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Title: Quantitative Methods

Contents

1. Abbreviations	3
2. Introduction	4
3. Education Policy in South Africa	5
3.1 History of Education Policy in South Africa.....	5
3.2 Current Education Policy in South Africa	5
4. Technical Skills in South Africa.....	6
5. Methodology.....	7
6. Data Issues	8
7. Conclusion.....	14
8. Policy Recommendations.....	15
9. References	16

1. Abbreviations

DBE – Department of Basic Education

DHET – Department of Higher Education and Training

2. Introduction

This paper observes the impact that education has had on economic effects in South Africa, whilst observing the Quantitative Methods usually used in social science studies. These methods are always attested to using number variability for the independent variables on the dependent variables.

The education, and consequently labour market systems were two of the more severely used government institutions by the Apartheid government for racial discrimination. From a school-going age, children were taught different national anthems.¹

They had different racially motivated education curriculums. Blacks were meant to act as subservient to the system and whites as the superior race. A Minister of Native Affairs (Dr H.F Verwoed) who later became the Prime Minister, once claimed in a parliamentary session that he doesn't see the point of teaching a black child Mathematics in a land (South Africa) where they will never be able to use it.

¹ The different anthems taught to children were chosen based upon the majority of school attendees' home language e.g. English, Afrikaans, Nguni or Sotho. These different language anthems were all amalgamated into one anthem, when South Africa gained its independence in 1994.

3. Education Policy in South Africa

3.1 History of Education Policy in South Africa

The Apartheid laws were passed from 1948 to 1991. For example, in 1953, the government passed the '1953 Bantu Education' law, which was designed to render the country's majority black population disenfranchised from the political system and the economy. The law deliberately sought to make blacks subservient labourers. It also systematically excluded black students from exposure to certain subjects.

In 1976 the government attempted to force black students to study and write their exams in Afrikaans (something which had never been done before). Hence, black students started rioting against the government. The government sent in police and the military to restore order in the townships. This resulted in what later became known as the 'Soweto Disturbances' which began on June 16², 1976, where more than 700 schoolchildren were murdered and over 4000 were wounded, by the government's police and military forces. The government went on to declare a 'State of Emergency' to control the chaos that was taking place in South African townships.

Most black workers in the cities, under Apartheid, were deemed to migrant workers in the land of their birth, and so needed a residence permit to leave their former homelands to go and search for work in the cities.

The Apartheid government confiscated privately-owned black farms in white-designated areas which led to a lot of blacks seeking cheap labour activities in white cities. No one was forced to labour.

At tertiary level, the Apartheid government would prioritize educating people according to their races. So, for instance, the government had a commitment to educating whites firstly, then coloureds and Indians, and lastly blacks.

3.2 Current Education Policy in South Africa

Education in South Africa is governed by two national departments, that is, the Department of Basic Education (DBE), which is responsible for primary and secondary schools, and the Department of Higher Education and Training (DHET), which is responsible for tertiary education and vocational training.

The nine provinces of South Africa also have their own education departments that are responsible for implementing the policies of the national department and dealing with local issues.

² June 16 became a public holiday known as 'Youth Day' in Independent South Africa

4. Technical Skills in South Africa

In 2015 and the years before that, there had been complaints in South Africa, that there weren't enough technical skills, specifically engineering skills in the country, to meet the demand for such skills in the public sector. The skills were around, the only problem is that they were concentrated in the private sector. Engineers in South Africa, had clearly noticed the ridiculously badly managed application process in the government sector, and had decided to move to the private sector, which had an incentive to manage the application process well, and select the candidates based on merit.

It is probably worthwhile at this point to mention that the demographic drag imposed through education, means skills supply falls in the future, hence the economic growth of a country slows down, or is in a trajectory anticipated to a slow down. This has been one of the economic hypotheses as to why China will never reach top position in the world.

Innovation is critical to driving development, and with Research and Development investment, China is outperforming. The result: China remains poised to overtake the US as the world's biggest economy.

