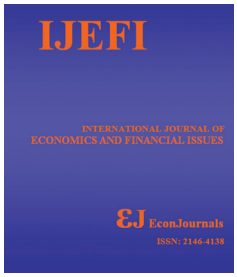

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Historic Spatial Inequality and Poverty along Racial Lines in South Africa

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ABSTRACT

South Africa faces many socio-economic challenges, which include sluggish economic growth, increasing unemployment rates, increasing inequality, and high poverty levels., This paper focused on examining how spatial inequality cause these socio-economic issues. The main thrust of the paper is to briefly investigate two major aspects, firstly the root cause of spatial inequality in South Africa, and secondly the impact that spatial inequality has on socio-economic indicators such as economic inequality, poverty, and employment levels. This research used a mixed methodology approach. Empirical research findings proved that apartheid policies contributed to high levels of poverty and inequality in South Africa. As the empirical results show, the existing inequalities in South Africa are predominantly based on a racial sub-group basis, which confirms the causal relationship with historic apartheid spatial policies enforced on a racial basis. Primary research findings depicted that the post-apartheid era is characterised by high poverty levels and huge inequality with bulk of blacks exposed to diverse macro-economic challenges. Policy recommendation wise, it was suggested that the government should continue to redress the systems of apartheid and use policies that help to eradicate poverty.

Keywords: Economic Growth, Poverty, Spatial Inequality, Unemployment, Gini Co-efficient
JEL Classifications: D63, J1, Q01, R1

1. INTRODUCTION

1.1. Background and Context

South Africa is recognised as one of the most unequal countries in the world (Bhorat et al., 2015). This inequality is illustrated by the current income/expenditure Gini co-efficient which is 0.65 (World bank, 2021). This indicates a high level of inequality according to the income measure with the top 10% of earners taking home 65% of total income, while the rest of the population at 90% earn just 35% of total income (Webster, 2019). While the level of income inequality is one of the highest in the world it is not the only form of inequality South Africa is battling with. Another more deeply rooted inequality is that of spatial inequality. Spatial inequality can be defined as the inequality of wellbeing across different regions within a country, measured by both social and economic indicators (Kanbur and Venables, 2005); (Kidokoro et al., 2022).

Spatial inequality has previously been analysed in the form of spatial opportunity structure, which focuses on the effect geographic location has on the gains from individual attributes, and the individual attributes that are acquired by individuals in different geographic locations (Kadi et al., 2022). The spatial opportunity structure focuses on socio-economic, geographical, political, and institutional elements to underpin its theories (Galster and Sharkey, 2017). According to Hartzenberg (2005) the spatial inequality present in South Africa can be traced back to apartheid policies which enforced spatial divisions based on race. The mass displacement of certain races as well as restrictions on movement based on race, has prevented equal access to economic opportunities that lie within the major economic hubs and city centres (Turok, 2018).

One of the policies that created this spatial division was the Bantu homelands act which displaced millions of South Africans,

confining them to rural underdeveloped areas under the guise of newly created states (Klein, 1987). These states were purposefully located great distances from urban hubs and city centres. In addition to this, residential segregation policies led to the creation of race specific townships, which included large scale housing projects located on the outskirts of major cities, serving as a form of dormitory for the work force (Todes and Turok, 2017). These oppressive policies have long lasting effects which can still be seen today, with around 43% of black South Africans still residing in the former homelands, even after the end of the apartheid era. This is a major contributor to the current poverty levels afflicting South Africa, with more than 75% of rural households being dependant on state social grants in order to fulfil basic needs (Todes and Turok, 2017).

A major issue with spatial inequality in South Africa is the mismatch between the areas where the workforce resides and the areas that they work in. This is highlighted by Turok and Borel-Saladin (2013) by mentioning that approximately 52% of jobs were created in urban areas which only housed 34% of the population, emphasising the lasting disparities in economic opportunities.

This research aimed at investigating the effect of this spatial inequality on economic growth and poverty within South Africa.

1.2. Problem Statement

The current issue of spatial inequality in South Africa is a result of the apartheid policies which enforced spatial divisions within South Africa. These divisions were specifically designed to suppress citizens according to their race, excluding them from economic participation at higher levels (Hartzenberg, 2005). These apartheid policies deprived South Africans of colour the opportunity to gain wealth and resources, which ultimately resulted in the high levels of poverty and spatial inequality we are faced with in South Africa. This issue is exacerbated by the fact that South Africans of colour make up over 90% of the total population in SA (Statistics South Africa, 2002).

The research be aimed at investigating the relationship between spatial inequality and the levels of poverty, according to race within South Africa. The study will attempt to gain an understanding on why spatial inequality is still prevalent in South Africa almost three decades later after independence. The effects of spatial inequality on poverty will also be investigated. These are important aspects which need to be understood for South Africa to experience inclusive growth and development, in contrast to the increasing inequality that has plagued the nation since colonial times (International Monetary Fund, 2020).

