

A Rising Tide that Does Not Lift All the Boats: Ripple Effects of Urbanization in Brazil and South Africa

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Abstract

This article examines the current state of urbanization in Brazil and South Africa, including economic development in two countries whose main economic sources are tourism services, among others, but whose urbanization problems appear at two extremes. Furthermore, the reasons for the false urbanization in Brazil and the possible reverse urbanization in South Africa are briefly explained. The article analyzes the historical and geographical reasons for the large gap between the levels of urbanization among the two countries despite having similar levels of GDP per capita. The article also analyzes the various ripple effects of urbanization in Brazil and South Africa, such as various environmental and health problems. All these ripple effects have ethical implications that require policy changes by the two governments.

I. Introduction

Brazil and South Africa have different histories, political backgrounds, economic structures and levels of urbanization, but they are similar in terms of trends in economic development. According to the World Bank (2022), Brazil had an urban population of 87.1 percent in 2020, while South Africa's urban population has risen from 47.8 percent in 1970 to 67.4 percent in 2020. Despite the fact that “[n]o country in the industrial age has ever achieved significant economic growth without urbanization,” urbanization increases insecurity, rootlessness, the potential for violence and crime, and environmental problems, all of which are referred here in this article as ripple effects of urbanization.¹

This article is divided into six sections: after this introduction (Section I), Section II summarizes some of the literature analyzing the different periods of urbanization in Brazil and South Africa. The third section analyzes how three key socio-economic indicators (gross domestic product (GDP) per capita adjusted for purchasing power parity (PPP), life expectancy and adult literacy rates) have evolved over time in the two countries. The fourth section presents an analytical comparison of key facts related to urbanization in both countries. The fifth section outlines ethical

¹ United Nations Population Fund (UNFPA) (2007), p. 1.

concepts and frameworks related to policy solutions in both countries in the face of urbanization, before the last section provides some conclusions.

II. Brief Literature Review

There is a large literature on urbanization in developing countries, including specifically for Brazil but there are relatively few studies focusing specifically on South Africa. Martine and McGranahan (2010) and Vicino and Fahlberg (2017) focus on Brazil, while Turok and Borel-Saladin (2014) focus on South Africa. Robertson (2019) covers mental health and urbanization in a variety of countries, including Brazil and South Africa. Chauvin, Glaeser, Ma and Tobio (2016) examine the difference of urbanization in Brazil, China, India and the United States. While each publication looks at different problems related to urbanization, all mention some ripple effects.

- Martine and McGranahan (2010) review the urbanization experience of Brazil, which has reached levels of urbanization that surpass those of most European countries. They acknowledge (p. 54) “that cities, and large cities in particular, have clear advantages in global economic competition and greater potential for improving their residents’ social conditions.” However, the prospects for sustained growth largely depend on the capacity of a country’s cities to compete in the current context of globalization. One of their key lessons for other urbanizing countries is that a regional approach is required to deal with the emerging problems as cities tend to become more spatially, politically and administratively fragmented.
- Vicino and Fahlberg (2017) use Brazil’s largest protest in history in June 2013 as an example to analyze the importance of improving urban life in the process of urbanization from the perspective of globalization and history. They also show how governments and citizens should respond to a variety of challenges, including especially population growth and social change in major cities.
- Turok and Borel-Saladin (2014) study the relationship between urbanization and living conditions in South Africa, highlighting the interaction between the economy, society and environment of a city. They also analyze whether other levels of urbanization in South Africa have a positive trend of synchronous development. They focus on the relationship between labor force growth and employment growth in cities of different sizes. Turok and Borel-Saladin (2014) also examine the ability of cities to provide infrastructure and explore the economic capacity needed to maintain the existing urban system to adapt to the new economic activities and alternative housing for low-income people in South Africa in terms of historical fault repair, resources and health protection.
- Robertson (2019) describes the impact of urbanization on mental health service provision in the Brazil-Russia-India-China-South Africa (BRICS) economic bloc and sub-Saharan Africa. Focusing on Brazil and South Africa, they find that in both countries, the urban health system has insufficient prevention and treatment facilities, and the urbanization process aggravates the shortcomings in the provision of care, including especially the neglect of health problems of vulnerable groups.
- Chauvin, Glaeser, Ma and Tobio (2016) examine the differences of urbanization across Brazil, China, India and the United States. For the implication of the spatial equilibrium hypothesis in Brazil, the authors point out that both the market and the social economy