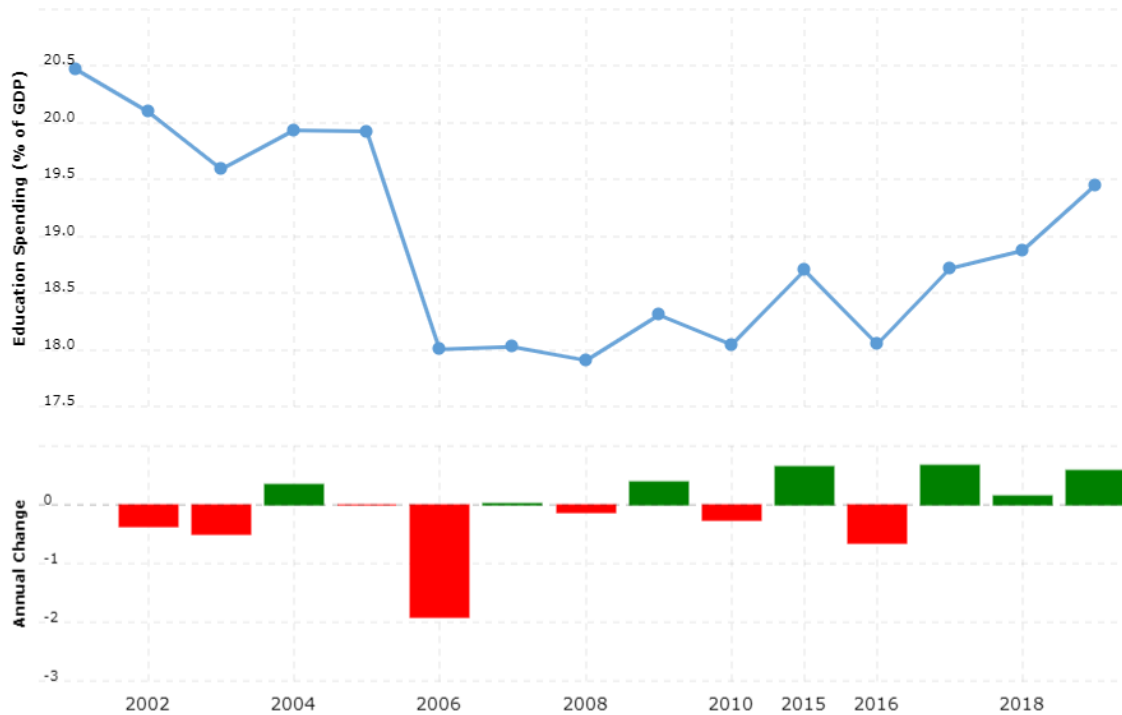
Education is a great investment. The more people you have educated in a country, the more productive the individuals you have, the better the chances of being innovative, and raising the wealth of the economy.

5. Methodology

Given the massively diverse racial and spatial nature of South African society, I will use this data strategy to evaluate the impact of differing education mobilities across the entire country and across the different racial groups to find out how education differentials affect the country as whole differently; and the different racial groups. Thus, education in what form available will be the independent variable and the dependent variables will be changes in Unemployment and Illiteracy.