1.3. Research Objectives

The primary objective of this research is to investigate the relationship between the historic spatial inequality, and poverty along racial lines in South Africa.

To facilitate the achievement of the primary objective, the following theoretical objectives are examined in the study:

- To determine the origin and existing causes of spatial inequality in South Africa
- To determine the effects of spatial inequality on poverty, specifically between races and regions.

To facilitate the achievement of the primary objective, the analytical and empirical portion of the study consists of the following objectives:

- To analyse the trends of inequalities such as, income inequality, employment inequality, and location inequalities (urban/rural).

This will be accomplished by firstly conducting a qualitative analysis and thereafter presenting correlation data on real current values for the selected proxy indicators.

1.4. Overview

The research begins with the first section which is the literature review in which four sub-topics will be discussed and these are the origins of spatial inequality in South Africa; measuring inequality; inequality based on ethnic sub-group; and spatial inequality in South Africa. Thereafter, the theoretical framework will outline the research design and context; the methodology; and the data and sources used. The results and analysis follow in the form of a qualitative analysis on inequality elements, followed by a short empirical correlation analysis. Lastly the recommendations and conclusion wrap up this research study.

2. LITERATURE REVIEW

This section seeks to present the theoretical literature review of this study.

2.1. The Origins of Spatial Inequality in South Africa

In a debate regarding the Truth and Reconciliation Committee held in parliament in 1998 former president Thabo Mbeki described South Africa as a country divided by material conditions, into two nations, one black and the other white, with the latter having easy access to a developed economic, physical, educational, and other infrastructure. The large part of South Africa is black and poor, and lives under the conditions of a grossly under-developed infrastructure (Mbeki, 1998). The statement by the then deputy president Mbeki highlights the dichotomous nature of the socio-economic situation that is still present in South Africa today.

The inequality in South Africa that is persistent today has originated over a century ago, when the British colonial states of the Cape, Natal, and Boer republics of Orange Free State, and Transvaal were granted their independence in 1910 (Leacock, 1910). The ensuing peace settlement between the British empire and their former colony states allowed for racial discrimination to take hold at the very foundations of the new South African state. The colonisation and resultant creation of an apartheid state is the root cause of the racial exclusion which has led to unequal access to resources and economic opportunities between white and "non-white" citizens (Gelb, 2003).

Under the apartheid state new laws were implemented which systematically oppressed the "non-white" citizens specifically targeting black citizens. One of the key focuses of the apartheid

policies were spatial targeting, an example of a spatially oriented apartheid policy is the Natives Land Act of 1913, which displaced millions of South Africans, confining them to rural underdeveloped areas and prevented the black ownership of land outside of designated zones (Klein, 1987).

These areas being typically rural and under-developed had a severe lack of supporting infrastructure critical to socio-economic development which prevented the socio-economic development of "black reserves" while preventing black South Africans from accessing the economic opportunities that were present in the major cities and the rest of the country, as well (Adetoro et al., 2022). This has resulted in a form of inequality which is based on geographical location known as spatial inequality which can be defined as the inequality of wellbeing across different regions within a country, measured by both social and economic indicators (Kanbur and Venables, 2005).

2.2. Measuring Inequality in South Africa

South Africa faces one of the highest levels of inequality in the world by many measures (Bhorat et al., 2015). Inequality can be described as the differences in status, rights, opportunities, or endowments that are present between individuals or population groups (Koh, 2020). To measure the level of inequality in South Africa the Gini coefficient would be used as a measure.

The Gini coefficient measures income inequality within a country by comparing the wealth distribution among the population (Aburto et al., 2022). The resultant level of inequality is represented by a value between zero and one, zero being complete equality and one being complete inequality (Canton, 2021). It is the most commonly used inequality measure due to its efficiency and simplistic scale of measurement which allows for an easy comparison of inequality between countries (Boyce, 2021). The Gini co-efficient would be used in this analysis due to its simplicity, efficiency.

However, the Gini measure does have its limitations. One of the foremost limitations is its focus on income. The problem lies within multiple differing income measures which would affect the resulting Gini coefficient depending on which measure is used (Chitiga et al., 2014). While this may be the foremost limitation globally, in the South African context there are two weightier shortfalls of the Gini coefficient, which are: its inability to recognise broader socio-economic inequalities; and the exclusion of the informal sector in its measurement. The impact of this limitation would be greater in nations that have a very large informal sector, and battle widespread socio-economic issues, such as South Africa. In these cases, it would be advisable to consult additional indicators of equality and or poverty such as the Human Development Index or the Multidimensional Poverty Index. However, for the purpose of a domestic comparison between sub-groups the Gini coefficient would suffice as a measure of comparison.

The broad Gini coefficient of the entire country is of limited relevance when analysing spatial inequality and poverty trends within the country. This is especially true in the South African case since South Africa faces many types of internal socio-economic inequalities (Deghaye and McKenzie, 2012). To address this issue and allow the Gini coefficient to measure the extent of spatial inequality in South Africa the Gini coefficient would be applied to specific sub-categories within the South African population such as Gini by race and Gini by settlement type.