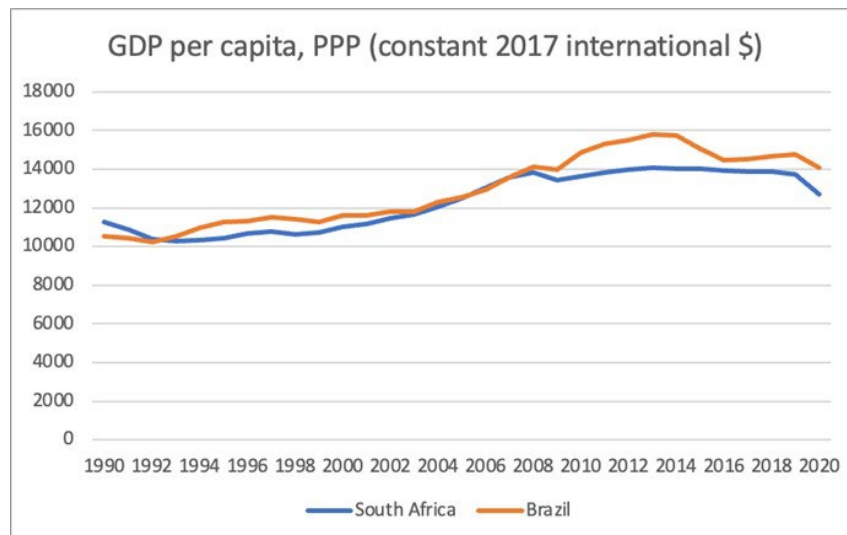
need human capital externalities. They come to the conclusion that differences in regional income growth and limited migration make it more difficult to develop a balanced real estate space.

III. Socioeconomic Background

Brazil and South Africa are geographically located on two different continents, but they are both BRICS countries with similar economic strength. Yet, they have different technologies and different industrial sectors, and completely different vegetation distribution. As two developing countries, Brazil and South Africa have encountered the problem of urbanization in the process of economic development, and the chain reaction of different types of urbanization is also different. The socio-economic background of the two countries examined in this section provides more information on differences and similarities across the two countries in terms of GDP per capita, average life expectancy at birth and adult literacy.

Figure 1 shows PPP-adjusted GDP per capita in South Africa and Brazil in constant 2017 dollars from 1990 to 2020. South Africa's GDP per capita was \$11,261 in 1990 and reached \$12,666 in 2020. Brazil's GDP per capita was with \$10,521 a bit lower in 1990 but reached \$14,064 in 2020. Although the trend of GDP per capita over time is similar in both countries, Brazil surpasses South Africa in terms of GDP per capita growth from 2009 to 2013, after which the two countries' GDP per capita is again similar as Brazil's GDP per capita experienced a significant decline in 2015 and 2016.

Figure 1: GDP per capita, PPP (constant 2017 international dollar)

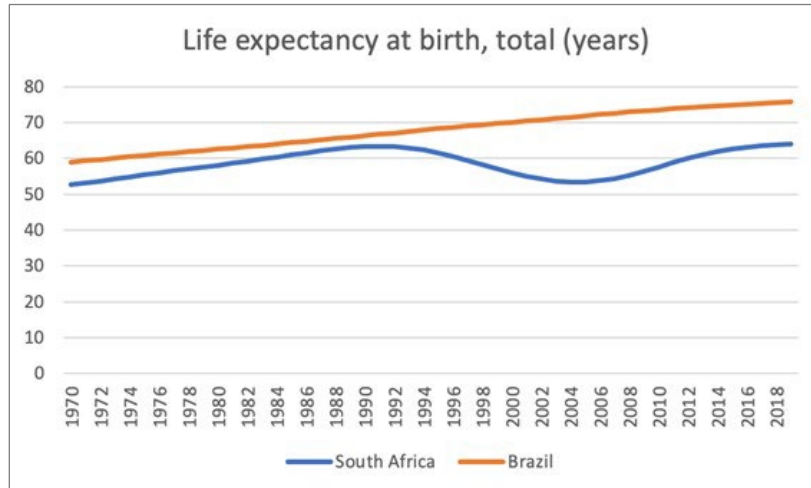


Source: Created by author based on World Bank (2022).

Figure 2 shows the evolution of life expectancy in South Africa and Brazil from 1970 to 2019. In 1970, the average life expectancy in South Africa was 52.6 years and increased steadily to 63.4 years in 1991 and then began to slow down to 53.4 years in 2004 before increasing again and reaching 64.1 years in 2019. Brazil's average life expectancy was 58.9 years in 1970, and has been

increasing steadily over the past five decades, reaching 75.9 years in 2019, a considerably higher level than South Africa.

