Apartheid-Era Spatial Inequalities, COVID-19, and the Challenge of Sustainable Development in South African Townships

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Abstract

The legacy of the apartheid spatial development plan and the recent COVID-19 pandemic remains evident in South Africa, especially in the densely populated township communities, and it is exemplified by the high unemployment rate, poor economic growth, and inequalities. Hence, jeopardizing the global commitment to the achievement of the 2030 Agenda for Sustainable Development Goals (SDGs). This study seeks to discuss (i) critical aspects of socio-economic attributes vulnerability during COVID-19 (ii) the coping and mitigation measures employed to reduce the spread of the virus, and a synopsis analysis of how the new pandemic has negatively impacted the global commencement toward the achievement of Sustainable Development Agenda 2030. Based on a qualitative research approach, a remote snowball technique was applied, and analysis focused on data collection by emails, semi-structured phone interviews, and from the Coronavirus Rapid Mobile Survey (NIDS-CRAM) dataset during the lockdown to analyse the impact of the pandemic. The findings reveal that the pandemic amplified the drowned economy creating unemployment, inequalities, and vulnerable communities' socio-economic circumstances due to drastic 5 lockdown protocols. The findings revealed gender disparities among those working in the formal sector were more vulnerable to unemployment. The results indicate that 69% of dwellers lost their jobs due to the pandemic and 42% depended on social grants for their survival and livelihood. The study further reveals that the majority of students were introduced to Blackboard, Zoom and Moodle to enrol in online courses but they did not know how to log in to the sites or submit their assignments. The COVID-19 pandemic has caused more havoc in some locations as of right now. Even with all these impacts, and restoration plans, the SDGs will still face significant challenges to meet their aim by 2030, and partnerships among countries worldwide can only be helpful at this juncture.

Keywords: COVID-19, Limpopo Province, snowball, Coronavirus Rapid Mobile Survey (NIDS-CRAM), Apartheid, Sustainable development goal (SDG) Agenda 2030, Economic growth

1. Introduction

In late 2019 in Wuhan, Hubei Province, China, the first cases of the novel coronavirus disease (COVID-19) were discovered. It developed into a full-fledged pandemic and spread quickly over numerous nations (Lu et al., 2020; Tian et al., 2020; Zhou et al., 2020; WHO, 2020). The pandemic therefore affected the global population in terms of morbidities, inclusive economic growth and mortalities and as well as slow down the achievement of the Sustainable Development Goals (SDGs) Agenda, 2030 (Saha et al., 2020; Coccia, 2020). One of the greatest challenges that received attention in developing countries concerning the pandemic was the slow economic growth, loss of jobs, underemployment, hunger, inequalities, and basic socioeconomic challenges (Castillo & Amoah, 2020; Connolly et al., 2020). The virus caused concern for researchers regarding human insecurity, especially public health, and economic growth. Beyond the virus's devastating health impacts, an effort by international and local communities to reduce and contain the spread of the pandemic exacted a massive economic and social cost. The World Health Organization (WHO, 2020) estimated that 8.8% of all working hours were wasted in 2020. Also, informal businesses were particularly hard hit by the pandemic. In a study survey of 4 520 businesses in 45 nations, 80% of micro-enterprises and 70% of local businesses said that COVID-19 had caused them to experience serious health and financial difficulties (WHO, 2020). Additionally, COVID-19 has had a ripple effect on social, economic, and environmental systems, which has slowed and even interrupted the achievement of the SDGs (Pradhan et al., 2021). Some SDGs have been significantly and immediately affected by the global pandemic, while others have been indirectly impacted (Martinoli, 2021). Although it is crucial to examine each layer of the problem, there is little proof that the COVID-19 pandemic has slowed down the implementation of the SDGs in local communities or how people responded to it. We would evaluate if and to what extent COVID-19 had impacted the local community implementation of the SDGs, a remote snowball technique was used, and South Africa was our case study.