6. Data Issues

Fig 1: South Africa Education Spending as a % of General Government Spending³



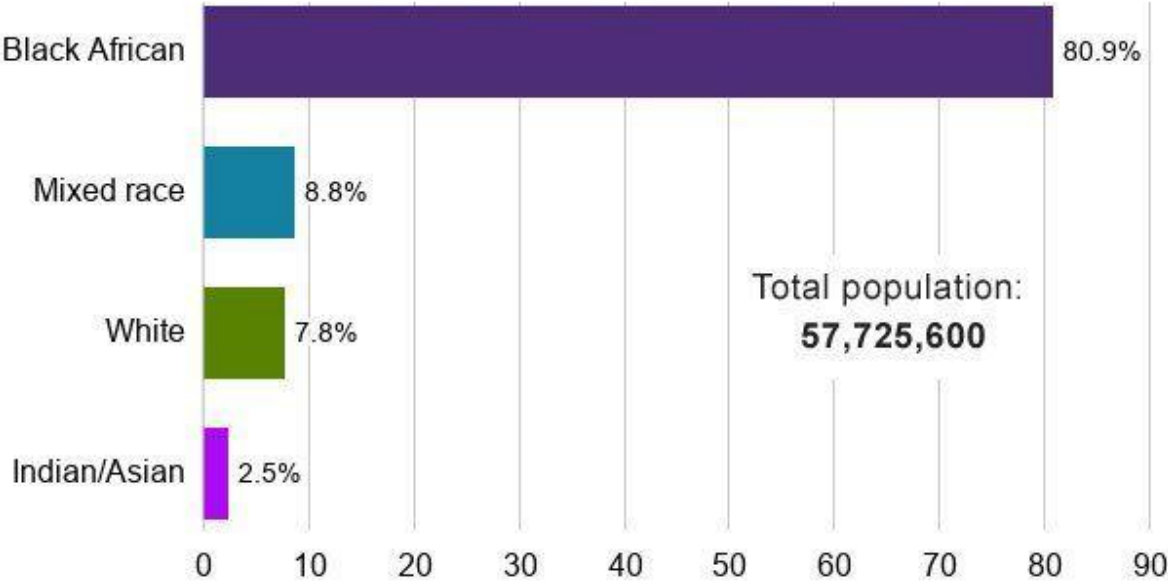
Source: World Bank (2021)

Definition: General government expenditure on education (current, capital and transfers) is expressed as a percentage of total general expenditure on all sectors (including health, education, social services etc.). It includes expenditure funded by transfers from international sources to government. General government usually refers to local, regional and central governments.

As can be seen from Figure 1 above there has not been much change in the National Treasury's spending perspective of education between the years of 2001 and 2019. Government spending on education over this period was highest in 2001 when it was 20.5% and was lowest in 2008 when it was at 17.91%.

³ On the left side of the graph, the Source where the graph was derived from made an error and claimed that the spending is a % of GDP, whilst it is a % of General government spending