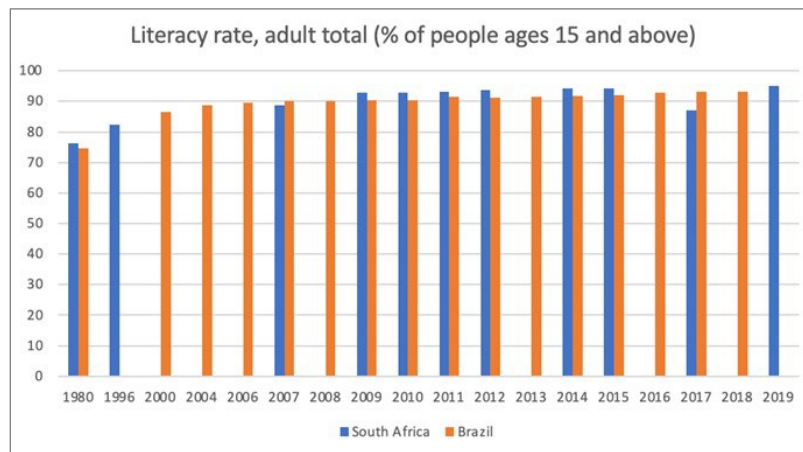
Figure 2: Adult Life Expectancy at Birth (years), 1970-2019



Source: Created by author based on World Bank (2022).

As shown in Figure 3, the adult literacy rate of Brazil and South Africa has increased in line with the increase in GDP per capita and life expectancy. Overall, Brazil’s adult literacy rate has been increasing from 74.6 percent in 1980 to 93.2 percent in 2018, with the fastest increase happening from 1980 to 2007, while the period from 2007 to 2018 shows relatively little progress.

Figure 3: Adult Literacy Rate (percent of people ages 15 and above)



Source: Created by author based on World Bank (2022).

For South Africa, the overall trend in adult literacy rates has been more volatile than in Brazil. South Africa’s adult literacy rate increased significantly from 76.2 percent in 1980 to 92.9 percent in 2009, it then increased slowly to 94.4 percent in 2015, but suddenly dropped to 87.0 percent in 2017. It then returned to its previous high level two years later in 2019. Comparing the two

countries for the few years we have data for both countries, it is interesting to note that South Africa's adult literacy rate was higher than Brazil's in 1980, then lower in 2007, then again higher from 2009 to 2015, while being significantly lower in 2017.

IV. Analysis of Facts

This analysis of facts related to urbanization in Brazil and South Africa is divided into two subsections. The first subsection outlines some key facts related to the urban populations of Brazil and South Africa, mainly by showing the history of urbanization in both countries and what factors have contributed to the rapid economic development of both countries through the change in the proportion of urban population in both countries, as well as an analysis and comparison of the proportion of urban population living in slums and the proportion of urban population living in the largest cities. The second subsection presents data on some aspects related to urbanization in both countries, such as environmental and health issues.

IV.1. History of Urbanization

Brazil and South Africa have experienced similar economic development but have different histories of urbanization. Brazil's urbanization began as a colonial economy based on exporting agricultural products. Then, the discovery of precious metals led to the establishment of inland cities during the mining era, the expansion of the original cities and the emergence of new cities in the early nineteenth century. This led to a dramatic increase in the population of Rio de Janeiro and rapid urban development, followed by the export of coffee cultivation and the establishment of railroads. These developments gave Brazil's urbanization a boost and material support, followed by mass immigration. The subsequent industrialization led to the further development and modernization of major cities.²

South Africa is known for its rich mineral resources such as diamonds and gold, as well as its agricultural development, which makes it one of the world's leading exporters of crops. The Dutch entered South Africa as early as the 17th and 18th centuries with their seafaring skills, and subsequently these native white elites played a crucial role in the early development of South Africa. The subsequent discovery of diamonds and gold in 1867 and 1886 ushered in a large number of European immigrants thus changing the demographic structure and traditional agricultural economy of South Africa. Because of its geographic distance from the world wars, industrial development and economic prosperity showed a different historical course than in many other African countries. However, a complex racial situation with severe racial discrimination, especially the so-called system of apartheid constrained South Africa's development.³

IV.1.a. Changes in the Proportion of Urban Population

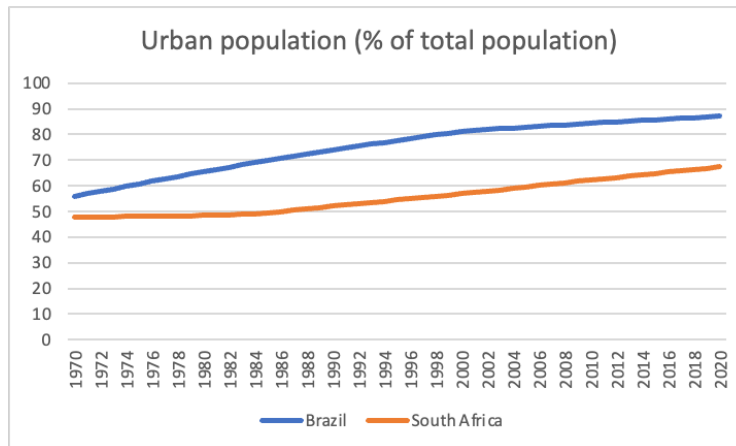
As shown in Figure 4, the urban populations of both Brazil and South Africa have shown different patterns of growth over the last fifty years, with the proportion of Brazil's urban population initially growing faster than South Africa's. In 1970, the difference between the two countries was small, with 55.9 percent of the Brazilian population living in urban areas and 47.8 percent of the South African population living in urban areas. The gap between the two countries then grew, reaching its maximum in 2000, with a difference of 24.3 percentage points. The gap then decreased, and the