2.3. Inequality Based on Ethnic Sub-group

The reason spatial inequality in South Africa will be analysed along the criteria of ethnic sub-groups is due to historic apartheid policies being enforced by the above criteria, which is seen as the root cause of inequalities in South Africa.

To grasp the level and intensity of inequality in South Africa a better understanding of the composition of the population is needed. Table 1 shows demographic data for 1991 and 2001. From the data it is apparent that majority of the population is made up of Africans and this is over 80%, it is also evident that the African demographic group was the only group which has experienced an increase in percentage share of total population, indicating that Africans contributed to a vast majority of the population growth that South Africa has experienced.

The above statistics imply that if inequality and poverty in South Africaaffect the nation at large, it would affect the African race at a greater rate, due to their larger representation within the population of the country. This means that out of every 100 people affected by inequality or poverty, 81 people would be black and just over seven people would be white, based solely on the ethnic composition of the population. White people form 16.5%, coloured 10.5%, Indian 3% of the total population as of 1991. In 2019, there were changes and Africans formed 81.2%, whites 7.6%, Coloureds, 8.7% and Indians 2.5% of the total population. It is important to note this going forward, so that the statistics are not misinterpreted, since a skewed distribution by ethnicity is expected to bend towards the Black African sub-group.

Now that the ethnic composition of the population is known, as well as how it is expected to affect the inequality results, the first proxy indicator of inequality can be analysed, which is real annual mean expenditure by ethnic group. Expenditure is used as a proxy for inequality since it synthesises living standards as well as the distribution of income and wealth. The results obtained from the Living Conditions Survey and the Income Expenditure Survey are presented in Table 2 below. The data below shows that for the period 2006 up to 2011 all ethnic sub-groups experience an increase in expenditure, with a slight decrease in 2015. This indicates that the economy grew in the period 2006–2011, however the question at hand is how the benefits from this growth was

Table 1: Population composition of South Africa

Year	Ethnic sub-group	Percentage of population
1991	African	70
	White	16.5
	Coloured	10.5
	Indian	3
2019	African	81.2
	White	7.6
	Coloured	8.7
	Indian	2.5

Source: Statista (2019)

distributed and it should be noted that increase in expenditure does not always leads to economic growth. It is noted that the nine-year average of annual mean expenditure for Black Africans is 15,459, while for Whites it is 107,676. This result is contrary to what is expected based on the population composition. Black Africans which are the largest ethnic group of the population spend the least, while White South Africans, forming under 10% of the population, spend the most on average. The results therefore indicate severe income and expenditure inequality between different ethnic sub-groups in South Africa.

Now that it is clear that income inequality exists between the different ethnic sub-groups in South Africa, the inequality within each ethnic sub-group will be analysed by referring to the Gini coefficient of each sub-group independently. This is done to gain an understanding on whether the level of inequality is the same within each sub-group as it is between each sub-group. A large difference in inequality levels of between and within ethnic sub-groups would suggest that the inequality is based on ethnicity.

The 2015 overall national Gini coefficient of 0.65 (Statistics South Africa, 2019) would be used as a baseline to compare the 2015 Gini coefficient of each ethnic sub-group. The data in Table 3 shows that the Black African subgroup has the highest level of within sub-group inequality with a Gini coefficient of 0.57, followed by the Coloured sub-group with a Gini coefficient of 0.56. The Indian and White sub-groups show lower levels of within sub-group inequality, with Gini coefficients of 0.45 and 0.41 respectively. The results obtained indicate that the level of within sub-group inequality is lower than the national level of inequality. This affirms that inequality in South Africa is skewed with a racial bias.

Furthermore, the Black African sub-group was the only ethnic sub-group which has become more unequal between 2006 and 2015 with the Gini coefficient increasing from 0.54 to 0.57 in this period, despite an increase in annual average expenditure within the sub-group for the same period. This indicates that the increase in expenditure was captured by a small portion within the sub-group, which further exacerbates the issue of inequality. This result affirms the notion that the underlying cause of this inequality is the lasting effects of previously enforced apartheid policies, which were specifically harsh on the Black African sub-group.

Another indicator of inequality among the different ethnic sub-groups which relates to spatial inequality is the percentage of land ownership in urban areas that each ethnic subgroup holds in comparison to the sub-group's percentage of total urban population. The data in Figure 1 suggest that there is a very large disparity between the percentage of land owned by ethnic sub-groups in urban areas and the population of the sub-group in urban areas. The greatest disparities occur in the White and Black sub-groups, with Whites owning just under 50% of urban land while constituting <10% of the urban population.

On the contrary, Blacks own 30% of urban land while they make up over 80% of the urban population. The Coloured and Indian sub-groups both constitute <10% of the urban population with similar land ownership. These large disparities in urban land ownership can be traced back to apartheid spatial policies such as the Bantu Homeland Citizenship Act of 1970, which prevented Black South Africans from owning land outside of their designated homelands (SA History Online, 2014).