Several studies of literature have shown that the COVID-19 impact has gone beyond health and economic crises. Boyacı-Gündüz et al. (2021) and Udmale et al. (2020) argue that the pandemic has interrupted and caused various challenges to the SGDs such as economic meltdown, education, gender equality, inequalities, poverty, and hunger. Boyacı-Gündüz et al. (2021) report that an estimated 3.3 billion of the world's labour force were at risk of losing their basic livelihood. Their findings indicate that potentially millions of household breadwinners would become unemployed, and in the worst scenario be affected by the virus and die (Deshpande, 2020; Ambler et al., 2020). The pandemic has had disastrous impacts on the local market economy, resulting in dysfunctional societal systems and communities, the closure of learning institutions, the implementation of remote working and individuals experiencing psychological crises and financial challenges (Van Bodegom & Koopmanschap, 2020).

In South Africa, townships were the most vulnerable due to a lack of access to clean and drinkable water, poor health facilities, an inadequate transport network and a lack of the social support systems that are typically available in urban areas. Kihato & Landau (2020) point out that township dwellers were more exposed and vulnerable to the prevalence of the pandemic compared to urban dwellers due to hospitals and information centres in urban areas being selected for dealing with the pandemic. For example, studies conducted in New York City indicate that the mortality rate of the African American (Black) and Hispanic communities was twice that of the White population

(Qian & Fan, 2020; Wade, 2020). This was due to the marginalised minority communities having inadequate access to healthcare centres during the COVID-19 pandemic (Egger et al., 2021). In the Global South, frequent and massive urban development has led to situations where a large proportion of people live in slums with inadequate housing and poor sanitary conditions (Kihato & Landau, 2020; Castillo & Amoah, 2020). Townships are highly connected, with poor housing, and access to clinics and medical facilities is difficult because of distance and cost. These were challenges in preventing the spread of COVID-19. Therefore, a need arose to examine the impact of COVID-19 on township dwellers' socio-economic activities and a synopsis of the SDGs Agenda 2030 using remote methods and literature in Limpopo province.

Several empirical studies have already examined the link between COVID-19 and the Sustainable Development Goals (SDGs). While some studies suggest that COVID-19 measures have had some beneficial impacts on the environment such as reducing air pollution, other researchers criticize the impact of COVID-19 on the SDGs, claiming that COVID-19 has destroyed sustained economic growth and the process of globalization, the two major tenets that underpinned the success of the SDGs (Naidoo & Fisher, 2020). Different SDGs were adversely impacted because of the global economy contracting and inequality (Martinoli, 2021).

In sub-Sahara Africa, South Africa was considered to be a hotspot of the pandemic in March 2020 when the first case was recorded. The pandemic struck at a time when the economy of South Africa was already growing at a relatively slow rate. Following the decline of 0.8% in the third quarter of 2019, South Africa's gross domestic product shrank by an additional 1.4% in the fourth quarter, sending the country into a novel technical recession (Statistics SA, 2020). Therefore, the achievement of the SDGs Agenda 2030 is a challenge to her government and population. South Africa, like the rest of the globe, has found itself in a challenging situation, the novel coronavirus has changed our lifestyles and affected every aspect of the community (Muggah & Florida, 2020; Praharaj & Vaidya, 2020). These challenges were highly pronounced among the township population, given that most of these households earn their livelihood from micro and informal businesses. The approach and measure of lockdown used by South Africa's government in response to the pandemic had both direct and indirect impacts on the township communities, with a disproportional impact on micro-businesses, community livelihoods and healthcare (Moonasar et al., 2021; Mkhize, 2020).

In South Africa, the term "township" has no official meaning, but usually refers to a less-developed racially segregated settlement, usually urban, and the residential area also reserved during the apartheid regime for Blacks, Coloureds, and Indians under the Black Communities Development Act (section 33) (Township Renewal Sourcebook, 2009). Township communities are characterised by high population density, high crime levels, low income, poverty, poor community facilities and poor investment, high rate of unemployment, and socio-economic backwardness of apartheid after 26 years of democracy (Bhorat & Mayet, 2012; Chalfin & McCrary, 2017; Brantingham & Brantingham, 2013; Demombynes & Özler, 2005). Adebayo and Musvoto (2010) indicate that an estimated 40% of the urban demographic lives in townships and 20% of the population lives in townships with poor housing infrastructure. The findings by Bhorat & Mayet (2012) reveal that 73% of the population of Johannesburg lives in these locations, and 43% of the population of Johannesburg lives in Soweto. However, townships still indicate the