² This paragraph is mostly based on Martine and McGranahan (2010).

³ This paragraph is partly based on information provided in Turok and Borel-Saladin (2014).

two countries show similar trends from 2014 onwards. By 2020, Brazil had 87.1 percent of its population living in urban areas while South Africa had 67.4 percent of its population living in urban areas, hence a large gap of some 20 percentage points still exists in the share of the urban population between the two countries today.

Figure 4: Urban Population (percent of total population)

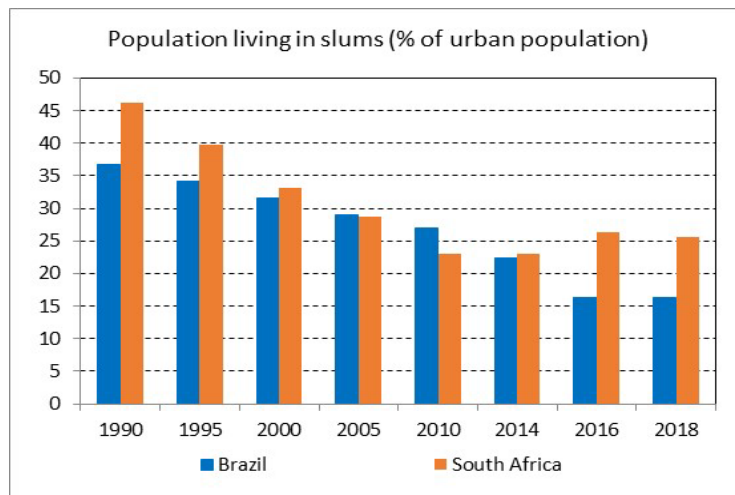


Source: Created by author based on World Bank (2022).

IV.1.b. Slums and Concentration of Population in the Largest Cities

Urban population ratios are useful quantitative indicators of urbanization but say little about the quality of urbanization. One partly qualitative indicator is the percentage of the urban population living in slums, which is shown in Figure 5. In 1990, 36.7 percent of Brazil’s urban dwellers lived in slums, while a shocking 46.2 percent of South Africa’s urban dwellers lived in slums in the same year. Since then, the urban slum-dwelling population has declined at different rates in the two countries, with South Africa improving faster than Brazil and the two countries having almost the same share in 2005, with 29.0 percent in Brazil and 28.7 percent in South Africa.

Figure 5: Percentage of Urban Population Living in Slums, all available years

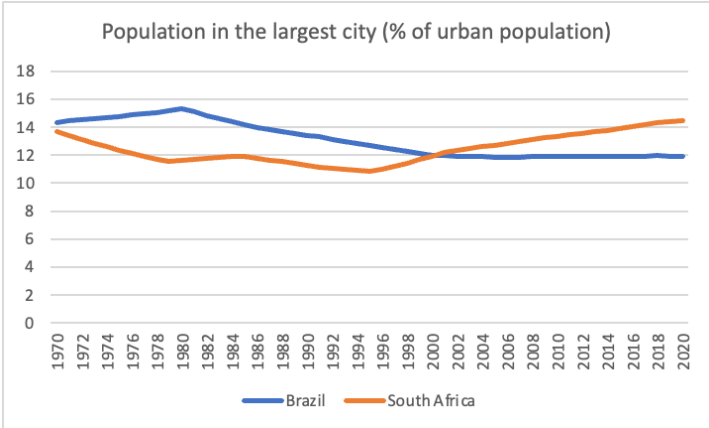


Source: Created by author based on World Bank (2022).

By 2010, Brazil’s urban slum population decreased to 26.9 percent compared to South Africa’s, which decreased to 23.0 percent. By 2016, Brazil’s slum-dwelling population had declined further to 16.3 percent of the urban population and remaining at about that level in 2018. In South Africa, on the other hand, the percentage of the urban population living in slums stagnated from 2010 to 2014, after which it increased to 26.3 percent in 2016, before finally making modest progress, reducing it to 25.6 percent in 2018. All in all, the increase in South Africa’s slum population was small, but dilutes the advantages of urbanization, indicating that South Africa is not doing enough or is affected by other factors, while Brazil’s situation has been improving more smoothly.