The income inequality and urban/rural land ownerships statistics are confirmed by the data in Table 4 which show that the levels of inequality in urban areas are significantly higher than that of the rural areas. The decrease in inequality over the nine-year period is relatively small and is not in line with achieving the goals of section 25 of the South African constitution, which aims to allow South African citizens equitable access to land on a racial and gender basis (Land Audit Report, 2017).

Table 2: Distribution of real annual mean expenditure by ethnic group

Ethnic	Mean				
Sub-group	2006	2009	2011	2015	Av
Black African	11,005	14,145	18,396	18,291	15,459
Coloured	19,405	25,207	31,850	31,951	27,103
Indian/Asian	39,840	51,744	67,386	58,249	54,305
White	103,012	107,774	142,613	77,308	107,676

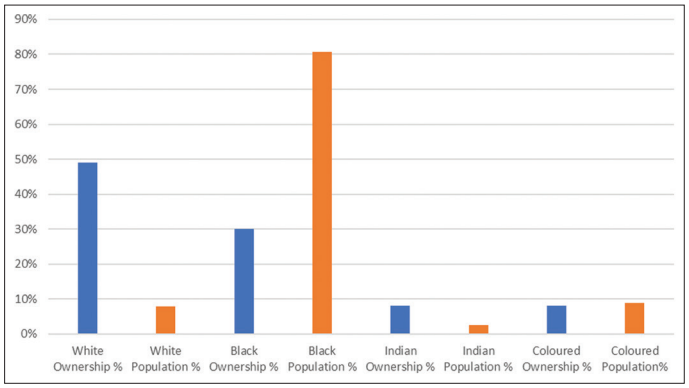
Source: (Statistics South Africa: report 03/10/2019, 2019)

Table 3: Gini co-efficient by ethnic group (2006-2015)

Ethnic group	Year	Gini co-efficient
Black African	2006	0.54
	2009	0.57
	2011	0.55
	2015	0.57
Coloured	2006	0.56
	2009	0.53
	2011	0.53
	2015	0.56
Indian/Asian	2006	0.52
	2009	0.50
	2011	0.45
	2015	0.45
White	2006	0.43
	2009	0.39
	2011	0.41
	2015	0.41

Source: (IES 2005/06, LCS 2008/09, IES 2010/11, and LCS 2014/15; own calculations)

Figure 1: Urban land ownership and urban population by ethnic sub-group



Source: (Department of Rural Development and Land Reform, 2017)

2.4. Spatial Inequality in South Africa

While the data above focuses on inequality between and within ethnic sub-groups, another important variant of inequality affecting South Africa is spatial inequality. To measure the levels of spatial inequality in South Africa the proxy indicator of annual mean and median expenditure would be used once again, however it would be analysed at a provincial level.

The use of the annual mean expenditure at a provincial level would allow for the comparison between the income of the provinces which housed former Bantustans or 'Homelands' and the provinces in which major economic hubs were situated. A large difference in expenditure between these provinces would confirm that the former spatial apartheid policies such Natives Land Act of 1913 have had a lasting effect on the progress and development of certain provinces, while allowing other provinces to agglomerate wealth at an unnatural rate (Department of Trade and Industry, 2018).

Before the expenditure at a provincial level is analysed, it is important to identify the provinces which housed the former Homelands. As Figure 2 illustrates, the former homelands were concentrated in the provinces of Limpopo, Eastern Cape, North-West, and KwaZulu Natal.

Table 4: Mean expenditure and Gini coefficient by settlement type

Settlement type	Year	Mean	Gini co-efficient
Urban	2006	29,870	0.65
	2009	34,836	0.62
	2011	43,394	0.62
	2015	40,290	0.61
Rural	2006	8,058	0.53
	2009	8,981	0.51
	2011	13,190	0.55
	2015	11,658	0.55

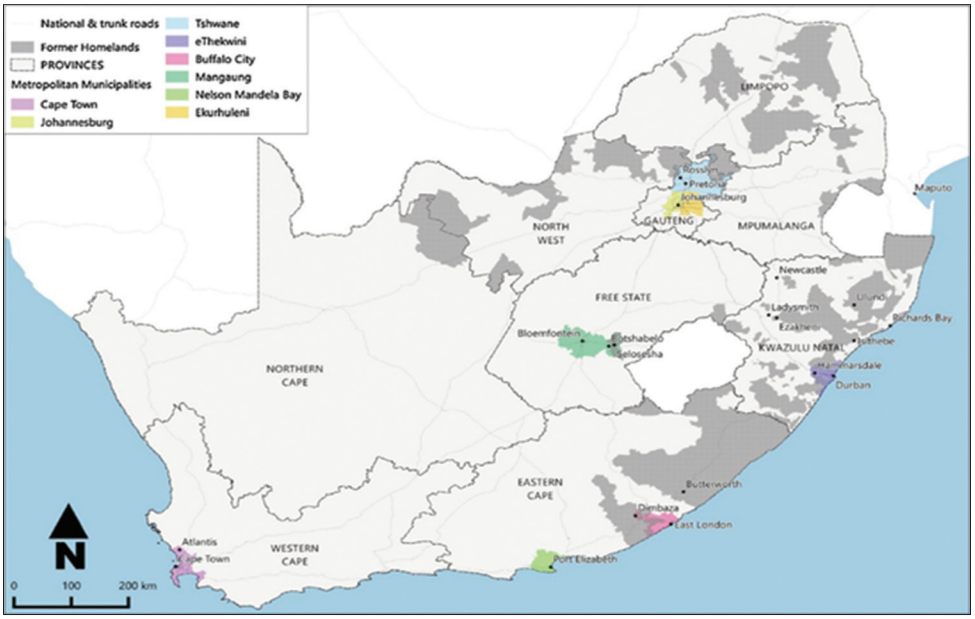
Source: (IES 2005/06, LCS 2008/09, IES 2010/11, and LCS 2014/15; own calculations)

