A Study of Covid-19

Amy Visser[a]

[a]*Stellenbosch University, South Africa*

Abstract

This article aims to discuss the impact of the Covid-19 pandemic through a variety of channels, including the experience of the pandemic on African countries versus other regions, the impact the virus had on specific concentrated groupings, and the effect of speed of increased hospitalisation facilities on ICU admissions over the period.

1. Introduction

This article aims to discuss the impact of the Covid-19 pandemic through a variety of channels, including the experience of the pandemic on African countries versus other regions and the impact the virus had on specific concentrated groupings.

Email address: (Amy Visser)

Contributions:

The data utilised in this report has been kindly provided by Our World in Data.

2. Data

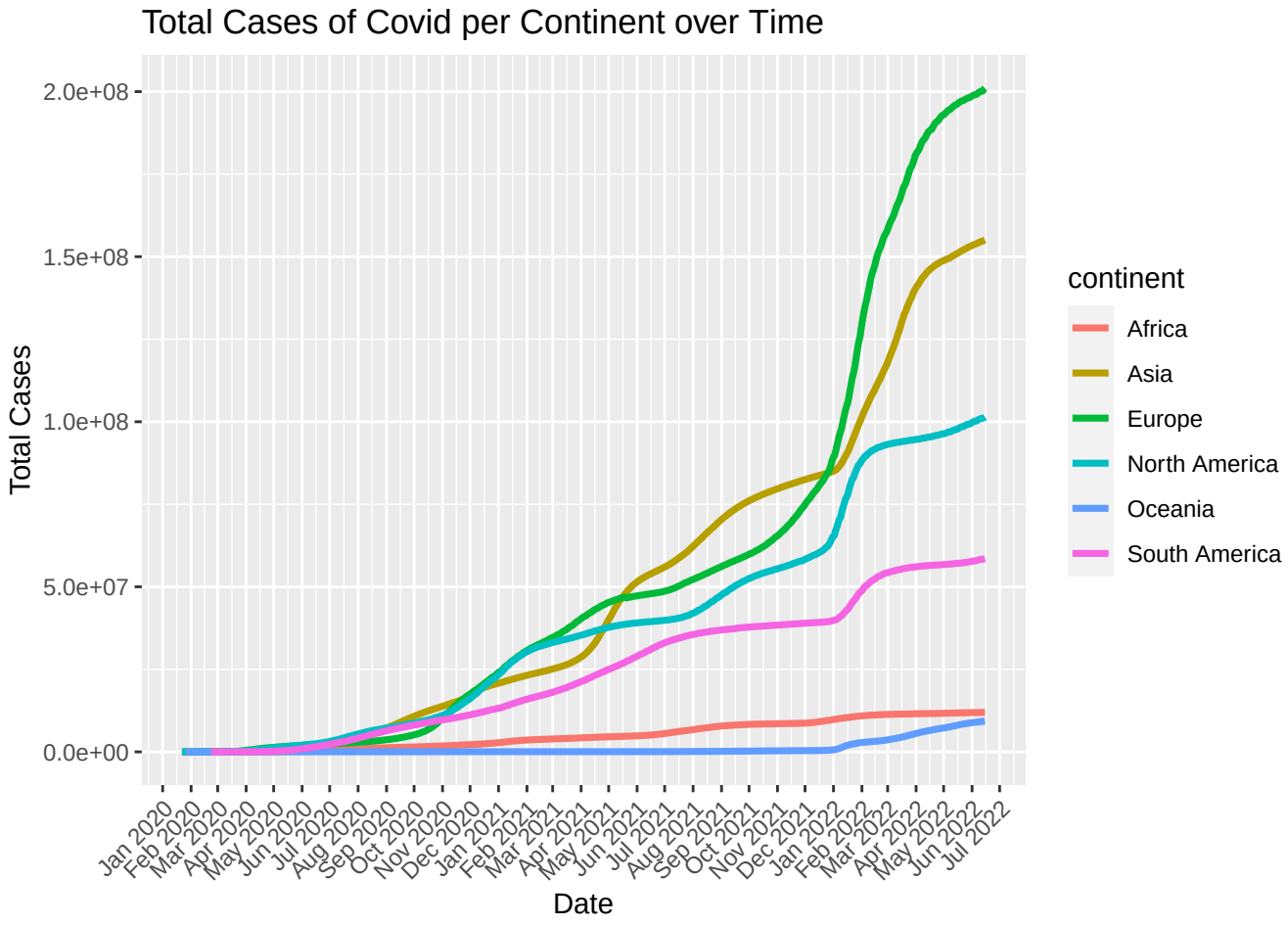

Figure 2.1: Covid Incidence in Africa compared to Other Regions

As we can see from Figure 2.1, it appears as though Africa experienced a relatively dampened severity of the pandemic compared to other regions. In fact, only Oceania experienced lower case incidences than the continent of Africa. It must be noted, however, that this may have been due to a lack of testing facilities available on the continent compared to other, more wealthy, continents.

