Bulletin of Business and Economics, 13(2), 232-242
https://bbejournal.com
https://doi.org/10.61506/01.00321

A Comparative Analysis of Income Inequality between Punjab and Balochistan, Pakistan

Muhammad Farhan Riaz[1], Ayesha Ikram[2], Maria Faiq Javaid[3], Ambreen Sarwar[4]

Abstract
This study endeavors to highlight the regional inequality in Pakistan. In this study, income inequality is calculated at the provincial and divisional levels of two provinces i.e. Punjab and Balochistan. The data of the year 2018-19 is chosen from the Pakistan Social and Living Standard Measurement (PSLM). Firstly, the current situation of income is inspected by utilizing the data of the PSLM (2018-19) to examine the convergence or divergence in inequalities comparison is done with the year (2013-14). The most popular measure of inequality: Gini and Lorenz curves are used to calculate income inequality between two provinces and their divisions. The findings of this study revealed that income inequality is more prominent in Punjab. Overall Punjab's situation is better than other province. Income inequality is noteworthy in urban areas. Lastly, recommendations are made as specific regions or divisions should be focused where inequality is high. Moreover, efforts should also be made for the equal distribution of resources.
Keywords: income inequality, Gini, Lorenz curve, Convergence, Divergence

1. Introduction

The disparity in an economy or the world is a bitter reality which is also not a new phenomenon. Millions of people in the world are dying because of the lack of food and fundamental requirements (Corps, 2019). Only a few people are enjoying billions of the wealth and more than one billion people are spending their lives in hunger (Banerjee and Duflo 2011; Guterres 2020). Economic discrimination in the human race is not only higher than ever, and if the situation remains the same it will likely increment further (Sutcliffe 2005; Heintz 2006; Ortiz et al. 2012). The authentic impression of the global economy displays that humankind has faced the challenges in economic and social spheres. Inequality is one of the major issues facing the world these days. The increasing trend of inequality has largely excluded the poor from the benefits enjoyed by the rich and it is constrained in the prospects of recovery (Brian 2015; Ali and Audi, 2016; Kanbur and Stiglitz 2016; Ali, 2018; Dean et al. 2020; Ali et al., 2021; Cowell 2011). Inequality is the condition of not being equivalent, particularly in rights, status, and possibilities (Afonso et al. 2015). According to Caballero (2008), society is divided into two groups: Uppers (full of confidence and looking forward to the future) and Downers (trying to fit in those limited resources that they have). Regional inequality has persisted as a central question for many developed countries (Paprotny 2021). Yet its origins are more profound in developing countries (Hall 1984; Klasen 2016). Pakistan's per capita income has increased since the 1990s but this is not inspiring from the viewpoint of the country's development (Hasan et al. 1998; Ullah and Ali, 2024).

According to Population Reference Bureau (PRB) report published in 2016, Pakistan has been ranked as the sixth-largest country in terms of population. According to the Pakistan Bureau of Statistics (PBS), Pakistan has four provinces out of which the province of Punjab contains a larger proportion of the population than the rest of 3 provinces, i.e., Sindh, NWFP, and Baluchistan, which has created an inherent meditation in terms of political representation and translated into a "smaller provinces versus the bigger province" pattern (Akhtar 2008). According to PBS, Punjab is the largest province with respect to population. The widening inequality in income is disturbing the socio-political situation of Pakistan in several ways, Firstly, perception about regional discrimination is that development policies focused on large provinces, while small provinces are ignored (Akhtar 2008) Secondly, Pakistan is facing a period of youth bulge, but the economy is failing to create meaningful jobs for the large number of young people entering the world of work each year. So, it's not enough to increase the resources, there is also a need for the equal distribution of these resources otherwise it will create many other problems like suicide, violence, unemployment, and drug abuse (Ali and Hafeez 2017; UNICEF 2020; Rehman 2020; Liu et al. 2018; Østby 2013). According to Afonso (2015), Inequality mainly is of two types: inequality of outcomes (e.g., family background, gender, etc.) and inequality of opportunities (lack of job opportunities, etc.). Punjab's per capita annual income is greater than all other provinces and Balochistan's per capita annual income is less than all other provinces (PSLM 2018-19). Inequality in Pakistan especially in the case of income and wealth is from top to bottom (Kemal 2006). In this study, the most important inequality of opportunity income inequality is discussed, because the reduction in this inequality can help to improve other inequalities. Income inequality is calculated for Punjab and Balochistan, and divisions of these provinces.

Income inequality is one of those issues which are discussed since the 1970s and still this problem is not solved. This issue is highlighted by many researchers in recent years because they know that countries cannot be developed with this problem and developed countries cannot improve living standards if income inequality exists. As indicated by World social report (2020), observes the four main causes of income inequality, which are as follows: technological change, trade liberalization, wealth concentration, and access to education. The top 1% of the rich receive about 15% of global income and 20 percent poorest receive only 1% of worldwide income (Banya, 1995). In Pakistan, the concentration of wealth is on the top 10% of the population, on average top 10% of the population consumes three times more than the bottom 10% (Kirmani 2020). Despite recent efforts for financial equality, separatist tendencies of the Federation of Pakistan are creating a sense of deprivation among the people of Balochistan. Such local differences have serious political and social ramifications and represent an extreme threat to peace and stability in the nation as a whole. Regional differences fuel resentment among those who are underdeveloped. In this study Punjab which is considered as the most developed and biggest province w.r.t population and Balochistan which is biggest w.r.t area but considered as the most deprived province are selected to examine the income inequality. Punjab Divisions which are discussed in this study are: Bahawalpur, DGK, Faisalabad, Gujranwala, Lahore, Islamabad, Rawalpindi, Sargodha, Sahiwal, and Multan. And Balochistan divisions are: Kalat, Quetta, Sibbi, Nasirabad and ZHOB and every division has its rural areas and urban areas.

[1] Government Shalimar Graduate College, Lahore, Pakistan
[2] MPhil Scholar, Department of Economics, University of the Punjab, Pakistan
[3] School of Economics, University of the Punjab Lahore, Pakistan
[4] Corresponding Author, School of Economics, University of the Punjab Lahore, Pakistan

These days inequality is one of the hot issues in society because as society is getting more advanced people are earning more but the gap between haves and haves not is increasing rather than decreasing. This study differs from the former work in numerous aspects. Many studies are related to the developed countries and developing countries, only a few studies discussed this issue in Pakistan at the provincial level but intra-provincial inequalities are mostly ignored. Most of the literature is about income inequality at the provincial level, but this study will contribute to the previous literature by including not only income inequality at the provincial level but also at the divisional level, which will be helpful for the policymakers to focus on those divisions which need more attention and thinking about what to do for reducing the gap between provinces.
This study is organized in five sections which are as follows:
Section 1 of this study is about the introduction, objectives, and significance of the study. Section 2 is about the literature related to income inequality. Section 3 deeply describes the source of data and the methodology used in this study; Section 4 describes the empirical results and discussion and Section 5 discuss conclusion and recommendations.