Table 4 which depicts the real annual mean expenditure of each province shows that in 2015, Gauteng and the Western cape were the two provinces with the highest expenditure by a considerable margin, with expenditures of 48,219 and 47,592 respectively. The Northern Cape, Free State, and Mpumalanga follow with expenditures between 23,300 and 28,500. The Eastern Cape, North-West, KwaZulu-Natal, and Limpopo have the lowest expenditures ranging from 16,300 at the lowest to 20,900 at the highest.

The data collected shows that the provinces with the lowest expenditures are all provinces in which there was a high concentration of homelands during apartheid. This confirms that spatial inequalities created by apartheid spatial policies such as the Natives Land Act of 1913 and the Bantu Homeland Citizenship Act of 1970 has lasting repercussions that are still present today. The provinces in which these homelands were concentrated experience spatial inequalities as recent as 2015, resulting from the hindered socio-economic and infrastructural development that those areas were subjected to for decades under apartheid law.

According to Table 5 it is clear that the Spatial inequality present in South Africa today is largely based on the effects of concentration of wealth within certain provinces which form the economic hubs in the country, with a strong racial bias towards the ownership of this lucrative land. These differences in agglomeration between the provinces were borne out of deliberate spatial targeting under the apartheid regime. This ultimately hindered the socio-economic and infrastructural development of the provinces, which housed the Bantustan homelands, which were designated for Black ownership. This has also resulted in an unequal distribution of land between the different ethnic sub-groups in South Africa (Klein, 1987). The Bantu Homelands Act of 1970 which lead to unequal distribution of land as well as policies such as the Pass Laws Act of 1952, prevented the equal access to economic opportunities, which ultimately resulted in the severe income/expenditure and spatial inequalities we face in South Africa today.

Figure 2: A map of the former Homelands



Source: Todes and Turok, 2018

Table 5: Distribution of real annual mean expenditure by province

Province	Year	Mean Real Exp	Gini
Western cape	2015	47,592	0.62
Eastern cape	2015	18,262	0.65
Northern cape	2015	23,343	0.60
Free state	2015	28,421	0.60
KwaZulu Natal	2015	18,436	0.61
North-West	2015	20,809	0.61
Gauteng	2015	48,219	0.61
Mpumalanga	2015	23,932	0.62
Limpopo	2015	16,338	0.61

Source: (IES 2005/06, LCS 2008/09, IES 2010/11, and LCS 2014/15; own calculations)

3. THEORETICAL FRAMEWORK AND METHOD

3.1. Research Design and Context

To facilitate the achievement of the primary objective, the analytical/empirical portion of the study consists of the following objective:

- To analyse the trends in poverty, income, and employment, as well as the distribution of asset ownership, according to the sub-groups of race.

The research builds on the spatial opportunity structure which is recognised as the foundational determinant of inequality (Galster, 2012). Spatial opportunity structure deals with the effect that geographic location has on the gains from individual attributes, and the individual attributes that are acquired by individuals in different geographic locations which entails many social, economic, and political elements (Galster, 2012).

Many academics prefer to employ a qualitative analysis when conducting research based on the spatial opportunity structure, due to the unquantifiable nature of the many elements being considered. Therefore, before the data is analysed empirically, a qualitative analysis will be done to fully grasp the multidimensional nature of spatial inequality in South Africa. In order to conduct the qualitative analysis, spatial inequality would be dissected into three categories of inequality being: economic and wealth inequality, labour and employment inequality, and social inequality.

The adaptation of the theory of spatial opportunity structure to fit the South African context should rely on elements which reflect the South African socio-economic situation. As such, the following defining indicators have been selected as elements which contribute to spatial inequality in South Africa: poverty, race, income, employment, and land ownership. Since these elements are quantifiable either directly, or through the use of a binary variable, it is possible in this case to use quantitative measures to provide empirical evidence supporting the theory of spatial opportunity structures in South Africa.