Table 2.1: Total Number of Cases and Deaths by Continent

continent	TotalCases	TotalDeaths
Africa	11941511	254379
Asia	154300990	1432514
Europe	200737324	1847300
North America	101462880	1448053
Oceania	9332902	13253
South America	58463479	1277086

While Africa's case number was high (seen in 2.2), the deaths are markedly lower than other continents such as Asia, Europe and North America.

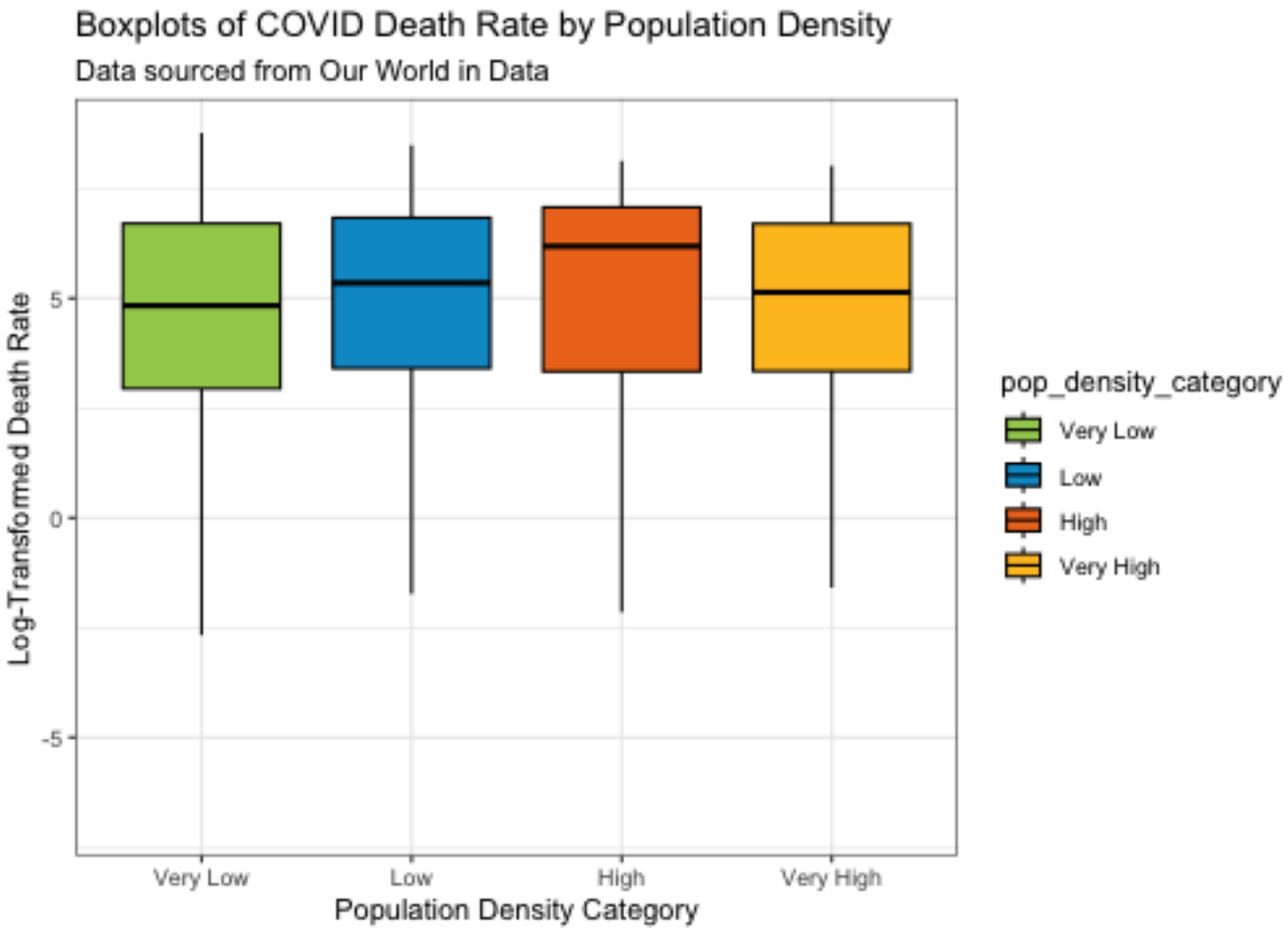

Figure 2.2: Box Plot of Deaths by Population Density

As can be seen in **??**, the log-transformed number of total deaths increases as the population density increases. This, however, appears quite marginal and even decreases for 'very high'.