footpaths of apartheid spatial injustice which expose the population to multiple socio-economic challenges such as infectious diseases and high-income inequality (Biswasa et al., 2020; Hara et al., 2020). The unexpected outbreak of the COVID-19 pandemic in townships offered a chance to examine its impacts on township dwellers' socio-economic activities in Limpopo Province using a remote study approach and a brief discussion of SDGs Agenda 2030.

The pandemic paused Agenda 2030's progress at some point, which seriously calls into question whether the SDGs will be achieved (Shulla et al., 2021). Malnutrition has affected more individuals as a result of global economic turmoil, rising inequality, and disruptions in the food supply chain. In a similar vein, many kids may have lagged after school was closed due to lockdowns because they lacked access to basic resources or technology to attend online classes. Particularly for those with less education, the COVID-19 epidemic is a significant economic shock that has already exacerbated economic insecurity (Martinoli, 2021; Naidoo & Fisher, 2020). Nevertheless, in the global south, several studies focused on the effects of COVID-19 on health issues, Our study focused on the Township community socio-economic in the Limpopo Province of South Africa. Using a case study approach, and a brief overview of how the COVID-19 pandemic affects the Sustainable Development Goals (SDGs) Agenda, 2030.

The paper brings a contribution to the impact of the pandemic on the socio-economic of the Township is limited and coping measures are used by the policymakers and local community to reduce and control the spread of the pandemic. Consequently, contributions to the literature and research in this aspect are a necessity. Further, the study brings together a synopsis analysis of how the new pandemic has negatively impacted the achievement of the Sustainable Development Goals, Agenda 2030.

2. Materials and Methods

2.1 Profile of the Study Area

The study was conducted in Seshego, a township located in Polokwane Local Municipality of the Capricorn District Municipality, Republic of South Africa. The township is geographically located in the northwest of the capital city of Limpopo. The province is in the extreme northern part of South Africa, sharing international boundaries with Mozambique, Botswana, and Zimbabwe. It is located between 22°2′ S and 25°4′ S latitudes and 26°4′ E and 31°9′ E longitudes (Shikwambana, Malaza & Shale, 2021).

2.2 Study design, setting and period.

As per the South African government's official recommendations for minimising direct contact and house confinement to slow and contain the spread of the pandemic, this study used an online snowball sampling approach to obtain data from participants who headed households in Seshego Township between September and October 2020. A technique for non-probability sampling referred to as snowball sampling, was employed to collect data from the target population who were informal businesses and headed households in Seshego township. The remote snowball technique was employed to reach and recruit informal business-headed households who were available online, by email questionnaire or by telephone due to the hard lockdown (levels 4 and 5) imposed by the government to control the spread of the virus.

The chosen method of inquiry reflects the assumptions of the underlying paradigm of the study. The data utilised throughout the study was collected from both primary and secondary sources, with the primary sources giving actual data and the secondary sources serving as the foundation for the literature review to further examine COVID-19 on SDGs. The data of this study was sourced from remote methods through Facebook/WhatsApp, email questionnaires and telephone calls, which were guided by the remote snowball research approach. The study was then localised within the township model to thematically examine the impact of COVID-19 on the households and livelihoods of Seshego township dwellers in Limpopo Province. The study area was chosen because it mirrors the context elements that generally influence the livelihoods of the Black township poor, who were severely impacted by the COVID-19 pandemic in South Africa (Zizzamia, 2020). A semi-structured questionnaire was designed, and Google, Facebook social media and email were used to distribute it to many users of Facebook and email in the township. The questionnaires were translated into the participants' dialect, that is Sesotho sa leboa (Sepedi) by competent and knowledgeable research assistants who were part of the study.