3.2. Methodology

This research is a mixed methodology approach, due to the unquantifiable properties of spatial inequality. It is deductive in nature and will consist of the qualitative analysis of three main types of inequality that contribute to spatial inequality and a quantitative analysis of cross-sectional data, with the aim of verifying the relationship and correlation between the variables selected to represent spatial inequality.

The indicators used to represent these variables are as follows. Spatial inequality will be represented by a proxy indicator which is ownership of land. The proxy indicator for spatial inequality will take the form of a dummy variable for land ownership. Poverty will be measured by comparing incomes with the lower bound poverty line, to determine poverty status, and then would take the form of a dummy variable for poverty. Employment and race will also take the form of dummy variables.

Due to the broad multidimensional nature of the question at hand the quantitative method will only be used to conduct a correlation analysis in an attempt to provide supporting data to the findings in qualitative analysis. Formulating an empirical regression that is capable of comprehensively measuring the relationship between the variables that are recognised as determinants of inequality, is beyond the scope of this study.

The indicators used within the empirical portion of this research are a cross-sectional data source, which provide synthesised numerical values, that allow for them to be used in conducting a correlation analysis, with the results allowing for a descriptive interpretation. The aim of conducting a correlation analysis is to determine the magnitude of the influence of the variables upon each other.

3.3. Data, Sources, and Limitations

Data regarding spatial inequality, land ownership, race, employment, income, poverty, will be retrieved from Stats SA. The data provided by Statistics South Africa, 2019 is sourced from the General Household Survey of 2017, which is also administered and monitored by Stats SA, and as such is considered a reliable source of cross-sectional data. The relevant data will then be selected, formatted, and compiled using Microsoft Excel, before being exported to software's such as EViews and SPSS for analysis. A sample of 9999 responses have been collated for analysis.

A limitation of using cross sectional data is that it captures the characteristics of variables for one specific point in time only. This means that the study cannot analyse the effects that poverty and economic growth have on spatial inequality over a period of time, but rather at a specific point in time only. Due to this limitation, the origin of spatial inequality in South Africa is discussed in the literature review, to highlight historical influences of spatial inequality. While the current level and trends of spatial inequality is examined below through the qualitative and quantitative lens.

4. RESULTS AND ANALYSIS

Measuring inequalities in relation to spatial inequality cannot properly be done through the lens of Gini coefficient values only. In order to truly understand the level of inequality, a multidimensional way is going to be used in the analysis. Therefore, the qualitative analysis will further explore two dimensions of inequality, being economic inequality and labour inequality.

4.1. Economic Inequality

The literature review has already covered certain aspects on economic inequality relating to expenditures analysed according to the sub-groups of race, settlement type, and province. This was done to analyse economic inequality in relation to spatial inequality along racial lines. However, to grasp the overarching levels of economic inequality its qualitative analysis will analyse the expenditure distribution by each decile, this will provide a general overview of the trends in income inequality levels, conceptually akin to the Gini coefficient and Palma Ratio.

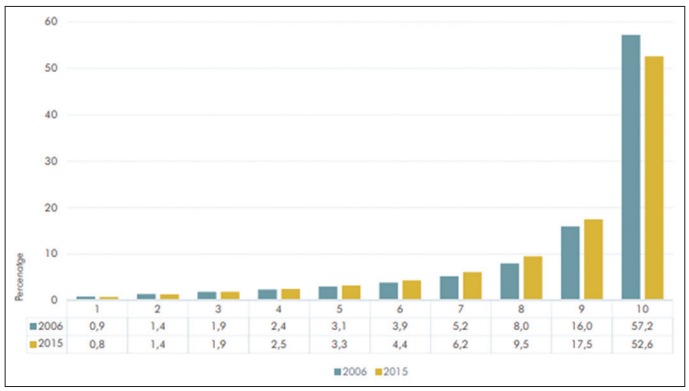
To examine the nature of income/expenditure inequality, the data is graphically presented according to deciles. This allows for the visualisation of the different levels that income is captured, by ten equally sized deciles. Figure 3 clearly shows that the trend in expenditure is severely skewed to the right, being captured by the richest 10% in the country. The nine-year period saw this trend furthers skewing to the right, peaking in the nineth decile, indicating that expenditure inequality is increasing in South Africa. The fact that there is a decrease in expenditure by the 10th decile might seem as if inequality is decreasing, however the decile saw only a 4.6% decrease in expenditure, which isn't remotely significant compared to the expenditure in 2015 of 52.6%.

An increase in expenditure share over the 9 years takes place between sixth and the ninth deciles, this indicates that the upper-middle to the lower-top earners have captured a greater share of income. Based on the fact that the only other expenditure growth takes place in the fourth and fifth deciles, which are relatively insignificant capturing a combined 0.3% increase, we conclude that the remaining 4.3% of expenditure is captured by the sixth to nineth deciles, as confirmed by their respective expenditure growth. It is evident that expenditure inequality trends in South Africa are a cause for concern. Over the 9-year period the bottom 40% of earners saw no growth at all, while the top decile only decreased its share of expenditure by 4.6%. Unfortunately, the top decile still spends more than the entire nine decile below it. Unless radical interventions are put in place rapidly, the inequality trends will continue to worsen.