The task of reducing the share of the population in slum cities is complicated by higher fertility rates in slums and continued migration from poor rural areas into slums. As Figure 6 shows, while the share of the urban population in the country’s largest city has been decreasing in Brazil since 1982, it has been increasing in South Africa since 1996. The share of the urban population living in South Africa’s largest city (Johannesburg) increased significantly from 11.0 percent in 1996 to 14.5 percent in 2020. On the other hand, the share of the urban population living in Brazil’s largest city (São Paulo) has been increasing from 14.3 percent in 1970 to 15.1 percent in 1981. It then declined steadily to 11.9 percent in 2020, hence, ending up 2.6 percentage points lower than in South Africa. Interestingly, the two countries have alternated between increasing and decreasing trends of the urban population living in the largest city, implying that the problems are different in the two countries and that the process of solving them are therefore also different.

Figure 6: Population in the Largest City (percent of urban population), 1970-2020



Source: Created by author based on World Bank (2022).

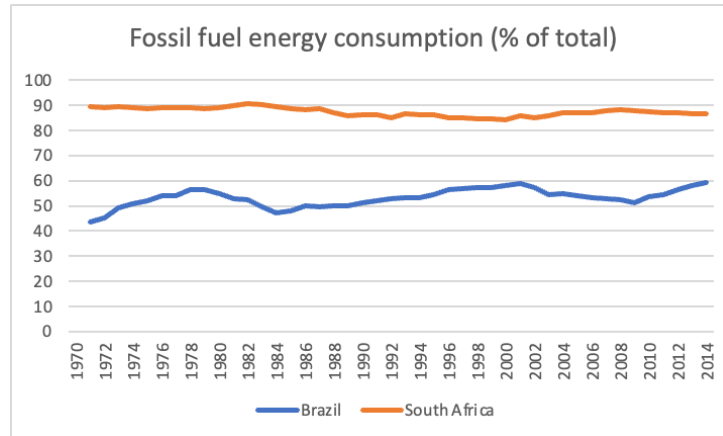
IV.2. Specific Aspects of Urbanization

The small but densely populated slum areas of Brazil and South Africa are – combined with industrialization – causing a variety of environmental and health problems.

IV.2.a. Environmental Problems

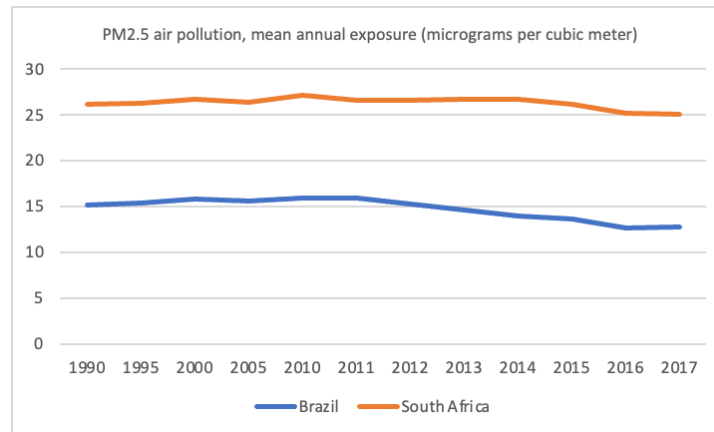
Urbanization and industrialization are expected to lead to an increase in the percent of fossil fuel energy consumption, an increase in pollution and per capita carbon dioxide emissions. However, as shown Figures 7 to 9, the overall trends for these three indicators do not confirm this. The evolution of these three indicators shows an overall stable trend for both countries. The levels for all three indicators are however higher in South Africa than in Brazil.

Figure 7: Fossil Fuel Energy Consumption (percent of total)



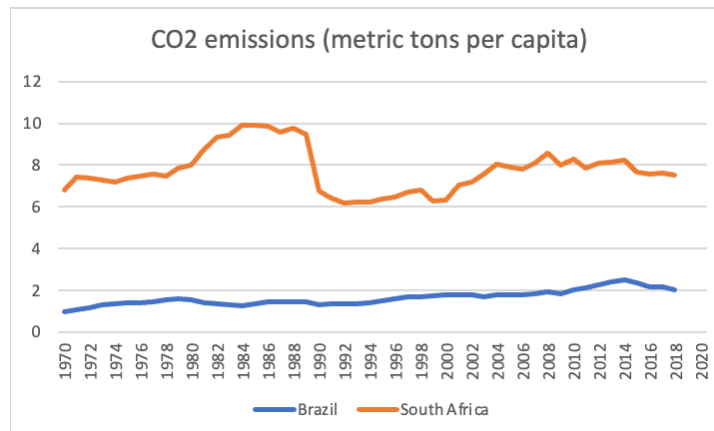
Source: Created by author based on World Bank (2022).