Facebook, WhatsApp, and Messenger are the most online popular social networks among South Africans. The researchers chose relevant messenger groups for email exchange by using individuals who ran informal and small-scale businesses, as well as those who had lost their jobs. Participants were asked to send the questionnaire to any suitable friends on their social network contact lists. The researchers were able to collect 120 questionnaires, but data collection was concluded before the due date in October 2020.100 questionnaires were evaluated, and 20 questionnaires were discarded as invalid because they had been completed incorrectly. The questionnaires were divided into two separate sections. The first section dealt with socio-economic attributes such as gender (male or female), work status and education situation of household members. The second section covered the closure of informal businesses, remote working options and survival measures during COVID-19.

The sample was selected using a systematic sampling procedure since most of the township dwellers within this study area depended on micro and informal businesses as their main source of livelihood. In-depth interviews were conducted with business-headed households to better understand the socio-economic impact of the pandemic on their households' livelihoods because they were the ones who provided for the entire family. Each phone call lasted between 20 and 25 minutes. The questionnaire was sent by email to participants who were expected to reply within a month. The first round of phone interviews was held from 20 to 25 September 2020, and the second round took place from 20 to 30 October 2020. The first round of interviews comprised a series of retrospective questions designed to determine the individuals' lifestyles and conditions before March 2020, and after, when the pandemic struck South Africa. The second phase of interviews concentrated on how households' situations had changed from the pandemic's onset until the time of the interview, including comprehensive questions about their household's capacity to purchase necessities, changes in their own and close family members' employment situations and the educational circumstances of any children who resided in the household. The generation and dissemination of information in socio-economic studies is multiplying, but it is also fragmented and interdisciplinary. For this reason, this study further employed a literature review as an ad hoc research methodology concerning COVID-19 and SDGs. In addition, secondary data was collected from journal articles, and the Coronavirus Rapid Mobile Survey (NIDS-CRAM) dataset during the

lockdown. The study adhered to the ethical guidelines of informed consent from participants before the start of the study to avoid any harm during the data collection process.

2.3 Data analysis

After data was collected via the different social media platforms as mentioned earlier by the competent and knowledgeable research assistants, it was recorded and later transcribed. The transcripts were imported, and the data was analysed using SPSS for organising and analysis purposes. The transcripts provided the specific thematic areas of interest specifically related to the socioeconomic dynamics of the participants during the period of the pandemic.

3. Results and Discussion

3.1 Socio-demographic attributes

The shutdowns have adversely influenced SDGs Agenda, 2030, in the short term, by disrupting distribution networks, manufacturing, production, and marketplaces. For instance, broken agricultural supply chains increased food losses (SDG 12), aggravated food poverty, and decreased agricultural output (SDG 2). In general, the disruption of supply chains and exports/imports has delayed the growth of the South African economy and the creation of decent jobs (SDG 8), as well as the collection of government taxes (SDG 17).

The results reveal that 58% of participants were females and 42% were males. These were mostly single-parent households. This means that most informal street business operators are women. These results are in line with a study conducted in Soweto, South Africa, by Richard (2013) who also found that females were mostly informal business owners. Therefore, businesses run by women operate in a variety of locations, but those that are closely related to retail (such as cutting, sewing, jewellery making, pottery making and food preparation) are generally in residences. Hence, this indicates the negative impact on reducing global inequalities and achieving SDG 10. On the other hand, men-owned businesses are more prevalent in formal settings and concentrate on tasks that need a high level of production, such as plumbing and auto-motor repairs (Mashapure et al., 2021; Budlender et al., 2015). The findings were that women are more likely to work in positions that need interpersonal interaction, such as healthcare, education, hairdressing, domestic work, and retail workers. In the township, women were more likely to be forced to shoulder childcare during the school closures across South Africa. These findings also concur with a study conducted in the United States of America (Wenham, Smith, & Morgan, 2020).