4.2. Labour inequality

Labour market inequality can be seen as a direct influence on economic inequality, evidence of this lies in the measures of these inequalities, where the incomes that are earned through labour are reflected by the income expenditure measure (Hjorthen et al., 2022). It is also a key attribute of spatial inequality; therefore, it is important to analyse the levels of inequality of labour along the lines of spatial inequality. This involves the analysis of labour trends in relation to race and settlement type.

Figure 3: Distribution of expenditure shares by decile



Source: IES2005/06 and LCS 2014/15

Firstly, the labour market trends will be analysed at the national level, as this gives an overarching view of the state of the national employment levels. Over a 7-year period between 2011 and 2017, the unemployment rate has steadily increased to 27.5% from 24.8% (Statistics South Africa, 2019). This 2.7% increase is reflected by the total number of unemployed, which also increased at a similar rate of 2.6% (Statistics South Africa, 2019). The non-economically active group has decreased by 4.1%, however this does not match the very low increase in employment of just 1.5%. This implies that the increase in unemployment rate is due to the combination of previously employed people becoming unemployed as well as non-economically active youth not being able to find a job once they have reached the age of economic participation.

Now that the overall labour trends have been analysed, the labour trends according to race can be put into perspective.

Table 6 above shows that between 2011 and 2017, all ethnic sub-groups have seen an increase in unemployment rate, this trend is in line with the overall national trends discussed above. However, the Black African sub-group saw a larger increase in total unemployment, increasing by 2.9%, while all other ethnic groups saw minimal total increases below 1%, with Indians being the second highest increase at 0.9%, while the White and Coloured sub-groups saw an increase of only 0.5%.

Aside from the labour trend over the 7 years, the total unemployment statistics can showcase the inequality in the labour market, according to race. When the total values of unemployment are analysed, we see the true level of inequality in the labour market. The highest unemployment rate across all ethnic sub-groups belong to the Black African sub-group at 31%. The second highest unemployment rate belongs to the Coloured sub-group at 23.5%, while the Indian and White sub-groups have relatively low unemployment rates, at 11.6% and 6.7%, respectively. This data showcases the historic inequalities enforced within the labour market based on race, as discussed in the literature review. Unfortunately, the current trend in the labour market is only further exacerbating this issue.

The labour market trends between urban and rural settlement types follow the same patterns as the national labour market trends and trends within racial sub-groups. The urban employment rates have increased by 3.1%, slightly more than the national trend of 2.7%, while the rural unemployment rate is directly in line with the national trend showing an increase of 2.7%. The difference between the rural and urban unemployment rate isn't very large at just 4%, with the trend over seven years slowly closing that gap as the urban unemployment rate accelerates at a faster pace.

Table 6: Employment by ethnic sub-group

Year	Black African				Coloured			
	NEA	Employed	Unemployed	Unemployment rate	NEA	Employed	Unemployed	Unempl. Rate
2011	46.8	38.0	15.2	28.6	37.0	48.6	14.4	22.9
2012	46.2	38.6	15.3	28.3	36.3	48.3	15.4	24.1
2013	45.5	39.3	15.2	27.9	36.1	48.5	15.4	24.1
2014	45.1	39.5	15.5	28.1	35.0	49.4	15.6	24.0
2015	43.2	40.6	16.2	28.5	35.9	49.3	14.8	23.0
2016	42.8	40.0	17.3	30.2	36.6	48.9	14.5	22.9
2017	41.6	40.3	18.1	31.0	36.6	48.5	14.9	23.5
Year	**Indian/Asian**				**White**			
	NEA	Employed	Unemployed	Unempl. Rate	NEA	Employed	Unemployed	Unempl. Rate
2011	40.7	53.1	6.2	10.5	31.6	64.4	4.0	5.8
2012	41.1	52.7	6.3	10.6	32.3	63.8	3.9	8.5
2013	39.2	53.4	7.5	12.3	31.8	63.6	4.6	6.8
2014	41.3	51.7	7.0	12.0	32.4	62.6	5.0	7.4
2015	40.5	51.7	7.8	13.1	31.7	63.7	4.6	6.8
2016	40.6	52.2	7.2	12.0	32.3	63.0	4.7	6.9
2017	38.8	54.1	7.1	11.6	31.7	63.7	4.5	6.7

Source: QLFS 2011-2017

Table 7: Descriptive Statistics

	Mean	SD
Income	1166.25	11286.85
Race	0.11	0.317
Land	0.30	0.457
Poverty	0.82	0.384
Employment	0.32	0.465

Source: Compiled by the authors (2022)

4.3. Descriptive Statistics

The indicators used to represent the selected variables are as follows. Spatial inequality will be represented by a proxy indicator which is ownership of land. The proxy indicator for spatial inequality will take the form of a dummy variable for land ownership. Poverty will be measured by comparing incomes with the lower bound poverty line, to determine poverty status, and then would take the form of a dummy variable for poverty. Employment and race will also take the form of dummy variables.

