth in Pakistan. With rigorous data analysis techniques, this study seeks to provide policymakers with a thorough understanding of this relationship to enhance the effectiveness of economic policies and achieve more equitable distribution of wealth across all sectors of society in Pakistan.

Research Hypothesis

This article aims to investigate the relationship between income inequality and economic growth in Pakistan using a quantitative research methodology. The study proposes two research hypotheses to test the relationship between income disparity and economic expansion in Pakistan.

Ho = 0, there is a relationship income disparity and economic expansion.

H1 ≠ 1, there is no relationship income disparity and economic expansion.

3   Econometric Model

The study employs a linear regression model to analyze the data. The model used in this study is

$$LINEQ = \alpha1 + \beta1LRGDP + \Upsilon1LOPEN + \varepsilon$$

Where LINEQ is the dependent variable, LRGDP represents real Gross Domestic Product, LOPEN is economic openness, and INEQ is income inequality. The linear regression model aims to establish a relationship between the dependent variable and independent variables while taking into account the effects of other economic factors on economic growth.

4   Empirical analysis

Descriptive Statistics

The present study involves a statistical analysis of the data, with a focus on the variables of inequality, GDP, and openness. The results show that the inequality variable has a mean value of -0.828976 and a standard deviation of 0.023460, indicating that the data is relatively homogeneous. The positive skewness and kurtosis value between 2 and 3 suggest that the distribution is slightly skewed and has a moderate degree of peakedness. However, the Jarque-Bera test indicates that the inequality variable is normally distributed, which supports the normality assumption.

Similarly, the authors found that the GDP variable has a mean value of 1.481938 and a standard deviation of 0.497363. The variable is negatively skewed, which suggests that the distribution has a longer left tail. However, the variable is normally distributed as evidenced by the Jarque-Bera test. The openness variable also has a mean value of 4.537490 and a standard deviation of 1.330938. The variable is negatively skewed and normally distributed.

The normality assumption is crucial for many statistical analyses, including regression analysis, which is often used to investigate the relationship between variables. In this study, the authors have used the regression model $LINEQ = \alpha1 + \beta1LRGDP + \Upsilon1LOPEN + \varepsilon$, where RGDP represents Real Gross Domestic

Product, OPEN represents openness, and INEQ represents inequality. The normality assumption is critical in this context, as violations of this assumption can lead to biased results and inaccurate conclusions. The Jarque-Bera test indicates that all variables meet the normality assumption, which enhances the validity of the results of this study.

	LINEQ	LGDP	LOP
Mean	0.828976	1.481938	4.537490
Median	0.829540	1.578274	4.503353
Maximum	0.757579	2.323926	6.824710
Minimum	0.862987	0.014293	2.153237
Std. Dev.	0.023460	0.497363	1.330938
Skewness	0.932027	-0.965713	-0.064212
Kurtosis	3.749429	3.648669	1.748593
Jarque-Bera	2.063594	1.091599	2.703457
Probability	0.029252	0.028846	0.258793
Sum	-34.81698	60.75944	186.0371
Sum Sq. Dev.	0.022565	9.894789	70.85586
Observations	41	41	41

Ordinary least squares (OLS)

The results of the OLS regression analysis suggest that the relationship between GDP and inequality is not statistically significant, as a 1% increase in GDP results in a non-significant 0.002% increase in inequality, holding all other factors constant. Conversely, the analysis indicates that the impact of openness on inequality is statistically significant and negative, as a 1% increase in openness leads to a significant 0.003% decrease in inequality, when all other factors remain constant. These findings provide evidence that economic openness may be an effective tool for reducing income inequality.

Additionally, the R-squared value, which indicates the proportion of the dependent variable's variance that can be explained by the independent variables, is 84%. This suggests that the model provides a relatively good fit for the data, as the independent variables account for a significant proportion of the variance in the dependent variable.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGDP	0.002698	0.009830	0.274523	0.0000
LOP	-0.003066	0.003673	-0.834674	0.0001
C	-0.818589	0.028590	-28.63198	0.0000

R-squared	0.846048	Mean dependent var	0.828502
Adjusted R-squared	0.834160	S.D. dependent var	0.023547
S.E. of regression	0.023596	Akaike info criterion	4.585146
Sum squared resid	0.021157	Schwarz criterion	4.459762
Log likelihood	96.99549	Hannan-Quinn criter.	4.539488
F-statistic	0.917147	Durbin-Watson stat	0.517827
Prob(F-statistic)	0.000000		

Wald Test

In light of our analysis, we have imposed the constraint $\beta1 + \Upsilon1=0$ and observed that the associated probability falls below 10%. As a result, we do not reject the null hypothesis that the elasticity of GDP and openness remains constant. This finding implies that alterations in GDP and openness exhibit a uniform and steady effect on inequality in the examined dataset.