Figure 8: Mean Annual Exposure to PM2.5 Air Pollution (micrograms per cubic meter)



Source: Created by author based on World Bank (2022).

Figure 9: Carbon Dioxide (CO₂) Emissions (metric tons per capita)



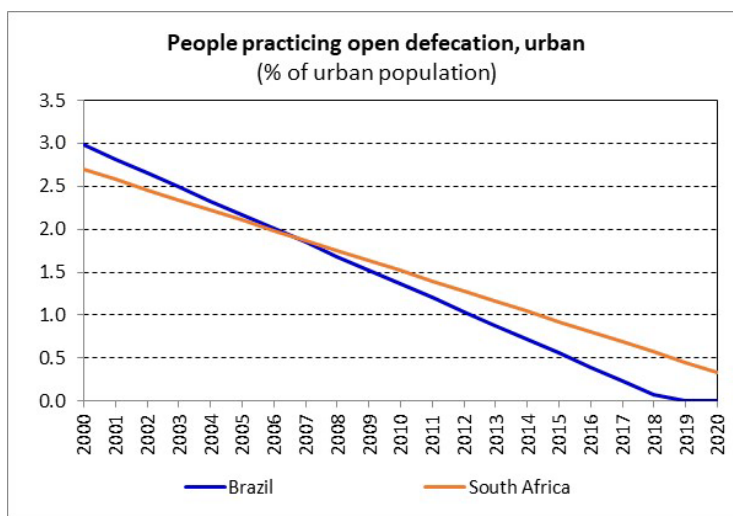
Source: Created by author based on World Bank (2022).

IV.2.b. Health-related Issues

In addition to environmental pollution caused by emissions from industrial production and various types of transportation, there are also factors of personal hygiene, such as the behavior of people defecating in the open. For example, the microbial bacteria in excrement pollute water quality through surface runoff, water circulation and other transmission routes. Fortunately, as can be seen in Figure 10, this phenomenon has been reduced for the urban population in both Brazil and South Africa.

In year 2000, 2.9 percent of the Brazilian urban population and 2.7 percent of South Africa's urban population practiced open defecation. Brazil then decreased the problem of open defecation faster than South Africa, finally remaining completely free of this phenomenon after 2019, while in South Africa a marginal 0.45 percent of the urban population still practiced open defecation in 2020. The policy of prohibiting and punishing the practice, the improvement of the education and personal qualities of the population, and the improvement of infrastructure such as the increase of the number of public toilets have helped to reduce open defecation.

Figure 10: Urban Population Practicing Open Defecation (percent of urban population)



Source: Created by author based on World Bank (2022).

On the other hand, relatively little progress has been made with decreasing the incidence of malaria and tuberculosis. As Figures 11 and 12 show, while the incidence of malaria is far higher in Brazil than in South Africa, the incidence of tuberculosis is far higher in South Africa than in Brazil.

From Figure 11, we can see that the incidence of malaria in Brazil reached a peak of 22 cases per 1,000 population in 2000, and after several ups and downs, the overall situation has eased, remaining at 5 cases per 1,000 population in 2017, but nevertheless remains a critical health issue. The overall incidence rate of malaria is far lower in South Africa than in Brazil. The incidence of malaria in South Africa has been fluctuating, peaking at 5.8 cases per 1,000 people in 2001, falling to a low of 0.2 cases per 1,000 people in 2015, and then rising to four cases per 1,000 people in 2017 before finally falling back to 1.6 cases per 1,000 people in 2018.

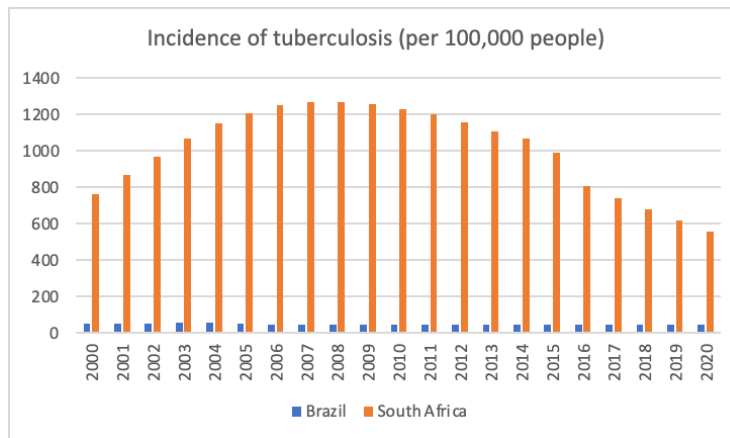
Figure 11: Incidence of Malaria (per 1,000 population at risk), 2000-2018

As detailed in the text.