South Africa by race group

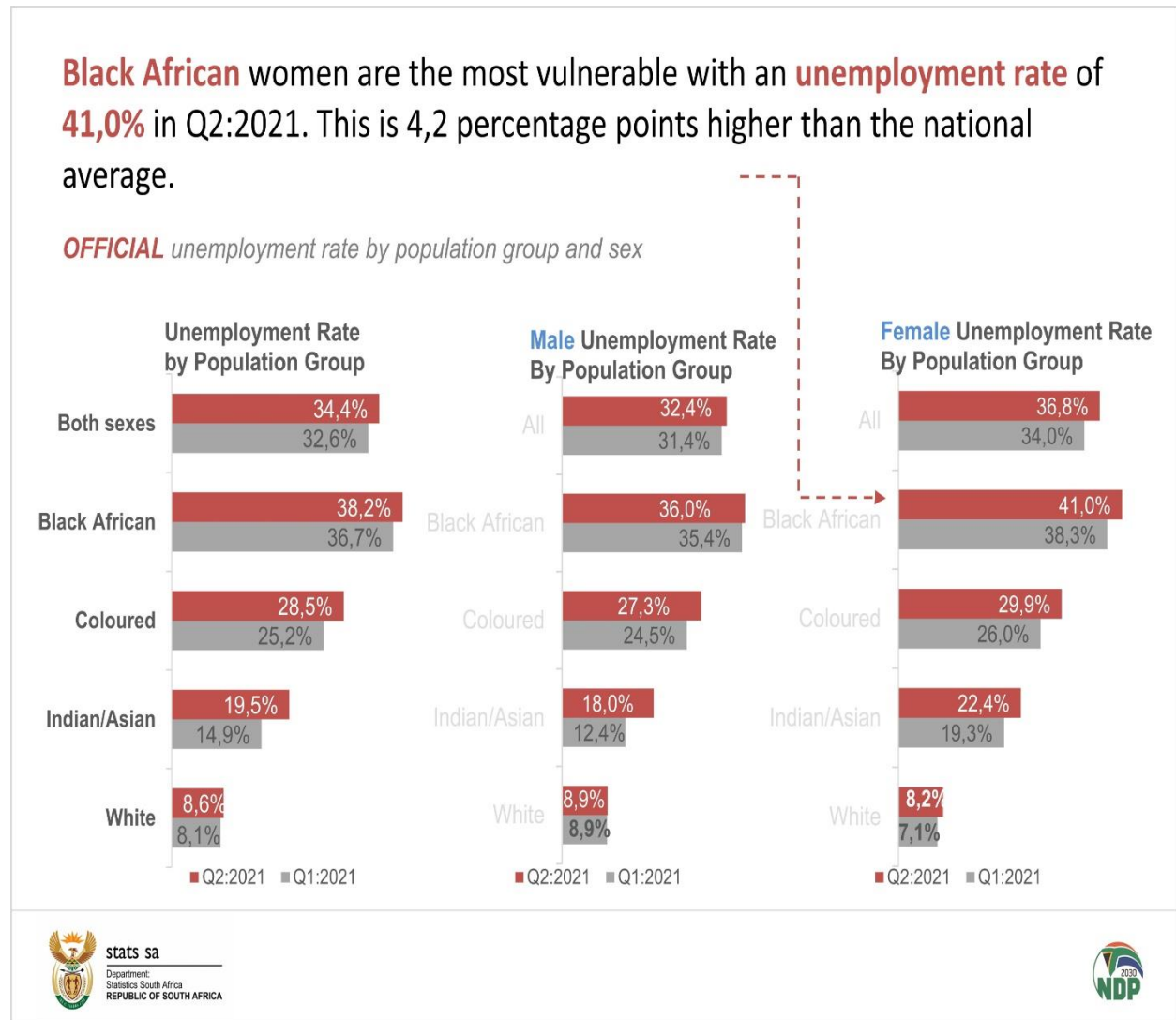


Source: Statistics South Africa



Before observing the different racial dynamics of South Africa’s labour market let us first take a look at the racial make up of the country’s population (in 2018) above. The total population was 57,73 million. Black Africans make the majority at 80.9%; followed by Coloureds/Mixed race; then whites; and lastly Indians/Asians.

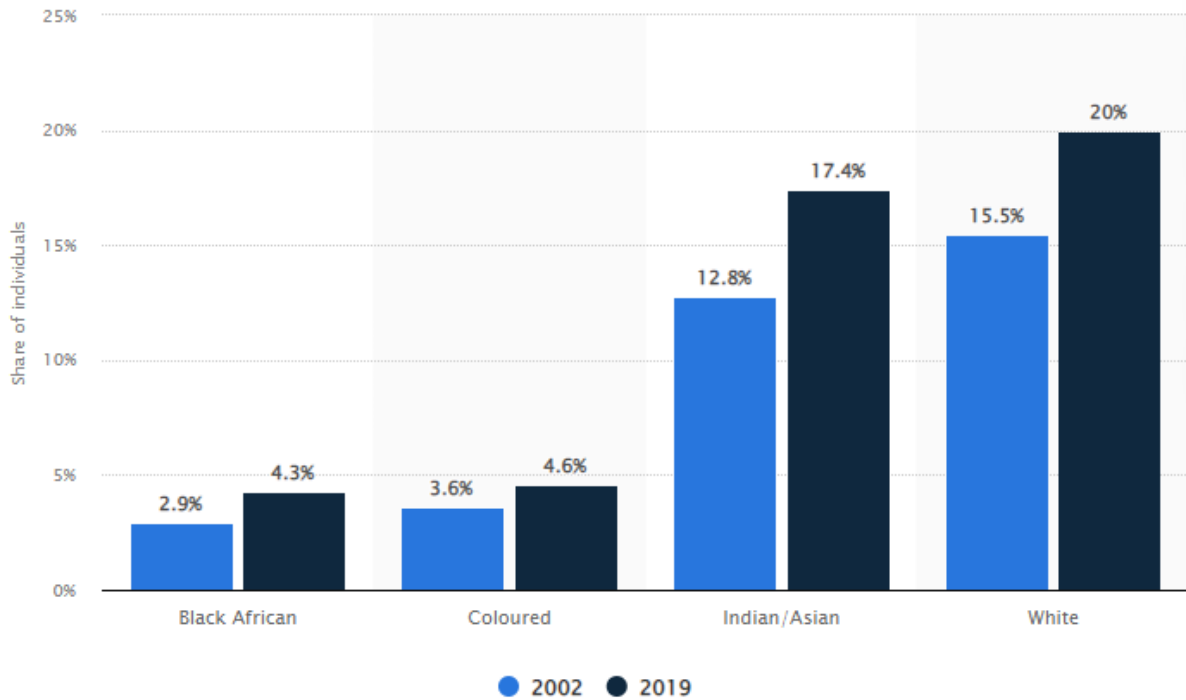
Fig: 3: SA Unemployment rate by population and sex