2. Literature Review

Many economists highlight the issue of inequality and different types of inequalities are discussed to highlight the issue of imbalance between rich and poor. Anderson and Pomfret (2004), studied inequality in standard of living within five Central Asian countries and highlighted that families with more educated leaders have better conditions and spend more on public goods than families with less educated leaders. Maslikhina (2016), analyzed the measurement of interregional inequality in Russia and explained suitable policy measures to resolve this issue. Effects of taxes and the transfer would be decline income disparity (Atkinson et al. 2017; Munir et al, 2024). In developing countries, like India, Pakistan, etc. this issue is more problematic than in developed countries. Reddy and Bantilan (2012), highlighted regional inequalities in Andhra Pradesh (state of India) and disclosed that metropolitan areas and their adjoining districts contributed a large chunk of returns. Husain (2018), explained the 25 years of Pakistan's economy and challenges faced by Pakistan, brought about a noteworthy fall in growth rate. Khan et al. (2019), highlight the issue of cultural and horizontal inequality at the divisional level of provinces of Pakistan. In Pakistan inequality is higher in urban areas relative to rural areas and exposed the high discrepancy between the rich and poor in the use of different facilities i.e., electricity, gas, tap water, phone, and adequate sanitation facilities (Asad and Ahmad 2011; Anwar 2009; Xiong, 2024; Cizakca, 2024)
Pakistan was one of the highest 10 fastest-rising developing nations from 1960 till 1990 with an annual average growth rate of 6 percent (Hasan et al. 1998). Rural-urban disparity accounts for the larger share in within-country inequality (Eastwood and Lipton 2000; Young 2013; Katsushi et al. 2018; Karim and Said, 2024; Ibrahim and Rasheed, 2024). Jamal and Khan (2003), analyzed that inequality has raised in three provinces i.e., Sindh, NWFP, and Balochistan. Punjab districts are generally moved up and improved their positions in development ranking. Akhtar (2008), analyzed the interprovincial and intra-provincial inequalities in Pakistan from 1998 to 2005 by using PSLM data and revealed that disparities within Punjab and Sindh are slightly higher than the national estimate and lower in Baluchistan and NWFP. Pakistani Society women have fewer opportunities than men and people belonging to rural areas are more underprivileged than those belonging to urban areas and parental education is considered as one of the most important conditions for better living standard of children (Shaheen et al. 2016). Sadiq et al. (2018), revealed that the development of small provinces (KPK and Baluchistan) depends on the development of large provinces. Thus, from the development programs, large provinces get more benefits than small provinces. Burki et al. (2015), estimated the multidimensional disparity in the case of Pakistan at provincial and divisional levels, findings of this study revealed that income inequality is higher in urban areas than in rural areas of Pakistan and In Sindh, income inequality is higher, and in Balochistan, income inequality is lower than all other provinces. Bourguignon and Morrison (2002), estimated the income distribution of 33 countries from 1820 until 1920 and concluded that world inequality worsened continuously from 1820 to 1950 resting only between 1910 and 1929. Klasen (2016), analyzed the increasing global inequality trends in developing countries and revealed that between countries and in total inequality is decreasing but within a country, inequality is increasing. Regional disparity in per capita income can be linked with sectoral force productivity, workforce participation, and part of the sectoral workforce in Indonesia (Sitepu et al. 2018).
In developing countries like Pakistan, inequality is higher than in developed countries. In Pakistan, income inequality among provinces is calculated by many researchers, Theil Index, Gini coefficient, etc. are mostly used to calculate between and within provinces income inequality. Jafri et al. (1995), discussed the poverty and income disparity in Pakistan and exposed that income inequality improved during the period 1979-88 and increased from 1990-91. In Pakistan, not only the income level but also the structural inequality differs among provinces (Kruijk, 1986). Mahmood and Tahir (1984), compared the results of various inequality measures in Pakistan and its rural and urban areas. The long-run relationship between growth, inequality, and poverty was showed that national-level growth has worsened income disparity, but more in rural areas, and when inequality increased poverty increased more in urban areas than in rural areas (Ali and Tahir 1999). Khan et al. (2016)**,** depicted the affiliation between economic growth and income disparities in Pakistan and explained that on income inequality per capita GDP, urbanization, fertility rate, and globalization have a direct impact, while per capita arable land, government consumption and agriculture sector have a negative impact (Munir and Sultan 2017). Anwar (2003), showed the trends in inequality by using Gini and Lorenz Curve in Pakistan and revealed that in urban areas inequality has deteriorated, while it has expanded in rural areas during this period. Results also showed the increasing trend of inequality in rural Punjab and decreasing trend of inequality in others provinces i.e., Sindh, NWFP, and Balochistan. Yousuf and Sasaki (2003), measured the inequality of the years from 1972 to 1997 among the four regions (Balochistan, KPK, Punjab, and Sindh) of Pakistan, stated that Baluchistan is comparatively inferior to other three regions and specified that the public capital has been allocated less efficiently in the backward region whereas more efficiently in advanced in the region. Anwar (2007), examined inequality at the provincial and regional level in Pakistan and showed that except few sectors inequality increased in most of the sectors. Dean et al., (2020), revealed the possibilities to diminish the income inequalities and promote equal distribution of resources of all sections of the population in Pakistan. Different studies revealed that the gap between haves and haves-nots is broadening. Income inequality in Pakistan has raised and the situation of distribution of assets is not satisfactory, which is the foremost reason for unequal distribution of income in Pakistan (Hamid and Akram 2014). Touseef et al. (2015), examined the tendencies of income inequality in Pakistan and exposed that in rural areas high-income families are those with the largest number of family members and low-income

families are those with the lowest number of family members. Thus, when income is divided on a per capita basis inequality decreased because the higher incomes of large families are distributed to a large number of people and the small incomes of small families are distributed to a small number of people. Hassan and Malik (2019), calculated the income inequality in the province of Punjab and revealed that the highest income inequality exists in Lahore.

a. Literature Gap

Different studies are examined and introduced in form of a literature review. In Pakistan, few studies are about income inequality at the provincial level and its urban and rural areas. In Pakistan studies mostly focused on the provincial level and rural and urban areas, district level and divisional level are mostly ignored. It's very important to reduce income inequality for the development of the country. So, in this study income inequality, is calculated at provincial level and divisional levels.

3. Data Source and Methodology

a. Data Source

The secondary data utilized in this study is used from PSLM (2018-19) and PSLM (2013-14). PSLM (2018-19) is the 11th round of survey series, started in 2004. The current round of PSLM/HIES is the provincial level survey which covered 24809 households. Household income data is calculated from PSLM (2018-19).

b. Theoretical Framework

i. Lorenz Curve

Lorenz curves at a large distance from the 45° line indicate higher income inequality than the curve near 45° to the line (Kemal 2006). A Lorenz curve developed by American Economists Max O. Lorenz in 1905, is a graphical representation of Wealth inequality or Income inequality (Lorenz 1905). The Lorenz curve plots the percentage of the population on the x-axis and the percentage of the income on the y-axis. Lorenz curve is typically used to describe income inequality and mostly used to represent economic inequality. The level of unequal distribution expands when the Lorenz curve drifts away from the line of equality. Gini Coefficient can be calculated by using Lorenz Curve because the area between the straight (line of equality) and curved lines shows the Gini Coefficient.

Let X be the outcome variable of interest (e.g., income). The cumulative distribution function of X is given as $F_X(x) = \Pr(X \leq x)$, for continuous X, the Lorenz curve L is given as:

$$L(F(x)) = \frac{\int_{-\infty}^{y} xF_X d(x)}{\int_{-\infty}^{\infty} xF_X d(x)}$$

Intuitively, a point on the Lorenz curve quantifies the proportion of total outcome of the poorest p×100 percent of the population. This can easily be seen in the finite population form of LX(p), which is

$$L(F(x)) = \frac{\int_{-\infty}^{y} xdF(x)}{\mu}$$

Where, F(x) is the cumulative distribution function of ordered individuals and μ is the average size.