Source: Created by author based on World Bank (2022).

Figure 12 shows that in South Africa, the incidence of tuberculosis has increased from 762 cases per 100,000 people in 2000 to 1,270 cases per 100,000 people in 2008, after which it decreased to 580 cases per 100,000 people in 2020. In Brazil, the incidence of tuberculosis has been a fraction of South Africa's incidence and remained relatively stable at around 47 cases per 100,000 people from 2000 to 2020.

Figure 12: Incidence of Tuberculosis (per 100,000 people), 2000-2020



Source: Created by author based on World Bank (2022).

V. Ethical Analysis

The first subsection of this ethical analysis focuses on describing ethical origins and existing ethical structures of urbanization in Brazil and South Africa. It examines some of the policies that have been used in both countries to ameliorate some of the problems caused by urbanization and how these policies can reduce the percentage of people living in slums as well as improve the allocation of resources such as urban land and employment opportunities. The second subsection relates the Universal Declaration of Human Rights and the framework of ethical standards to modern urbanization.

V.1. Ethical Origins

Both Brazil and South Africa have problems caused by urban population growth and rural-urban migration, which have been reduced but remain difficult to solve. There remains a lack in the quality of urban life, infrastructure and especially health care in both countries due to poor land use and inadequate resource allocation. This subsection examines the reasons for the lack of urban services in both countries based on an ethical analysis and reviews to some extent how governments can improve the situation.

V.1.a. Ethical Origins in Brazil

In Brazil, where demographic urbanization preceded economic urbanization and the urbanization rate surpassed that of most industrialized countries, urbanization came at the cost of creating a large number of slums. The interaction between household mobility and housing supply elasticity then makes the imbalance in urban economic growth apparent as the supply of low-income housing is more flexible than the supply of quality-housing in response to changes in market conditions.

At the same time, as the population of the largest cities increases to near saturation levels, the process of urbanization spreads to other high wage cities such as the second largest cities and leads to the escalation of slums and high demand for urban services.⁴ The unresolved slum problem is related to the large number of unemployed people caused by forced industrialization and forced urbanization. The government's policy of high taxation has invested in the construction of industrial parks rather than in public education and health, while the government's use of administrative land acquisition has created a poor and poorly qualified workforce.

On this basis, the Brazilian government's approach to slums was inadequate. Specifically, the government increased employment opportunities by providing large subsidies to businesses and through economic projects such as the creation of parks and infrastructure, while creating the National Housing Bank and the Urban Planning Service in 1964 to handle urban planning and low-income housing. Similarly, the government encouraged and supported private sector financing of housing development.

However, the lack of government guarantees in the implementation process has resulted in a vicious circle in which resources are not really distributed equitably as intended, subsidies are misappropriated by corporations for their own benefit, and housing benefits are disguised by real estate companies, whose primary responsibility and provision of housing remains with the rich and powerful. In short, the actual problems of training, employment and housing for the poor are beyond the control of the government, the gap between the rich and the poor is growing, and there is a real concentration of land and resources in the hands of a few, which implies a moral failing.⁵

V.1.b. Ethical Origins in South Africa

In the 1940s, in response to the growing number of African people entering the cities, the government introduced apartheid policies to avoid the urbanization of Africans, but while the capital-intensive industrial development strategy provided more skilled jobs for Africans, the contradiction between this strategy and the apartheid education system led to structural unemployment in the cities. Moreover, under apartheid, in addition to the formal employment discrimination enshrined in South Africa's legal system, black South Africans were severely restricted in their choice of residence and forced to live in their own homelands.

While they were able to move freely after the abolition of apartheid, the cost of distance to move continued to affect the inflow of rural people from different urban areas. This population distribution emphasizes the complementarity between low-skilled and high-skilled labor in urban areas, but not in rural areas. In other words, if the foreign population hits both urban and rural

⁴ Alves (2021).

⁵ Martine and McGranahan (2010).

areas, it will increase the proportion of the population living in the cities, which in turn leads to the growth of slums.⁶

Geyer Jr, Geyer, du Plessis and Eeden (2012) also suggest that the periphery of large South African cities generally tends to decentralize development rather than grow indefinitely within the city, and that this trend of migration from large urban agglomerations in South Africa illustrates the delayed urbanization of low-income urban migrants despite the fact that productivism is an active driver of urbanization. More importantly, they show that socio-economic factors such as high land costs and traffic congestion in central areas play a role in the housing problem, and that South African cities still need to work on integrating social urban spaces.