Additionally, in this study, regarding the age factor, 44% of the participants were between the ages of 24 and 34, 30% were between 35 and 44 and 20% were between 45 and 54. Concerning the state of marriage, 10% of those surveyed were widowed, 20% were divorced, 30% were married and 40% were single. The results reveal that 29% of the participants had completed their secondary education, 21% their tertiary education, 10% their advanced education and 12% had just completed lower secondary school. The findings also show that the financial effects and employment

losses brought about by the lockdown caused great difficulty for several households in the study community and raised the prevalence of gender-based violence. In addition to job losses, female members are also likely to experience gender-based violence (SDG 5), which is brought on by the stress that underemployment and unemployment cause at home. Also, exacerbates the gap between the rich and the poor (SDG 10), and forces more people into informal settlements (SDG 11) in the absence of recovery measures to support the poor and vulnerable population. Moseley & Battersby (2020) maintain that due to employee layoffs, the stay-at-home policies caused an unanticipated fall in family expenditure. Since abuse victims were forced to be more reliant on their abusers, the associated stress, and problems, together with being close to the abuser, frequently led to increased violence. Those who were in pain and rage expressed it by assaulting their spouses, other household members and personal lives physically, economically, and psychologically.

3.2 Employment and underemployment status

Several studies revealed that both formal and informal sector employees lost their jobs because of the pandemic's shrinking domestic and international labour markets (UNDP, 2020). While underemployment is a problem in the formal sectors, unemployment affects the informal sectors the most. Increased underemployment and unemployment hinder South Africa's efforts to reduce poverty (SDG 1) and promote economic growth (SDG 8).

The findings of the study reveal that a high percentage of young children depended on social grants from the government. Community members in the township, especially those who are unemployed, decide to have more children as they receive social grants per child (Zizzamia, 2020). The results show that 69% of the community was unemployed and an estimated 42% of the people of the township depended on social grants for their survival and livelihood. The majority of the employed (53%) were employed by the government in low-paying jobs where the average monthly income per household was less than R5 200, 22% worked as domestic workers in the nearby town of Polokwane and only 9% engaged in subsistence farming. The findings indicate that job occupations were likely to be a direct determinant of infection as well as the indirect cause of disease severity and mortality. For instance, occupations including retail, cleaning, teaching, and hawking had a direct impact on the incidence of COVID-19. These findings concur with the study conducted by Koh (2020), who reported occupational risks of COVID-19 infection on SDGs. The major occupations in the township were conducted on the streets and bus stations, which brought high levels of infection risks.

The effects of the pandemic on the inhabitants of Seshego were discernible. During COVID-19, there was a high percentage of unemployment since so many individuals lost their employment status and benefits, making their households vulnerable to poverty. Economic hardship was experienced by many families due to the death of the breadwinner. In certain cases, workers were obliged to temporarily stop working and remain at home without pay. The population in Seshego experienced an enormous shock to their way of life, and the possibility of famine raised serious concerns for people's health and social stability. Due to the loss of jobs, many people were battling to rebuild and recover economically, and a sizable proportion of the population had no food to eat.

The results show that many employees had to be retrenched since their companies were unable to function because of the COVID-19 nationwide lockdown. Particularly during level 5 of the nationwide lockdown, several employees were forced to borrow money from a loan shark to pay for groceries for their families. The community was placed under financial pressure because there was no way for them to make restitution in this situation. The COVID-19 pandemic, according to the Global Investment Report (UNDP, 2020), caused job losses and put thousands of community livelihoods in jeopardy. It led to retrenchments which also affected the Seshego people. This demonstrates how the township economy was impacted by COVID-19, causing economic instability, and disrupting society's regular operations.

3.3 Closure of business sectors

The self-employed and informal traders such as street sellers and hairdressers were compelled to shut down their businesses due to government regulations designed to control and reduce the spread of COVID-19. The revenue and working hours of independent businesspeople in the township were reduced. Some of these individuals struggled since they were ineligible for unemployment benefits such as the Social Relief Grant and UIF. Many participants claimed that the COVID-19 pandemic had a detrimental effect on their businesses as their businesses were closed for some months. Because many of them were street vendors, they were not permitted to conduct business activities in the township or the nearby town. These findings confirm research conducted by Dzawanda, Matsa & Nicolau (2021), who report that the lockdown strategies used to combat COVID-19 in Gweru had an unfavourable effect on the informal economy. They were required to stay indoors and abide by the lockdown restrictions, specifically during level 5. Having a job was challenging because their livelihood depended solely on their business. The results of this study are in line with those of Zizzamia (2020), who examined whether employment is a panacea for poverty in South Africa.