ii. Gini Coefficient

The Gini Coefficient is a measure of income distribution in a population developed in 1912 by the Italian statistician Corrado. It is often used as a measure of economic inequality, a measure of the income distribution, or a measure of the distribution of wealth in general among a population. The numerical potential ranges from 0 (or 0%) to 1 (or 100%), with 0 correlates the perfect equality this shows that all members of society possess an equal amount of income, and 1 representing the perfect inequality. More than 1 value is theoretically possible due to negative income or wealth. According to Thomas et al. (2017), There are two ways to Calculate Gini: The direct method (mathematically) and Indirect method in which first constructs the income Lorenz curve, with the cumulative percentage of the population on the horizontal axis and cumulative percentage of the income on the vertical axis. In this study, the Indirect method is used to calculate the Gini coefficient which describes Gini Index as the ratio between 45° lines is called line of equality and Lorenz curve to the total area below the line of equality. The capacity of the Gini equals the ratio of two areas, with the area of an egalitarian triangle as denominator and area between Lorenz curve and line of equality as the numerator, which can be written as:

$$\textbf{Gini} = \frac{\textit{Area between Egalitarian and Lorenz curve}}{\textit{Area of Egalitarian Triangle}}$$

c. Methodology

This study clarified that there is a large number of indices have been recommended in the literature to determine income inequality. Gini, Lorenz curve, CV, inter-quartile range, ratios of income received by highest and lowest income groups, etc. and normative measures that take into consideration assessment of society towards welfare of several sections of the population such as Theil's entropy measure (Wasim and Munir 2017; Maslikhina 2016), Atkinson's Index (Atkinson et al. 2017; Rehman et al. 2015; Asad and Ahmad 2011), etc. are included in these indices. Gini coefficients and Lorenz curve are the two most important and especially Gini Coefficients are considered as the best scalar measure of inequality (Ferreira 2020) is used in different articles to calculate income inequality (Ali and Tahir 1999; Bourguignon and Morrison 2002; Anwar 2009; Atkinson et al. 2017). Gini for calculating income inequality and Lorenz curve is calculated by many researchers (Anwar 2003; Hamid and Akram 2014; Cheong and Wu 2013; Rehman et al. 2015) are used for determining fluctuations in income inequalities.

The most popular used measures are:

- Lorenz curve
- Gini

i. Income Inequality

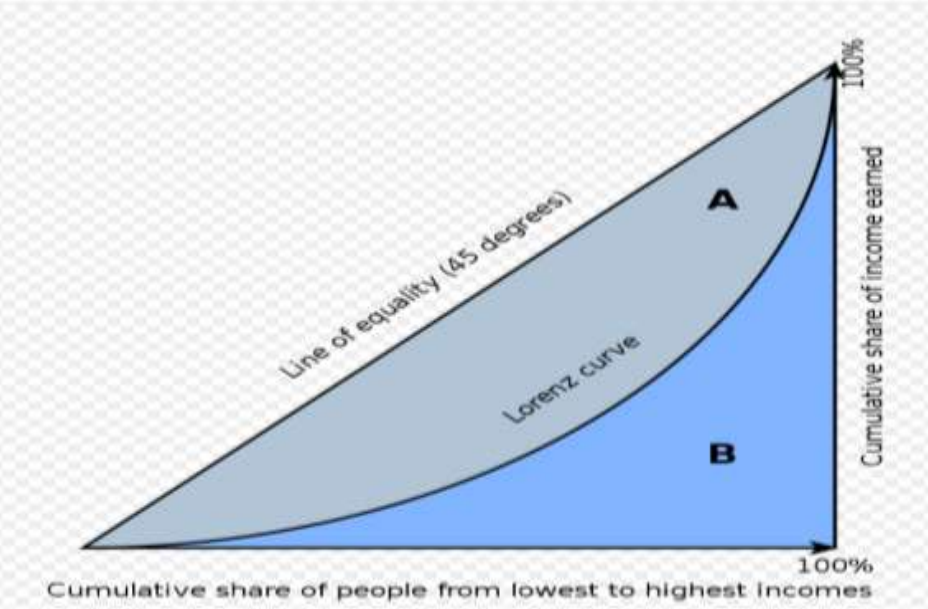
A common way to measure income inequality is to rank all households by income, from lowest to highest, and then divide all households into five groups based on the number of people which is called the quintiles. This calculation makes it possible to measure the distribution of income in five groups on the total. The first quintile is the lowest fifth or 20%, the second quintile is the next lowest, and so on. By comparing income inequality, it is possible to estimate the share of total income earned per quintile. According to Danovan et al. (2016), a quintile is a 1/5th portion of the whole population. In statistics, it is a population or sample divided into five equal groups in which every group present 20 percent of the whole population.

These Quintiles can be expressed as follows:

- 0-20% is the first Quintile or bottom Quintile.
- 20-40% is the second Quintile.
- 40-60% is the third Quintile.
- 60-80% is the fourth Quintile.
- 80%-100% is the fifth or top Quintile.

In this study, Gini Coefficient and Lorenz Curves are used to calculate Income Inequality among four provinces of Pakistan. Lorenz curve is calculated by using a cumulative percentage of the population on the horizontal axis and a cumulative percentage of the income on the vertical axis.

Figure 1



According to Kruijk (1986), in all province's income inequality is greater in urban areas than in rural areas. In this study, income inequality not only at provincial level but also for rural and urban areas is calculated. Provinces are divided into their divisions, every division has its own rural and urban areas. So, income inequality is calculated for both areas.

ii. Convergence or Divergence in Inequalities

In this part of the study, there is a discussion about our third statement of the problem which is: *Is there convergence or divergence in income inequality?* To answer this question, data from PSLM (2013-14) is also selected to compare with PSLM (2018-19), to check whether there is convergence or divergence in income inequality. Sutcliffe (2005), calculated the Gini coefficient of different countries from 1960 to 2000 to explain the convergence or divergence in these countries, and Seguino (2013), calculated the Gini coefficient of different countries and calculated the trends in income inequality. By following their work, in this study Gini is calculated for the year 2013-14 and 2018-19 to estimate the convergence or divergence in inequalities. Percentage change is also calculated to check how much increase or decrease occurred in income inequality at the provincial level and divisional level of Pakistan.

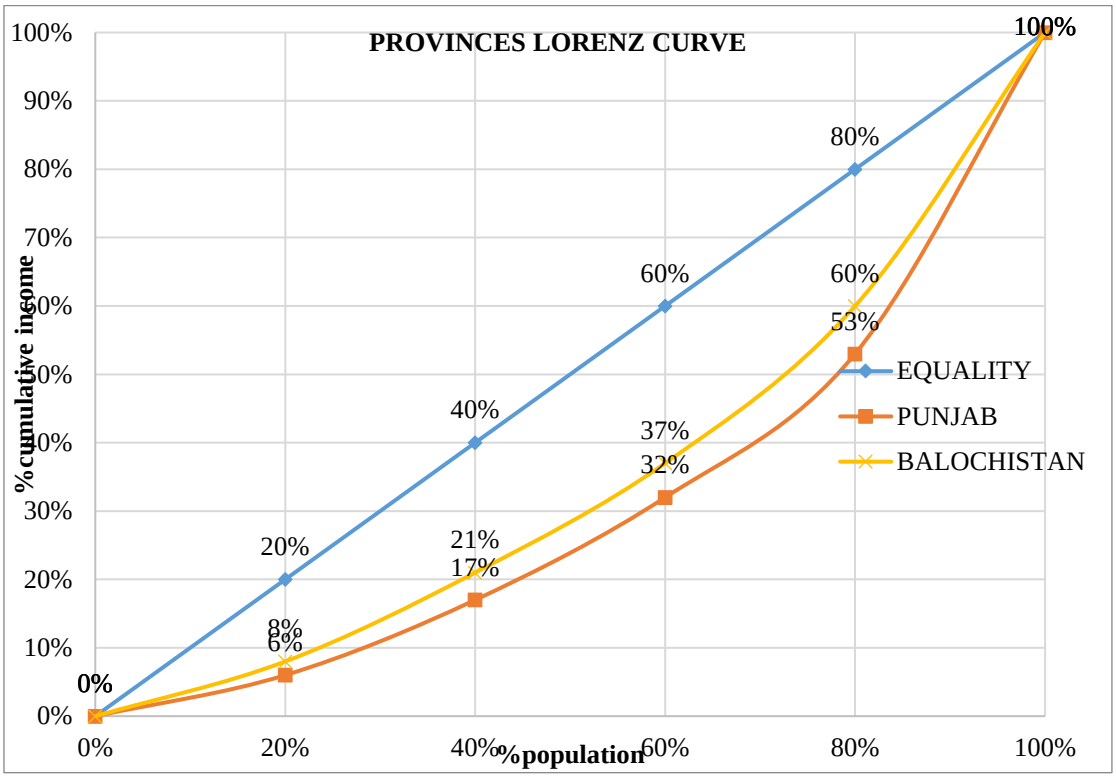
4. Empirical Results and Discussion

a. Results and Discussion

In this study, Income inequality is calculated at the provincial and divisional level of Pakistan, for this purpose Lorenz curves are constructed and Gini coefficients are calculated from these curves.