Source: Statistics South Africa (2021)

Figure 3 above shows that Black Africans make up the majority racial group in terms of the unemployment rate, whilst whites make the least. No doubt a trait left behind by Apartheid. Unemployment in South Africa is also very closely correlated to education. Blacks have the least number of years and quality of education, whereas whites have the most number of years and the best quality, hence the unemployment rate dynamics shown in Figure 3 above.

Fig 4: Share of Student Participation Rates for Individuals Aged 18-29 in South Africa in 2002 and 2019, by Population Group

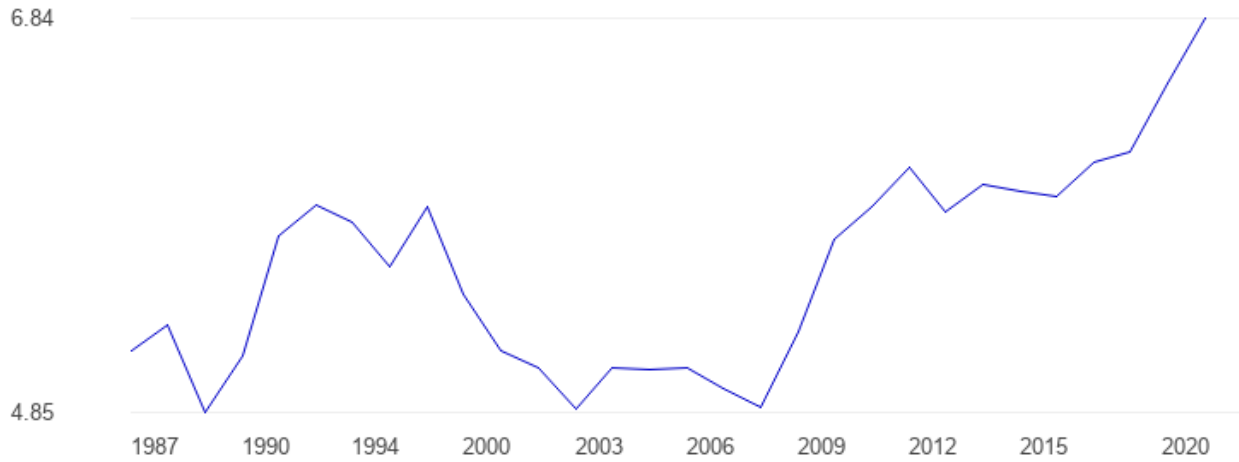


Source: Statista (2021)

As can be seen from Figure 4 above, the Apartheid population dynamics are still very much in place. For individuals at a tertiary level age Blacks/Africans have the lowest attendance rate for 2002 and 2019 at 2.9% and 4.3% respectively, and whites have the highest attendance rates for 2002 and 2019 at 15.5% and 20% respectively.

What is most interesting from Figure 4 is how the percentages across all the different racial groups have increased over the period under observation i.e. 2002-2019. A variable worth looking at that might explain this increasing phenomenon is the 'Public spending on education as a percentage of GDP.'