3.4 Closure of learning institutions

The South African government in other to combat and control the spread of the pandemic introduced the measure of closure or limited the opening of various learning institutions (primary, secondary schools and higher institutions of learning) including universities and facilities, public transportation (inter-province), government offices, and international borders.

The coronavirus pandemic was not only a short-term shock to earnings and livelihood but had long-term effects on children's growth and future chances for personal skills development. All institutions of both lower and higher learning in the township were placed on lockdown as part of the government's COVID-19 policy to protect lives. Hence, due to restrictions on activities related to instruction, training, and periodical exams (SDG 4) access to education was denied. Even though face-to-face instruction l resumed after the pandemic, these obstacles to educational progress have hindered the country’s economic growth and unemployment over the long run (SDG 8). Additionally, keeping children at home increased their vulnerability to abuse and disrupted their social networks (SDG 16) Also, it was reported that households decreased food consumption during the lockdown period as a result of an increase in household members (SDG 2). Virtual classrooms were being used more frequently as an alternate method of instruction and learning to mitigate the effects of educational institution closures resulting in a digital divide

between male and female household members (SDG 5), rich and poor people (SDG 10), and urban and rural locations (SDG 11). Additionally, due to the institution's closure the challenge that school children encountered was online learning as they had little knowledge of the online systems and poor internet connection. This supports the study by Udmale et al. (2021), who found that poor internet connection was the major challenge with online learning. The closure of schools affected parents economically and socially as they had to scramble to provide food for their children while they were restricted indoors during the lockdown. As a strategy to adapt to this situation, home classes were made possible by private schools by giving children and parents assignments, but it was difficult because some parents were illiterate, and some had little time for their children's studies (Dingel & Neiman, 2020).

Further, the findings reveal that the lockdown affected higher institution students. This was simply because there was a change from contact classes to online lessons. Online learning or e-learning was established as a method of instruction and learning, and it presented some difficulties for the students in the study area. To access the information and materials used in online learning, equipment and electricity were required. School children lacked fundamental digital literacy and access to technological tools (laptops and computers), as well as network connectivity. A certain level of technical proficiency was required to participate in virtual classes, including the ability to sign in, contribute to discussions, turn in assignments, interact with teachers, and comprehend online communication. This confirms the findings of a survey conducted by Saha et al. (2020). The youth in the study area lacked sophisticated technology; therefore, they were caught off guard by the move to online learning. Some students found it difficult to concentrate via e-learning and to complete their assignments because they lived in congested homes, making it impossible for them to focus on their online courses. The findings show that Blackboard, Zoom, Moodle and other platforms were used by the majority of students enrolled in online courses. They complained that no one at home could help them because they did not know how to log in to the site or submit their assignments. These findings support those of Zizzamia (2020) who reports that online or e-learning was a major challenge to students during the “hard” lockdown.

3.5 Remote working strategy and closure of public facilities

One of the major government policies to control the pandemic was the remote working approach. The study reveals that several businesses, both formal and informal, adopted the remote working approach because of the lockdown and accompanying constraints, including social isolation and quarantine. People of Seshego who were employed were forced to use this strategy to safeguard themselves against COVID-19.

The limited hours that courts were operating also made it difficult for cases of, say, gender violence against women (SDGs 5 and 16) to be reported. Along with harming industrial innovation, that is SDG 9 and increasing inequality (SDG 10), the closure of informal and formal business sectors also caused unemployment and underemployment (SDG 8). Additionally, the restricted opening of government offices led to ineffective law enforcement. Travel restrictions and border closures hindered international cooperation, capacity-building efforts, and trade (SDG 17). Dingel & Neiman (2020) describe working from home as an employment situation in which an employee performs tasks related to their job while staying at home and applying computer technology. The idea was that working remotely would reduce the pandemic's negative effects on output and employment while also slowing its spread. It is important to keep in mind that the success of conducting business from home in reducing the damaging

effects of social distance rules on the economy depended on more than just whether it was feasible; it also depended on how much more productive it was than working in a traditional office. The findings reveal that some workers encountered network coverage issues and the difficulty of power interruptions brought on by damaged energy lines in the study area. However, for some employees, it was advantageous because they were given the chance to spend time with and tend to their families (Bassier et al., 2021).