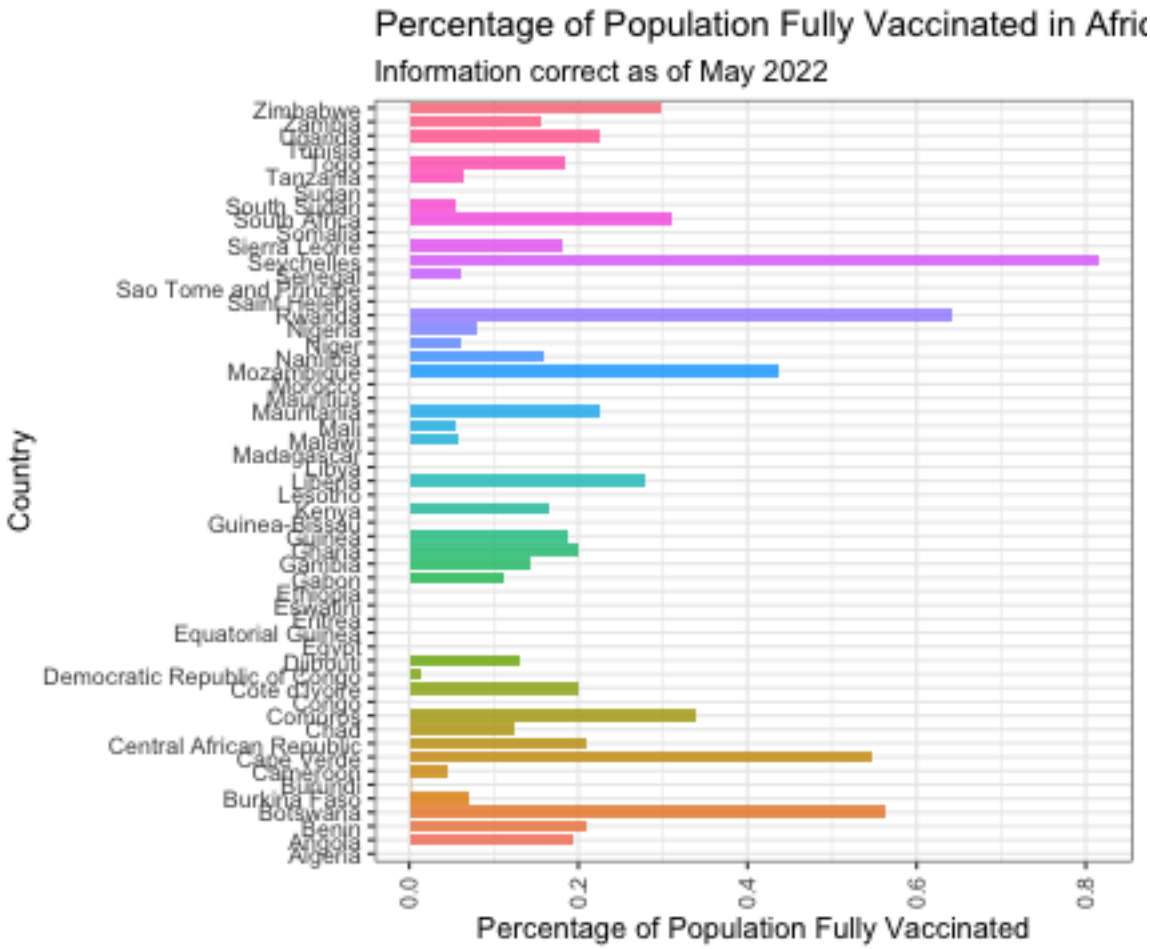

Figure 2.3: Total Percentage of Population Vaccinated in African Countries as of May 2022

Unfortunately, not all African countries posted their vaccination statistics on a daily basis. Thus, the most recent date with the least amount of missing data was chosen to perform an analysis on the vaccination rate of countries within Africa. Figure 4 showcases the percentage of the population fully vaccinated per African country, indicating that Botswana, Rwanda and the Seychelles have the greatest proportions of their populations vaccinated.