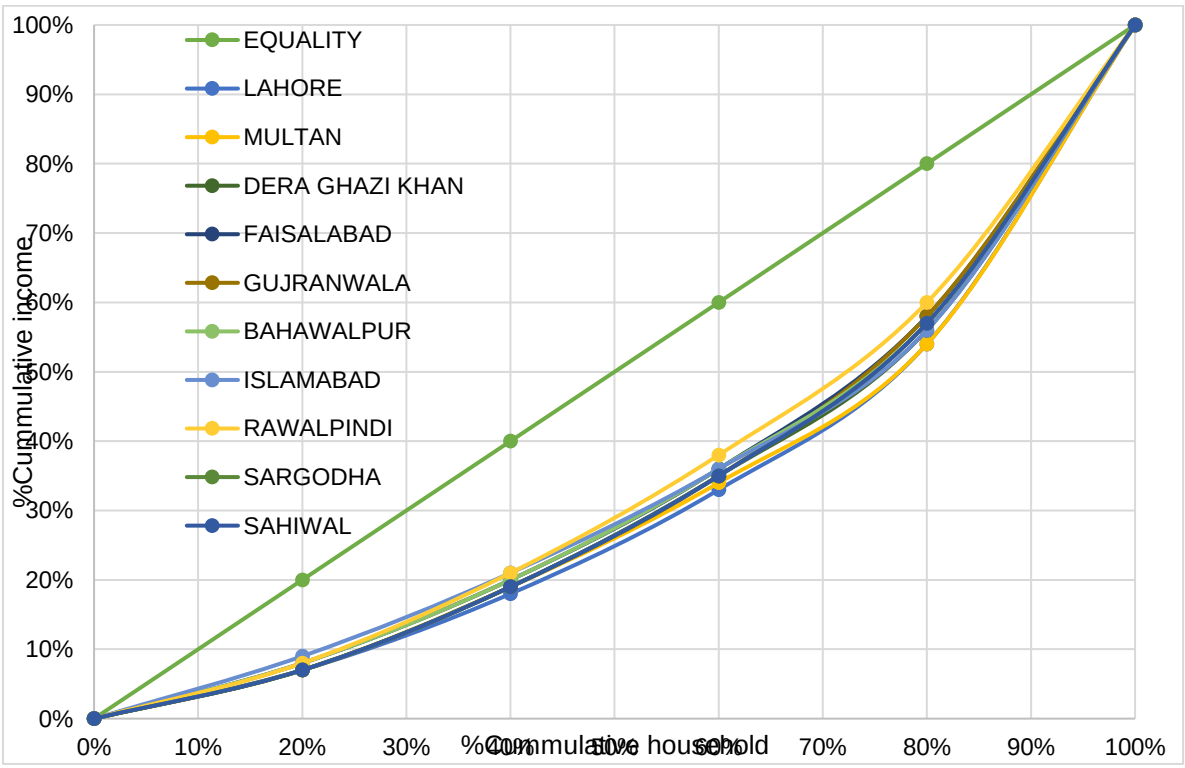
Figure 2 shows Lorenz curves that have been fitted to data that explains the income distribution in Balochistan and Punjab, in 2018-19, compared to the straight diagonal line which is representing perfect equality. In Punjab, there is higher income inequality than Balochistan. As shown in Figure 2 Balochistan Lorenz curve is closer to the line of equality it means that in Balochistan there is less income inequality than Punjab. In Balochistan, there is a relatively equalitarian tribal structure population relatively relies more on domestic remittances (Pasha, 2018). In Balochistan, lower 20% people have 8% of total income while the richest 20% have 40% of total income. Middle 60% of the people have 50% of total income. In Punjab, 20% people have 6%% of total income while the richest 20% have 47% of total income. Middle 60% of the people have 47% of total income.

In rural Lahore and Multan, there is more inequality and in Rawalpindi there is less income inequality than in other divisions of Punjab. In rural areas of Rawalpindi, lower 20% of people have 8% of income while richest 20% of people have 40% of income. Whereas, middle 60% of the people have 52% of the income. In rural areas of Islamabad, lower 20% of people have 9% of income while richest 20% of people have 44% of income. Whereas, middle 60% of the people have 47% of the income. The income patterns in Sargodha, Faisalabad, are almost similar to Islamabad. In rural areas of Gujranwala, bottom 20% people have only 7% of the total income while richest 20% have 42% of the total income. In rural areas of Lahore and Multan, there is the same inequality and more inequality than other rural areas of division in Punjab. In rural areas Lahore and Multan, lower 20% of people have 7% of the total income while richest 20% of people have 46% of income. Whereas, middle 60% of the people have 47% of the income. In rural areas of Sahiwal and DGK, lower 20% of the people in both divisions have only 7% of the total income while richest 20% people have 43% and 44% of the total income respectively. sIn rural areas of Bahawalpur, lower 20% of people have 8% of the total income while richest 20% of people have 43% of the total income.



Source: Authors' calculation: PSLM/ HIES (2018-2019)

Figure 2: Provinces Lorenz Curve 2018-19



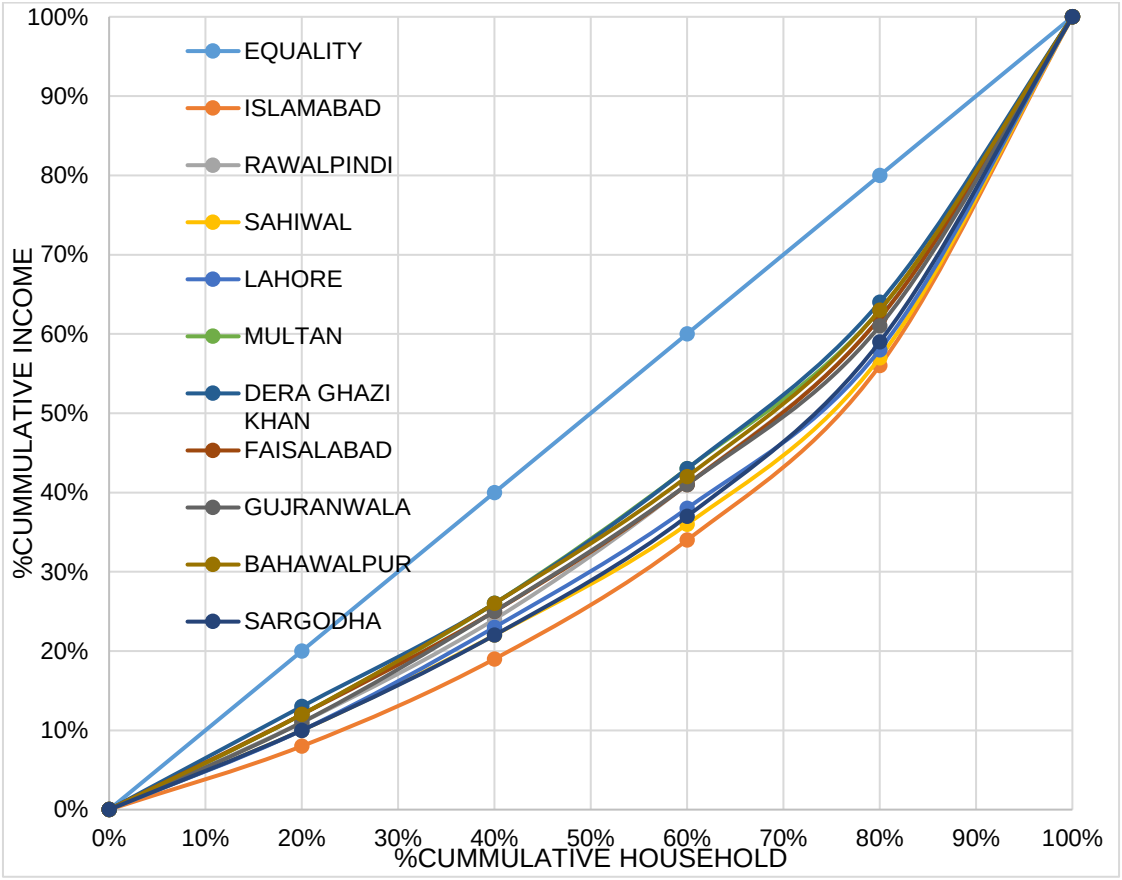
Source: Authors' calculation: PSLM (2018-2019)

Figure 3: Lorenz curve of Punjab rural areas of the divisions 2018-19

Lorenz curve of nine divisions of urban areas of Punjab shown in Figure 4. There is more inequality in Islamabad and Sahiwal While inequality is less in Multan and DGK than the other divisions of Punjab.