About 40% of participants stated that they liked working from home since it gave them a lot of time to spend with their families. 55% of participants claimed that the remote working strategy helped them save money since they did not have to pay for transportation to the workplace and they could also handle their household duties. Working from home also presented many difficulties because load shedding was a huge communal crisis. These findings are like those in a study conducted by Moonasar et al. (2021). Participants' replies make it evident that many employees in Seshego experienced difficulties with the remote working method which many organisations embraced. Some of these difficulties were connectivity problems, power failure, unfavourable work environments and domestic tasks. The findings concur with Moseley & Battersby (2020), who argue that the drawback of working from home is a loss of productivity brought on by the distraction and comfort of taking unneeded pauses while working.

4. Impact of COVID-19 on the Achievements of SDGs

The pandemic was an international crisis that radically changed the SDGs' fundamental emphasis, bringing to light new realities and ways of living that we had not previously considered. With high human and financial costs, lockdown measures harmed migration and mobility (Sirkeci & Murat, 2020). It was the first time in the past three decades, that poverty is rising, decreasing economic growth, and increasing inequalities (SDG 1; SDG 8 and SDG 10) as the results of the outbreak, which caused a global financial crisis of enormous magnitude with enhanced effects on emerging economies. All facets of the financial system were affected, including investments, employment, and jobs, with major and widespread economic repercussions and digitization of education is mandated. (Ju, 2020). Without immediately addressing the global health challenges, which have a similar potential to seriously undermine the institutions that allow mankind and the earth to exist and thrive, progress made to address the 17 SDGs may suffer major setbacks, as the pandemic has revealed. This study further analyses the synopsis impact on the achievement of SDG 8 (decent work and economic growth) and 10 (reduce inequalities).

Before the year 2020, global south countries were among those with stable economic growth. SDG 8 goals were to promote economic development and decent employment for all, the pandemic brought about the deepest global recession in the last three decades, reducing global GDP by 3.1% in 2020. Additionally, several studies stated that global Gross Domestic Product (GDP) fell by 2%, with lows of 2.5% for less-developed nations due to the COVID-19 crisis. Africa has been hard hit by the pandemic, with the African Development Bank (2021) estimating that economic growth in the continent shrank by 2.1% in 2020. Several governments and private institutions have introduced measures to stop the spread of COVID-19, such as Lockdowns, quarantines, social distancing, travel bans both international and national, wearing of face masks, and shutdowns of non-essential activities. Hence, the implementation of SDG 8 to its full capacity by 2030 will be extremely difficult because of the drastic slowdown in economic growth, social instabilities in African economies, and bad working conditions brought on by these policies.

However, the findings indicated that during level 5 lockdown business sectors were severely negatively affected. For example, businesses in Seshego township include taxi drivers, spaza shop operators, street petty traders and hairdressers. Hence, due to company closures to comply with government restrictions, all underemployment, such as street vendors, whose livelihoods depended on being in public locations to sell their goods, were severely impacted by the lockdown. These township dwellers had to develop strategies for surviving and changing to the new normal during the lockdown in response to the disruptions caused by the pandemic and enforced confinement. The findings revealed that one of the strategies to survive was a small-scale vegetable garden (SDG 2) used to feed the household and sell some to the surrounding community. This confirms the claim made by Wade (2020) that subsistence farming increased during the COVID-19 outbreak. Additionally, as shops were still in lockdown, they were able to survive by subsistence farming. Others in the community managed to make ends meet by operating various businesses in compliance with the new "stay-at-home" rule. The study's findings show that many residents who only relied on the informal business sector for their livelihood suffered greatly from the COVID-19 outbreak and found it difficult to support their families.