As an example, the Reconstruction and Development Programme (RDP) in South Africa is providing housing for the poor, but due to high unemployment and low incomes, many people are not eligible for housing, and the ensuing poverty and housing crisis is reoccurring. At the same time, the government's existing redevelopment program, which involves building houses on cheap and readily available land far from the city, means that the land is not being used efficiently and results in a lot of money being spent on transportation for many people. In short, building good housing and infrastructure closer to the city could go a long way to alleviating this problem of spatial dislocation, which could be followed by reducing the number of slums in South Africa through increased subsidies and rental options or by reshaping slums by design to improve housing quality.

Turok and Borel-Saladin (2014) also do find that there is capacity for building infrastructure for cities of different sizes including formal housing and alternative housing construction for low-income South Africans, and that these combinations can also improve resources and health as well as maintain existing urban systems to accommodate new economic activity. Furthermore, "during the course of HABITAT III, one of South Africa's most crucial urbanization summits, the establishment of a new urban agenda was reaffirmed. The aim of the summit is to set South Africa on the path of achieving sustainable urban development."⁷ As a result, the South African government has a moral responsibility to recognize the need for long-term planning for urbanization issues.

V.2. Ethical Concepts and Frameworks for Urbanization

Article 13 and article 25 of the UN's Universal Declaration of Human Rights (1948) state respectively that "everyone has the right to freedom of movement and residence within the borders of each state" and that "everyone has the right to a standard of living adequate for the health and well-being of himself and of his family". These basic rights relate to the rightful abolition of apartheid in South Africa but at the same time the legacy of the policy needs to be addressed. Moreover, it is an ethical argument for the simple needs of people and their basic right to happiness, that the state and government should not drive away the poor or restrict the rural-urban influx or migration, but rather support them as much as possible and identify the real causes of the slum problem and compare the different urbanization problems in Brazil and South Africa in order to find a positive and sustainable model of urban development.

Ethical inferences are also essential. Specifically, the distribution and domination of benefits and subsidies for housing and employment for the poor by the powerful in Brazil, corporations and

⁶ Bakker, Parsons and Rauch (2020).

⁷ Ekkannath (2017), p. 9.

real estate companies, the irrational use of land for housing construction in South Africa, and the racial discrimination in the migration of black South Africans to white South African areas or other urban centers and employment issues, all violate the same basic ethical principles or impede the right of the poor to live in cities.

From a philosophical point of view, among the five approaches for ethical decision making summarized by the Markkula Center for Applied Ethics (2009), the utilitarian approach and the common good approach seems the most applicable ethical frameworks to modern urbanization. Since the utilitarian approach, as philosophers have emphasized, focuses on producing the greatest balance of benefits over harms, reducing the gap between rich and poor by providing more jobs and infrastructure while directing urbanization into a sustainable development model is maximizing the benefits of urbanization. And when the housing and health security of the poor or immigrant population gathered in slums is improved and they are no longer marginalized but enter into a fair and virtuous economic model, the country's workforce and population quality will grow significantly and contribute to a virtuous cycle in the national economy, with more innovative ideas and human resources to find new materials or recyclable alternatives to protect the environment.

For the common good approach, it emphasizes that it is important to focus on the well-being of each individual, because people are interconnected and the collective or community is better off when the individual is better off. Hence, when the state and the government are aware of the needs of the people especially the disadvantaged and find solutions, the whole country will be better. For example, Robertson (2019) describes the lack of prevention and treatment facilities in urban health systems resulting from the urbanization process in Brazil and South Africa together, thus neglecting the health problems and care needs of vulnerable populations.

Therefore, the executives who identify the problem need to call on the general public to be aware of the problem and put aside discriminatory ideas such as race and gender to help each other and even influence the future career plans of some people such as becoming doctors. In summary, the continuing problems are a challenge for developing countries with growing economies and increasing urbanization, but policy changes in the right direction and moral support will make urban planning better and more effective.

VI. Conclusion

Both Brazil and South Africa have experienced significant levels of urbanization, mostly due to migration from rural to urban areas. This article examined the phenomenon of urbanization in these two countries and the complex chain reactions associated with it. It also analyzed the interventions in the governance process from an ethical perspective. Though the percentage of the urban population living in slums has been reduced, environmental and health problems as well as employment pressures and economic inequality remain. Better policies need to be adopted and implemented without being prevented by the powerful elite. Both governments have a moral obligation to increase education and awareness in order to give more equitable opportunities and resources. They have to try to understand their respective urbanization trends in order to being able to identify the advantages and disadvantages of different kind of urbanizations. They have to invest in infrastructure such as housing, water and health care, and more broadly, focus on sustainable development.

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