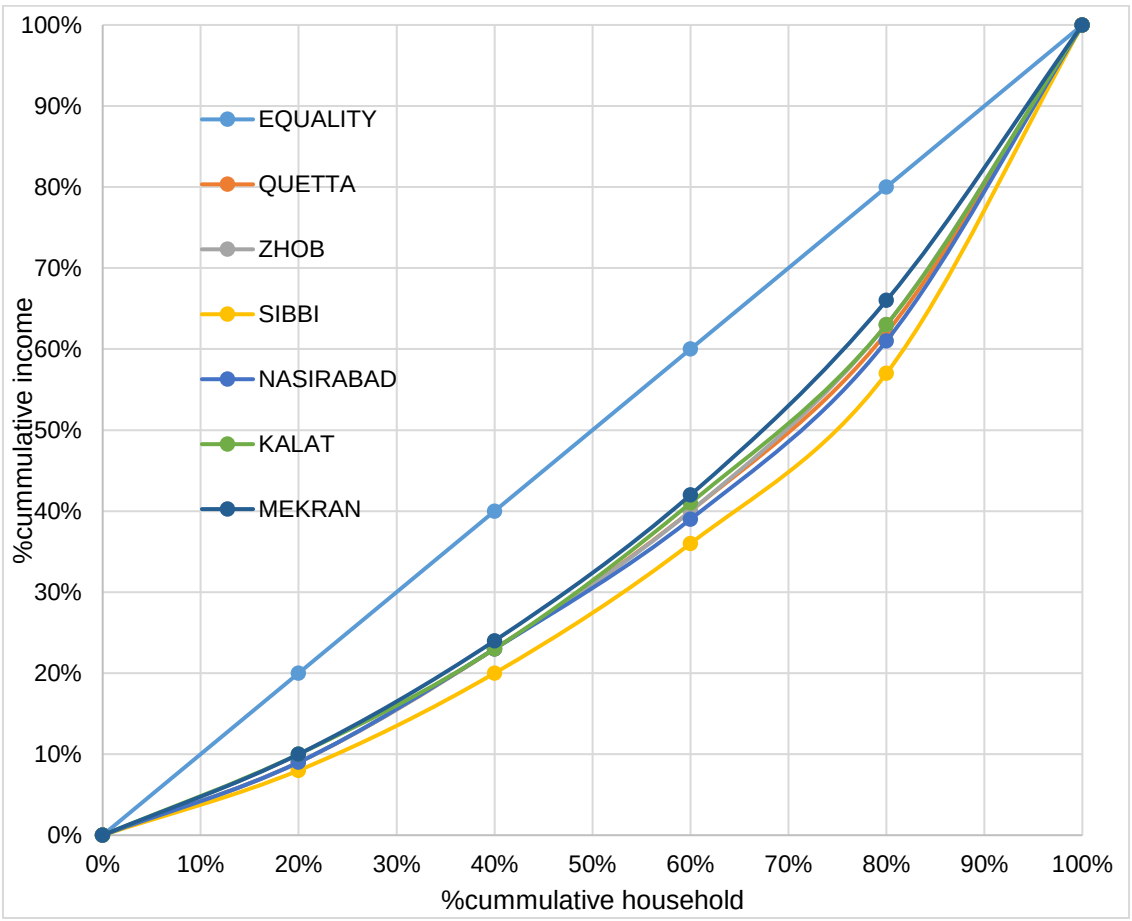
In urban areas of Multan, lower 20% of the people have 12% of the total income while the richest 20% of the people have 37% of the total income. In urban areas of DGK, lower 20% of the people have 13% of the total income while the richest 20% of the people have 36% of the total income. In urban areas of Faisalabad, lower 20% of the people have 12% of the total income while the richest 20% of the people have 38% of the total income. In urban areas of Gujranwala, lower 20% of the people have 11% of the total income while the richest 20% of the people have 39% of the total income. In urban areas of Sahiwal, lower 20% of the people have 10% of the total income while the richest 20% of the people have 43% of the total income. In urban areas of Islamabad, lower 20% of the people have 8% of the total income while the richest 20% of the people have 44% of the total income. In urban areas of Sargodha, lower 20% of the people have 10% of the total income while the richest 20% of the people have 41% of the total income. In urban areas of Lahore, lower 20% of the people have 10% of the total income while the richest

20% of the people have 42% of the total income. In urban areas of Bahawalpur, lower 20% of the people have 12% of the total income while the richest 20% of the people have 37% of the total income.



Source: Authors' calculation: PSLM/HIES (2018-2019)

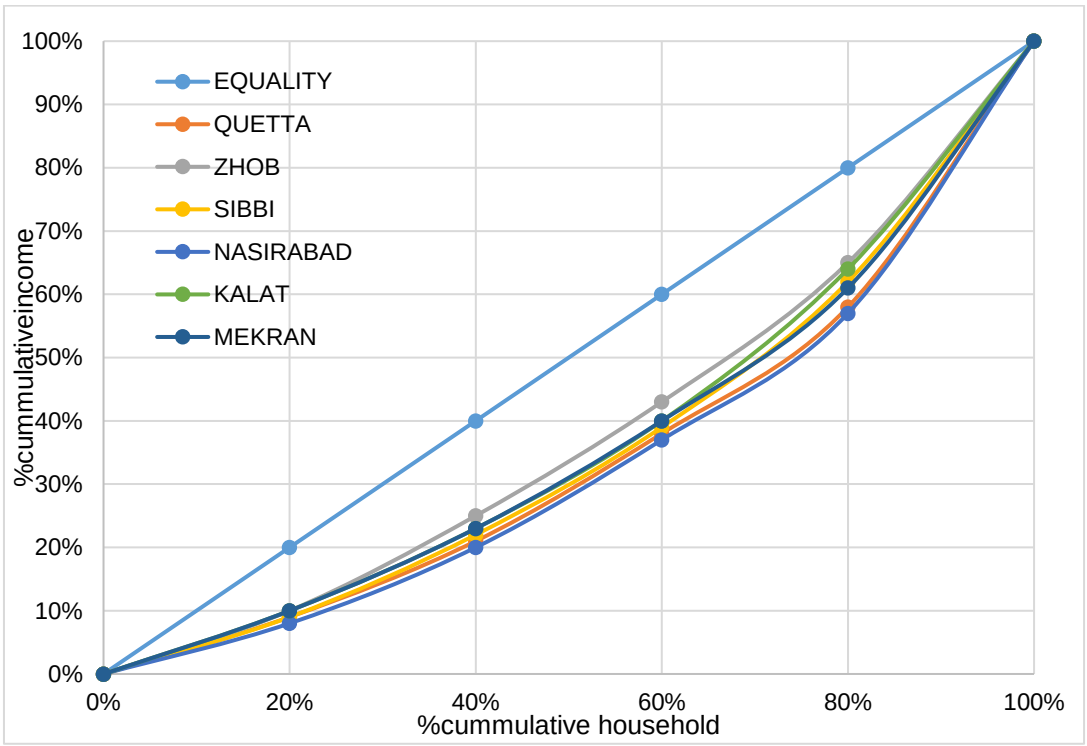
Figure 4: Lorenz curve of Punjab urban areas of the divisions 2018-19