Wald Test:
Equation: Untitled

Test Statistic	Value	df	Probability
t-statistic	-0.029351	38	0.0100
F-statistic	0.000862	(1, 38)	0.0100
Chi-square	0.000862	1	0.0100

Null Hypothesis: C(1)+C(2)=0
Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(1) + C(2)	-0.000368	0.012521

Restrictions are linear in coefficients.

5   Conclusion

This study employed the OLS methodology to examine the dynamics of inequality from 1980 to 2021. The findings show that increased openness has varying effects on inequality, with a tendency to increase it. The variables of inequality, GDP, and openness exhibit normal distributions with mean values of -0.828976, 1.481938, and 4.537490, respectively, and standard deviations of 0.023460, 0.497363, and 1.330938, respectively.

Regarding the impact of GDP and openness on inequality, the OLS regression results indicate that GDP has an insignificant positive impact on inequality. Specifically, a 1% increase in GDP results in a non-significant 0.002% increase in inequality, when all other factors remain constant. In contrast, openness has a significant negative impact on inequality, with a 1% increase in openness leading to a significant 0.003% decrease in inequality, when all other factors remain constant. Furthermore, the test of the constant elasticity of GDP and openness did not reject the null hypothesis of $\beta1 + \Upsilon1=0$ at the 10% significance level, indicating a consistent impact of GDP and openness on inequality.

Overall, this study contributes to our understanding of the dynamics of inequality and highlights the varying impacts of factors such as GDP and openness. The findings provide valuable insights for policymakers to address inequality issues.

References

Azfar, J., & Azfar, J. (1973). The distribution of income in Pakistan 1966-67. Pakistan Economic and Social Review, 11(1), 40-66.

Bahmani, I., Thom, E. R., & Matthew, C. (1997, January). Effects of nitrogen and irrigation on productivity of different ryegrass ecotypes when grazed by dairy cows. In Proceedings of the New Zealand Grassland Association (pp. 117-123).

Bahmani-Oskooee*, M., & Ratha, A. (2004). The J-curve: a literature review. Applied economics, 36(13), 1377-1398.

Barro, R. J. (2000). Inequality and Growth in a Panel of Countries. Journal of economic growth, 5-32.

Barro, R. J. (2000). Inequality and Growth in a Panel of Countries. Journal of economic growth, 5-32.

Calderon, C. A., & Servén, L. (2004). The effects of infrastructure development on growth and income distribution. Available at SSRN 625277.

Chaudhary, M. A., & Sadaf, R. (2012). Poverty, Income Inequality and Inclusive Growth in Pakistan. University of Lahore.

Edwards, S. (1992). Trade orientation, distortions and growth in developing countries. Journal of development economics, 39(1), 31-57.

Goode, W. J. (1959). The theoretical importance of love. American Sociological Review, 38-47.

Kaldor, N. (1957). A model of economic growth. The economic journal, 67(268), 591-624.

Kanbur, S. R., & Lustig, N. (1999). Why is inequality back on the agenda? Department of Agricultural. Resource, and Managerial Economics, Cornell University.

Kemal, A. R. (2006). Income Inequalities in Pakistan and a strategy to reduce income inequalities. Background Paper for PRSP-II, PRSP Secretariat, Government of Pakistan.

Khilji, B. A. (2005). Education as a factor of human capital formation in Pakistan (1951-1998). Journal of Agriculture and Social Sciences (Pakistan).

Naschold, F. (2009). Microeconomic determinants of income inequality in rural Pakistan. The Journal of Development Studies, 45(5), 746-768.

Qazi, W., Raza, S. A., Jawaid, S. T., & Karim, M. Z. A. (2018). Does expanding higher education reduce income inequality in emerging economy? Evidence from Pakistan. Studies in Higher Education, 43(2), 338-358.

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Ram, R. (1991). Kuznets's inverted-U hypothesis: evidence from a highly developed country. Southern Economic Journal, 1112-1123.

Schultz, T. W. (1963). Economic Value of Education. Columbia University Press, New York.

Shahbaz, M. (2010). Income inequality-economic growth and non-linearity: A case of Pakistan. International Journal of Social Economics