Due to the cross-sectional nature of the data used in this study, most of the data gathered has been converted to a binary definition. It is therefore expected that the descriptive statistics for the binary variables would be in decimal form, ranging from 0 to 1.

Table 7 shows that the average income for the representative population sample is just R 1166.25, which is relatively low and below the upper bound poverty line. This reflects the income levels in South Africa (Van der Berg and Louw, 2004). The mean of the dummy variable for poverty reflects the low-income rates, as the resulting 0.82 is very close to 1, indicating that most of the population lives in poverty (Aliber, 2003). High poverty rates and low average incomes are often accompanied by high unemployment rates (Aliber, 2003), the data confirms this since the mean for the employment dummy variable is just 0.32, which indicates that only 32% of the population in the data set is employed. The mean for the land ownership dummy variable is also low at just 0.30, which indicates a high concentration of land ownership. The mean of the binary variable for race is 0.11, this is very close to 0 indicating that a majority of the sample group are classified as non-white.

Table 8 correlation results show that income and race have a weak positive correlation of 0.005. According to the Race binary variable the positive correlation indicates that income will be greater for whites. This result may seem weak, however considering the demographics of South Africa, whites represent <10% of the population, thus the result is expected to be skewed and bear a low positive correlation as opposed to a strong positive. The result therefore supports the theory that there is a presence of income inequality in South Africa, along racial lines (Moyo, 2014).

Income and land also have a positive relationship of 0.063, which is generally expected since an increased income would increase the purchasing power of an individual, allowing them to purchase land. Alternatively, the land or residential property may be the source of income itself. The reason that the correlation value is weak could be the fact that, historically in South Africa, the ownership of land is highly concentrated (Moyo, 2014). This is reflected by Race and land ownership, which have a stronger positive correlation of 0.133, indicating that the concentration of land ownership in South Africa is based more on race than income levels. This result supports the theory that land ownership is concentrated along racial lines in South Africa (Moyo, 2014). Land ownership and employment also have a positive correlation of 0.172, this implies that most landowners are employed.

Income and poverty have a strong negative relationship of −0.220, this is expected since the upper-bound poverty line is set at R1330 (Woolard and Leibbrandt, 1999), therefore any person with an income greater than R1330 would not be considered poor. Income also has a positive correlation of 0.131 with employment, this is expected since those who are employed earn an income. The reason that this correlation is not stronger is due to large amounts of social grants being received by unemployed people in South Africa (Satumba et al., 2017), and as a result they earn an income through social grants despite being unemployed.

Poverty and race have a positive correlation of 0.100, which indicates that race does have an influence on poverty status to a certain degree, this is supported by the fact that majority of the

Table 8: Correlation results and analysis

	Income	Race	Land	Poverty	Employment
Income	1.000				
Race	0.005	1.000			
Land	0.063**	0.133**	1.000		
Poverty	−0.220**	0.100**	−0.139**	1.000	
Employment	0.131**	0.070**	0.172**	−0.604**	1.000

"**" indicates significance at the 0.001 interval Source: Compiled by the authors (2022)

Table 9: Significance

	Income	Race	Land	Poverty	Employment
Income					
Race	0.635				
Land	0.000	0.000			
Poverty	0.000	0.000	0.000		
Employment	0.000	0.000	0.000	0.000	

Source: Compiled by the authors (2022)

people living in poverty in South Africa are people of colour (Meth and Dias, 2004). Race and employment also have a weak positive correlation of 0.070, which indicates that race also has an influence on employment albeit low. Poverty and land have a negative correlation of −0.139, which implies that the poor don't own land. This might seem like an obvious result however the magnitude of concentration of land ownership in South Africa can only be put into perspective once we acknowledge that the mean value for the poverty indicator is 0.82, which is a vast majority of the population living in poverty. Poverty and employment also have a strong negative correlation of −0.604. This implies that a vast majority of the poor are unemployed. Table 9 significance levels indicates that there's a positive relationship of .635 between income and race and all other variables indicates an interval level of 0.000.

5. CONCLUSION AND RECOMMENDATIONS

As discussed in the literature review and further analysed both qualitatively and quantitatively, spatial inequality present in South Africa can be traced back to apartheid policies which enforced spatial divisions based on race (Hartzenberg, 2005). These inequalities have widespread and long-lasting effects. After the origins of these inequalities were discussed, the current or recent trends were analysed. Unfortunately, in the past 25 years, no significant decreases in inequalities were made.

A change in trends can only be achieved through concentrated deliberate efforts, such as those that were outlined by the NDR and Freedom Charter, which are predominantly socialistic. The deep-seated inequalities and poverty issues need to be addressed using more socially oriented policies and targets as opposed to pursuing GDP.

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