Source: Authors' calculation: PSLM/HIES (2018-2019)

Figure 5: Lorenz curve of Balochistan rural areas of the divisions 2018-19

Lorenz curve of six divisions of rural areas of Balochistan are shown in Figure 5. In Sibbi there is more and in Mekran there is less income inequality than other divisions of Balochistan. In rural areas of Quetta, lower 20% of people have 9% of income while richest 20% of people have 38% of income. Whereas, middle 60% of the people have 53% of the income. In rural areas of Zhob, lower 20% of people have 9% of income while richest 20% of people have 37% of the total income. Whereas, middle 60% of the people have 54% of the total income. In rural areas of Sibbi, lower 20% of people have 8% of the total income while richest 20% of people have 43% of income. Whereas, middle 60% of the people have 49% of the total income. In rural areas of Nasirabad, lower 20% of people have 9% of the total income while richest 20% of people have 39% of income. Whereas, middle 60% of the people have 52% of the total income. In rural areas of Kalat, lower 20% of people have 10% of the total income while richest 20% of people have 37% of income. Whereas, middle 60% of the people have 52% of the total income. In rural areas of Mekran, lower 20% of people have 10% of the total income while richest 20% of people have 34% of income. Whereas, middle 60% of the people have 54% of the total income.



Source: Authors' calculation: PSLM/HIES (2018-2019)

Figure 6: Lorenz curve of Balochistan urban areas of the divisions 2018-19

Lorenz curve of six divisions of urban areas of Balochistan in Figure 6. In Nasirabad and Quetta, there is more and in ZHOB there is less income inequality than other divisions of Balochistan.

In urban areas of Quetta, lower 20% of people have 9% of the total income while richest 20% of people have 42% of the total income. Whereas, middle 60% of the people have 49% of the total income. In urban areas of Zhob, lower 20% of people have 10% of the total income while richest 20% of people have 35% of the total income. Whereas, middle 60% of the people have 55% of the total income. In urban areas of Sibbi, lower 20% of people have 9% of the total income while richest 20% of people have 38% of the total income. Whereas, middle 60% of the people have 53% of the total income. In urban areas of Nasirabad, lower 20% of people have 8% of the total income while richest 20% of people have 43% of the total income. In urban areas of Kalat, lower 20% of people have 10% of the total income while richest 20% of people have 36% of the total income. In urban areas of Mekran, lower 20% of people have 10% of the total income while richest 20% of people have 39% of the total income. Whereas, middle 60% of the people have 51% of the total income.

b. Convergence or Divergence in Income Inequality

Table 1: Income Gini 2013-14 & 2018-19

PROVINCES TOTAL	2013-14	2018-19	Difference	change	Percentage change	rising or falling	Convergence or Divergence
PUNJAB	0.44	0.4	-0.04	-	-9%	Falling	Convergence
BALOCHISTAN	0.3345	0.32	-0.0145	-	-4%	Falling	Convergence
URBAN							
PUNJAB	0.436	0.397	-0.039	-	-9%	Falling	Convergence
BALOCHISTAN	0.343	0.314	-0.029	-	-8%	Falling	Convergence
RURAL							
PUNJAB	0.413	0.3728	-0.0402	-	-9.7%	Falling	Convergence
BALOCHISTAN	0.3134	0.3132	-0.0002	-	-0.06%	Falling	Convergence

Source: Author's calculation, PSLM (2018-19)

As shown in Table 1, in Punjab and Balochistan there is convergence of income inequality from 2013-14 to 2018-19. Punjab situation of income inequality is worse than Balochistan. These results are little similar to the results of Hamid et al. (2014), who observed that income inequality is less in Balochistan, and greater in Punjab. Gini coefficient is higher in urban areas can be explained as there is more diversification of skills in urban areas than in rural areas, where workers have more uniform skills.

Table 2: Punjab Income Gini 2013-14 & 2018-19

PUNJAB RURAL	2013-14	2018-19	Difference	change	% Change	rising or falling	Convergence or Divergence
LAHORE	0.4888	0.38	-0.10876	-	-22%	Falling	Convergence
SAHIWAL	0.421	0.35	-0.071	-	-17%	Falling	Convergence
GUJRANWALA	0.395	0.34	-0.055	-	-14%	Falling	Convergence
ISLAMABAD	0.389	0.34	-0.049	-	-13%	Falling	Convergence
MULTAN	0.388	0.38	-0.008	-	-2%	Falling	Convergence
BAHAWALPUR	0.385	0.34	-0.045	-	-12%	Falling	Convergence
DGK	0.3745	0.37	-0.0045	-	-1%	Falling	Convergence
SARGODHA	0.3559	0.35	-0.0059	-	-2%	Falling	Convergence
FAISLABAD	0.3246	0.35	0.0254	+	8%	rising	Divergence
RAWALPINDI	0.307	0.31	0.003	+	1%	rising	Divergence

PUNJAB URBAN	2013-14	2018-19	Difference	Change	% change	rising or falling	Convergence or Divergence
LAHORE	0.42	0.31	-0.11	-	-26%	Falling	Convergence
SAHIWAL	0.61	0.32	-0.29	-	-48%	Falling	Convergence
GUJRANWALA	0.3597	0.27	-0.0897	-	-25%	Falling	Convergence
ISLAMABAD	0.745	0.35	-0.395	-	-53%	Falling	Convergence
MULTAN	0.4	0.24	-0.16	-	-40%	Falling	Convergence
BAHAWALPUR	0.42	0.25	-0.17	-	-40%	Falling	Convergence
DGK	0.37	0.24	-0.13	-	-35%	Falling	Convergence
SARGODHA	0.386	0.31	-0.076	-	-20%	Falling	Convergence
FAISALABAD	0.33	0.27	-0.06	-	-18%	Falling	Convergence
RAWALPINDI	0.35	0.26	-0.09	-	-26%	Falling	Convergence

Source: Author's calculation, PSLM (2018-19)

As shown in Table 2, from 2013-14 to 2018-19 only in Faisalabad and Rawalpindi rural areas there is divergence in income inequality and in all other rural and urban areas of Punjab, there is the convergence of income inequality. In Multan, Lahore, and DGK rural areas there is more income inequality with Gini 0.38, 0.38, and 0.37 respectively. In Islamabad, Sahiwal, and Lahore urban areas, there is more income inequality than all other urban areas. According to data 2018-19, in urban areas inequality is higher this result is similar to Anwar (2003), which stated that in Punjab urban areas inequality has decreased and in rural areas inequality has increased.

Table 3: Balochistan income Gini 2013-14 & 2018-19

BALOCHISTAN RURAL	2013-14	2018-19	Difference	Change	% change	rising or falling	Convergence or Divergence
KALAT	0.34	0.28	-0.060	-	-18%	Falling	Convergence
NASIRABAD	0.28	0.29	0.010	+	4%	Rising	Divergence
QUETTA	0.279	0.28	0.001	+	0.34%	Rising	Divergence
SIBBI	0.31	0.35	0.040	+	13%	Rising	Divergence
ZHOB	0.31	0.28	-0.030	-	-9.60%	Falling	Convergence

BALOCHISTAN URBAN	2013-14	2018-19	Difference	Change	% change	rising or falling	Convergence or Divergence
KALAT	0.22	0.27	0.05	+	23%	Rising	Divergence
NASIRABAD	0.39	0.34	-0.05	-	-13%	Falling	Convergence
QUETTA	0.33	0.33	0		0%	no change	no change
SIBBI	0.39	0.29	-0.1	-	-26%	Falling	Convergence
ZHOB	0.287	0.25	-0.037	-	-13%	Falling	Convergence

Source: Author's calculation, PSLM (2018-19)

As shown in Table 3, in income inequality of Balochistan from 2013-14 to 2018-19, In Nasirabad and Quetta urban areas, income inequality is higher with income Gini 0.34 and 0.33 respectively. In Sibbi and Nasirabad rural areas, income inequality is higher with Income Gini 0.35 and 0.29 respectively. In rural areas of Nasirabad, Quetta, and Sibbi, and urban areas of Kalat

there is divergence in income inequality. In all other rural and urban areas of Balochistan, there is the convergence of income inequality and in Quetta urban areas there is no change in income inequality.