Fig. 5: Public Spending on Education as a % of GDP



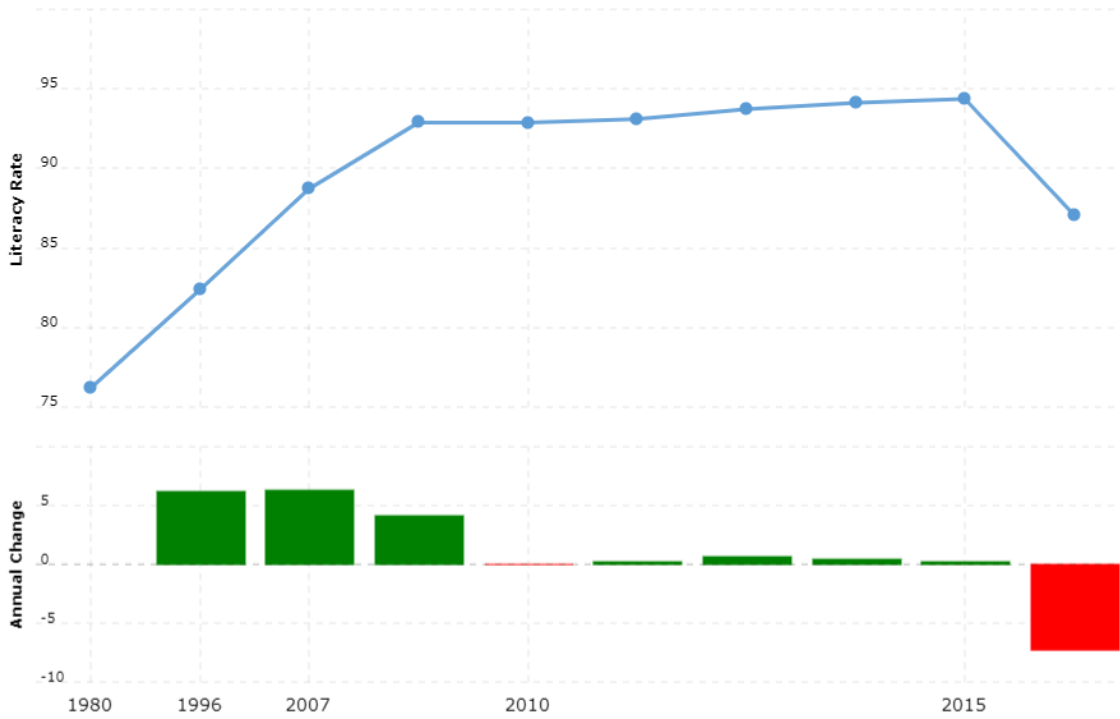
Source: UNESCO (2021)

Definition: General government expenditure on education (current, capital and transfers) is expressed as a percentage of GDP. It includes expenditure funded by transfers from international sources to government. General government usually refers to local, regional and central governments.

Figure 5 displays South African public spending on education as a percentage of GDP between the years, 1987 – 2020. The average value for this variable is 5.57% with a minimum of 4.85% in 1989 and a maximum of 6.84% in 2020.

What has been interesting though is the gradual increase in Figure 5 in the new millennium, which could possibly explain the rising proportions across all the different races. From a Keynesian perspective it could be a reflection that a sector that is getting a larger share of the government budget as time goes on, is more likely to grow when compared to other sectors in the economy over time.

Fig. 6: South Africa Literacy Rate 1980 - 2017



Source: World Bank (2022)

Definition: Illiteracy rate in South Africa is calculated by dividing the number of people above the age of 20 who are not literate, by the corresponding age population and multiplying the result by 100. The literacy rate would then just be the complement of the illiteracy rate.

There has been a steady increase in the literacy rate of South Africans from 1980 – 2019. A decline came in 2015 – 2019. This is a positive sign in South Africa’s education system, and possibly the end of Apartheid.

7. Conclusion

As a labour economist who has studied South African labour markets for a long time, I think I can conclude that education is still very much correlated with employment in the country. Unfortunately access to that education is still very much influenced by Apartheid dynamics.

The majority racial group is by far the least educated and consequently the most unemployed. The minority racial group is the most well-educated group and has the lowest unemployment rate.

8. Policy Recommendations

Inasmuch as improving the education system might make individuals more productive and therefore more employable, the public sector especially, needs to employ tactics that will guarantee lower unemployment rates in South Africa.

9. References

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