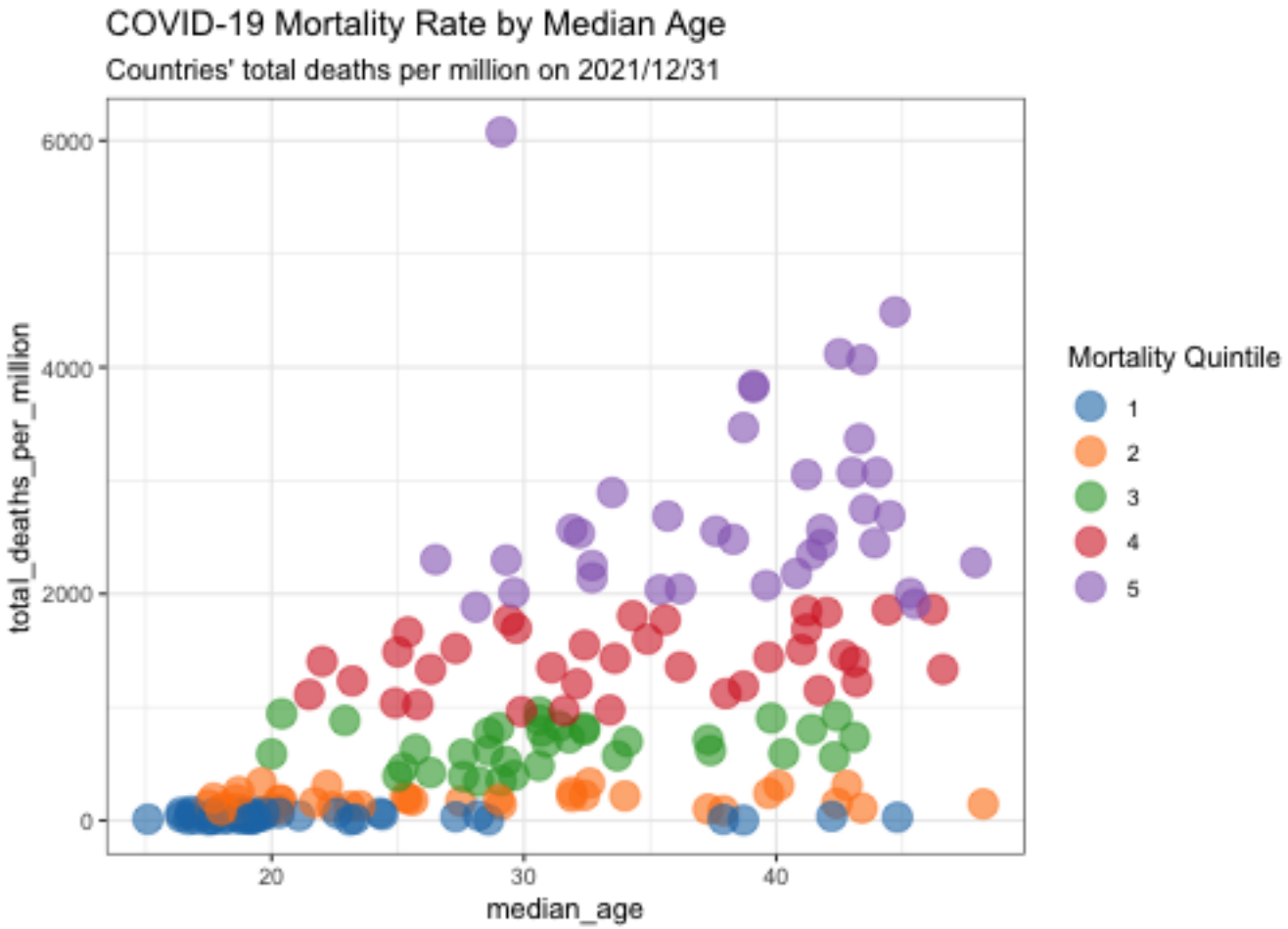

Figure 2.4: Mortality Rate of Countries by Median Age

As can be seen in 2.4, the mortality rate spikes a lot higher for nations with higher median ages than those with lower median ages. This is because Covid-19 has been proven to affect the elderly at a much higher incidence than their younger counterparts.

3. Conclusion

This report details the effects of the Covid-19 pandemic through various modelling techniques and decompositions. Through this, we observe that Covid-19 disproportionately effects elderly individuals, and that Africa was affected by the pandemic to a lesser extent than other continents.