5. Conclusion and Policy Recommendations

This study analyzed the income inequality among two provinces of Pakistan and divisions of these provinces to focus on which areas need more attention for the development of Pakistan. For this purpose, Lorenz curves are constructed and Gini coefficients are calculated from these curves. Firstly, this study concluded that income inequality is greater in Punjab with Gini 0.4 and less in Balochistan with Gini 0.32. So, it's very important to reduce income inequality in Punjab for the development of Pakistan and focus on the Balochistan which is considered as the most deprived province because Pakistan's development not only depends on Punjab but also on the Balochistan. Secondly, this study analyzed that income inequality is greater in urban areas and less in rural areas. Results based on divisions revealed that, In Punjab divisions, in Multan, Lahore, and DGK rural areas there is more income inequality with Gini 0.38, 0.38, and 0.37 respectively. In Islamabad, Sahiwal, and Lahore urban areas, there is more income inequality than all other urban areas. In Balochistan divisions, in Nasirabad and Quetta urban areas income inequality is higher with income Gini 0.34 and 0.33 respectively. In Sibbi and Nasirabad rural areas, income inequality is higher with Income Gini 0.35 and 0.29 respectively. So, for the development of Pakistan every area needs equal attention and equal distribution of resources. In Punjab and Balochistan Gini coefficient is less than from 2013-14, which indicates that situation is better than before but it is not satisfactory because percentage change is minor than in Punjab. All areas in which income inequality is diverged needs more attention and equal distribution as like other divisions and provinces.

People who live in villages should be educated, employment opportunities should be created and developmental expenditures should be promoted. In villages, two reasons why people are not going to school are discussed which are: too expensive and too far. Raise the productivity of the poor by Investing in children (quality education and Health), Investing in Infrastructure (rural roads, electrification), etc. Free skills-oriented programs should be promoted, poor people can also get benefit from these programs and learn useful skills. People mostly migrate towards the urban areas for better job opportunities. So, there is a need to provide employment opportunities in rural areas to reduce income inequality.

References

Afonso, H., LaFleur, M., & Alarcón, D. (2015). Concepts of Inequality: Development Issues No. 1. *New York, USA: Development Strategy and Policy Analysis Unit in Development Policy and Analysis Division, UN/DESA*.

Ahmed, M., & Baloch, A. (2015). Political Economy of Balochistan, Pakistan: A Critical Review. *European Scientific Journal*, *11*(14).

Akhtar, S. (2008). Trends in regional inequalities in Pakistan: Evidence since 1998. *The Lahore Journal of Economics*, *13*, 205-220.

Ali, A. (2018). Issue of Income Inequality Under the Perceptive of Macroeconomic Instability: An Empirical Analysis of Pakistan. *Pakistan Economic and Social Review*, 56(1), 121-155.

Ali, A., & Audi, M. (2016). The Impact of Income Inequality, Environmental Degradation and Globalization on Life Expectancy in Pakistan: An Empirical Analysis. *International Journal of Economics and Empirical Research*, 4 (4), 182-193.

Ali, A., Audi, M., Bibi, C., & Roussel, Y. (2021). The Impact of Gender Inequality and Environmental Degradation on Human Well-being in the Case of Pakistan: A Time Series Analysis. *International Journal of Economics and Financial Issues*, *11*(2), 92-99.

Ali, S. S., Tahir, S., & Arif, G. M. (1999). Dynamics of growth, poverty, and inequality in Pakistan [with Comments]. *The Pakistan Development Review*, 837-858.

Ali, S., & Hafeez, E. (2017). The Pakistani youth buldge: A ticking time bomb. *Online: https://www. dawn. com/news/1341111 (retrieved 28.6. 2018)*.

Amir, H., & Bilal, K. (2011). Income Inequality measurement in Pakistan and its four provinces by Lorenz curve. *Journal of Asian Scientific Research*, *1*(4), 204.

Anderson, K., & Pomfret, R. (2004). *Spatial inequality and development in Central Asia* (No. 2004/36). WIDER Research Paper.

Anwar, T. (2005). *Long-term Changes in Income Distribution in Pakistan: Evidence Based on Consistent Series of Estimates. CRPRID, August*. Islamabad. (Discussion Paper No. 3.).

Anwar, T. (2007). Growth and sectoral inequality in Pakistan: 2001-02 to 2004-05. *Pakistan Economic and Social Review*, 141-154.

Anwar, T. (2009). Measuring inequality of consumption and opportunities in pakistan: 2001-02 and 2004-05. *Pakistan Economic and Social Review*, 157-181.

Anwar, T., & Bilquees, F. (2003). Trends in Inequality in Pakistan between 1998-99 and 2001-02 [with Comments]. *The Pakistan Development Review*, 809-821.

Asad, M. A., & Ahmad, M. (2011). Growth and consumption inequality in Pakistan. *Pakistan Economic and Social Review*, 69-89.

Atkinson, A. B., & Bourguignon, F. (2015). Introduction: Income distribution today. *Handbook of income distribution*, *2*, xvii-64.

Atkinson, A. B., & Bourguignon, F. (Eds.). (2014). *Handbook of income distribution* (Vol. 2). Elsevier.

Atkinson, A. B., Leventi, C., Nolan, B., Sutherland, H., & Tasseva, I. (2017). Reducing poverty and inequality through tax-benefit reform and the minimum wage: the UK as a case-study. *The Journal of Economic Inequality*, *15*(4), 303-323.

Banerjee, A., & Duflo, E. (2011). More than 1 billion people are hungry in the world. *Foreign Policy*, (186), 66-72.

Banya, B., & UODUCnON, L. I. M. (1995). Income Inequality in Developing Countries. *Honors Projects*.

Boldrin, M., & Canova, F. (2001). Inequality and convergence in Europe's regions: reconsidering European regional policies. *Economic policy*, *16*(32), 206-253.

Bourguignon, F., & Morrisson, C. (2002). Inequality among world citizens: 1820-1992. *American economic review*, *92*(4), 727-744.

Brian, K. (2015). *OECD insights income inequality the gap between rich and poor: The gap between rich and poor*. oecd Publishing.
Burki, A. A., Memon, R., & Mir, K. (2015). *Multiple inequalities and policies to mitigate inequality traps in Pakistan*. Oxfam International.
Caballero, C., Edwards, R., & Puthussery, S. (2008). *Parenting'mixed'children: difference and belonging in mixed race and faith families*. Joseph Rowntree Foundation.
Cheong, T. S., & Wu, Y. (2014). The impacts of structural transformation and industrial upgrading on regional inequality in China. *China Economic Review*, *31*, 339-350.
Cizakca, M. (2024). Understanding the Determinants of Foreign Trade Volume in Turkiye: An Empirical Analysis. *Journal of Business and Economic Options*, *7*(1), 19-28.
Corps, M. (2019). Quick facts: What you need to know about global hunger.
Cowell, F. (2011). *Measuring inequality*. Oxford University Press.
De Kruijk, H., & Naseem, S. M. (1986). Inequality in the Four Provinces of Pakistan [with Comments]. *The Pakistan Development Review*, *25*(4), 685-706.
De Maio, F. G. (2007). Income inequality measures. *Journal of Epidemiology & Community Health*, *61*(10), 849-852.
Dean, E., Elardo, J., Green, M., Wilson, B., & Berger, S. (2020). Government Policies to Reduce Income Inequality. *Principles of Economics: Scarcity and Social Provisioning (2nd Ed.)*.
Desa, U. (2020). World social report 2020: Inequality in a rapidly changing world.
Donovan, S. A., Labonte, M., & Dalaker, J. (2016). The US income distribution: Trends and issues. *CRS Report, US Congressional Research Service, Washington, DC*.
Eastwood, R., & Lipton, M. (2000). *Rural-Urban Dimensions of Inequality Change. Working Papers*. UNU/WIDER Publications, Katajanokanlaituri 6 B, 00160, Helsinki, Finland.
EBRD. (2016). Transition Report 2016–17: Transition for All: Equal Opportunities in an Unequal World.
Ferreira, F. (2020). *Let's talk development.*
Guterres, A. (2020). World Economic Situation Prospects 2020. *United Nations Con*.
Hamid, A., & Akram, N. (2014). Multi-dimensional income inequality in Pakistan. *International Journal of Economics and Business Research*, *8*(1), 21-35.
Hamid, A., Akram, N., & Shafiq, M. (2013). Inter and Intra Provincial Educational Disparities in Pakistan. *Pakistan Journal of Social Sciences (PJSS)*, *33*(2).
Hasan, P., Streeten, P., & Qureshi, S. A. (1998). Pakistan at the Threshold of the 21st Century: How to Shape a Better Economic Future? [with Comments]. *The Pakistan Development Review*, 85-122.
Heidenreich, M., & Wunder, C. (2008). Patterns of regional inequality in the enlarged Europe. *European Sociological Review*, *24*(1), 19-36.
Heintz, J. (2006). *Globalization, economic policy and employment: Poverty and gender implications*. Geneva: International Labour Organization.
Husain, I. (2009). The role of politics in Pakistan's Economy. *Journal of International Affairs*, *63*(1), 1-18.
Husain, I. (2018). Pakistan's economy and regional challenges. *International Studies*, *55*(3), 253-270.
Ibrahim, M., & Rasheed, A. (2024). Exploring the Link Between Customer Relationship Management and Hotel Performance. *Journal of Policy Options*, *7*(1), 1-10.
Imai, K. S., & Malaeb, B. (2016). *Asia's rural-urban disparity in the context of growing inequality*. Research Institute for Economics and Business Administration, Kobe University.
JAFRI, S. Y., & Khattak, A. (1995). Income inequality and poverty in Pakistan. *Pakistan Economic and Social Review*, 37-58.
Jamal, H., & Khan, A. J. (2003). The changing profile of regional inequality. *The Pakistan Development Review*, 113-123.
Jann, B. (2016). Estimating Lorenz and concentration curves. *The Stata Journal*, *16*(4), 837-866.
Kanbur, R., & Stiglitz, J. E. (2016). Dynastic inequality, mobility and equality of opportunity. *The Journal of Economic Inequality*, *14*(4), 419-434.
Karim, A., & Said, F. (2024). Discussion on Malaysia's Globalization Journey From Resource-Based Economy to Global Player. *Journal of Business and Economic Options*, *7*(1), 29-38.
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*.
Khan, S. M., Shaheen, M., & Ahmad, M. (2019). Horizontal inequalities and identity conflicts: A study of Pakistan. *Journal of the Research Society of Pakistan*, *56*(2), 307.
Khan, S., Khan, S. A., & Tariq, M. The Analysis of Income Inequality and Economic Growth Relationship: Evidence from Pakistan's Data.
Kirmani, N. (2020). The spectre of inequality. *the news.*
Klasen, S. (2016). What to do about rising inequality in developing countries?
Lorenz, M. O. (1905). Methods of measuring the concentration of wealth. *Publications of the American statistical association*, *9*(70), 209-219.
Mahmood, Z., & Tahir, S. (1984). Income inequality in Pakistan: an analysis of existing evidence [with comments]. *The Pakistan Development Review*, *23*(2/3), 365-379.
Maslikhina, V. Y. (2016). Interregional inequality: A case study in Russia. *International Journal of Economics and Financial Issues*, *6*(8S).
Munir, K., & Sultan, M. (2017). Macroeconomic determinants of income inequality in India and Pakistan. *Theoretical & Applied Economics*, *24*(4).
Munir, Q., Akram, B., & Abbas, S. A. (2024). Understanding Stock Price Dynamics with Dividend-Related Metrics and Financial Indicators in Pakistan's Non-Financial Sectors. *Journal of Business and Economic Options*, *7*(1), 1-9.
Neckerman, K. M., & Torche, F. (2007). Inequality: Causes and consequences. *Annu. Rev. Sociol.*, *33*, 335-357.

Ortiz, I., & Cummins, M. (2011). Global inequality: Beyond the bottom billion–a rapid review of income distribution in 141 countries. *Available at SSRN 1805046*.

Ortiz, I., Moreira Daniels, L., & Engilbertsdóttir, S. (2012). Child poverty and inequality: New perspectives. *Available at SSRN 2039773*.

Østby, G. (2013). Inequality and political violence: A review of the literature. *International Area Studies Review*, *16*(2), 206-231.

Paprotny, D. (2021). Convergence Between Developed and Developing Countries: A Centennial Perspective. *Social indicators research*, *153*(1), 193-225.

Pasha, H. A. (2018). *Growth and Inequality in Pakistan*. Friedrich-Naumann-Stiftung für die Freiheit.

Population Reference Bureau. (2016). 2016 world population data sheet with a special focus on human needs and sustainable resources.

Reddy, A. A., & Bantilan, M. C. S. (2013). Regional disparities in Andhra Pradesh, India. *Local Economy*, *28*(1), 123-135.

Rodríguez-Pose, A., & Ezcurra, R. (2010). Does decentralization matter for regional disparities? A cross-country analysis. *Journal of Economic Geography*, *10*(5), 619-644.

Sadiq, T., Chaudhary, M. A., & Aslam, A. (2018). Regional Growth Causalities, Dependency and Integration among the Provinces of Pakistan. *Forman Journal of Economic Studies*, *14*.

Seguino, S., Sumner, A., van der Hoeven, R., Sen, B., & Ahmed, M. (2013). *Humanity divided: Confronting inequality in developing countries*. UNDP.

Shahbaz, M., Aamir, N., & Butt, M. S. (2007). Rural-urban income inequality under financial development and trade openness in Pakistan: the econometric evidence. *The Pakistan Development Review*, 657-672.

Shaheen, S., Awan, M. S., & Cheema, A. R. (2016). MEASURING INEQUALITY OF OPPORTUNITY IN PAKISTAN. *Pakistan Economic and Social Review*, *54*(2), 165-190.

Sitepu, H. R., Darnius, O., & Tambunan, W. N. (2018, March). Regional income inequality model based on theil index decomposition and weighted variance coeficient. In *Journal of Physics: Conference Series* (Vol. 983, No. 1, p. 012111). IOP Publishing.

Sutcliffe, B. (2005). A converging or diverging world?

Thomas, V., Wang, Y., & Fan, X. (2001). *Measuring education inequality: Gini coefficients of education* (Vol. 2525). World Bank Publications.

Touseef-Ur-Rehman, M., Mustafa, U., & Rashid, H. (2015). Trends of income inequality and polarisation in Pakistan for the period 1990-2008. *The Pakistan Development Review*, 447-466.

Ul Hasan, M., & Malik, S. (2019). Income Inequality Measurement in Pakistan: Empirical Evidence from Punjab Province. *Pakistan Journal of Social Sciences (PJSS)*, *39*(2).

Ullah, A., & Ali, A. (2024). Investigating Corruption, Income Inequality, and Environmental Degradation in Pakistan: A Time Series Analysis. *Journal of Energy and Environmental Policy Options*, *7*(1), 9-18.

Wasim, S., & Munir, K. (2017). Regional Disparity and Decentralization in Pakistan: A Decomposition Analysis.

World Bank. (2005). *World Development Report 2006: equity and development*. The World Bank.

Wu, J., & Gopinath, M. (2008). What causes spatial variations in economic development in the United States? *American Journal of Agricultural Economics*, *90*(2), 392-408.

Xiong, L. (2024). Driving Growth for SMEs in Laos' Commercial Sector Challenges and Opportunities. *Journal of Business and Economic Options*, *7*(1), 10-18.

Young, A. (2013). Inequality, the urban-rural gap, and migration. *The Quarterly Journal of Economics*, *128*(4), 1727-1785.