Additionally, the outbreak of COVID-19 will continue to have a major adverse impact on the global achievement of SDG 10 by 2030. Hence, this has resulted in inequality between global South and North nations and has gotten worse because COVID-19 disrupted economic growth, social services, and public health systems, which resulted in the loss of lives, livelihoods, and well-being for millions of people throughout the world (Africa Renewal, 2021). Due to the global pandemic and its containment measures, the populations have experienced heightened risks of infection, mortality, income loss, hunger, violence, and discrimination. According to the findings, the pandemic likely caused 30 million additional individuals in sub-Saharan Africa to live in extreme poverty in 2020 (AU, et al., 2022). Additionally, COVID-19 has decreased tax income, remittances, official development assistance, and foreign direct investment, limiting the ability to balance the budget and sustain debt. For millions of workers and business owners, these obstacles have decreased their access to social protection and economic opportunity (Africa Renewal 2021). These are some of the ways that COVID-19 affects SDG 10 and SDG 8. However, there are also chances to deal with these problems through recovery initiatives that can invest in resilient and inclusive institutions for governance, peace, energy, education, social protection, and health care.

5. Conclusions and Implications of the SDGs

The pandemic is considered one of the deadliest viruses in the last 100 years, Human life was radically altered by its destructive effects, which forced people to stay at home. However, the old practices of self-isolation, lockdown, and home confinement were used at first because there were no effective ways to stop this COVID-19 spread. The complete shutdown of major economic growth sectors led to a downturn that resulted in job losses, and financial instability, and most likely ushered in a short-term recession. Hence, the lockdown significantly altered the social life of the Township dwellers. This commitment is being affected and the general strategy toward appropriateness is being undermined by COVID-19's unexpected situation, which is affecting the trajectory of development and delaying the path toward reaching the 17 SDGs Agenda, 2030.

Future research may profit from the major discoveries and learnings made during the study's methodological approach. Particularly, the remote data collection technique used in the COVID environment might necessitate the adaptation of current research techniques. Our method can be used to evaluate other natural disasters as a decision-supporting tool and a tool for predicting results.

The findings indicate that the unexpected outbreak of the pandemic increased the participants' economic vulnerability which existed before the crisis. This vulnerability was located at the point where the following factors intersected: the main threat to livelihoods was the decline in wages and employment prospects; the increased exposure to current and future economic shocks indicates a deepening of underlying economic fragility; and the pandemic caused a widespread sense of loss of personal control and agency, contributing to the rise in psychological distress. 55% of participants stated that the remote working approach was profitable as they saved money to buy groceries.

Additionally, staying at or working from home during the closure of schools during COVID-19, and the difficulties that township youth and social media users faced with online learning may have detrimental long-term effects on the development of human capital and, consequently, on earnings, escalating existing inequalities and limiting social upward mobility. The virus may have a long-lasting impact on the poverty level in townships through its effects on wellness, schooling, and job opportunities, as well as the potential ramifications of rising crime rates.

Considering the COVID-19 implications, "everything we do during and after this crisis must be with a strong focus on building more equal and inclusive societies that are more resilient in the face of pandemics, climate change, and the many other challenges we face" (United Nations, 2020). SDGs represent a strong, effective tool for achieving this. The COVID-19 pandemic has the potential to be a turning point for advancement as we know it, one that safeguards both the present and the next generation if the correct steps are taken.

The case study in South Africa gives some specific ideas for how to recover from the pandemic and achieve the SDGs Agenda 2030. A transformational socio-economic recovery strategy must therefore be developed, put into action, and monitored through collaboration between the national, provincial, and municipal governments. Special packages for underprivileged, vulnerable, and disadvantaged groups, as well as inequalities, should be included in this strategy, based on a gender-sensitive approach, with additional assistance provided to business sectors and societies that have been severely damaged. Hence, South Africa needs to tap into national and international resources, expertise, and skills in addition to favourable conditions such as good governance, transparency, and accountability to implement SDGs Agenda 2030. The successful implementation of the SDGs will primarily depend on South Africa's political stability given the current political climate. Politics should at the very least not conflict with the nation's goals for sustainable development. The COVID-19 pandemic's effects could be seen in the context of green recovery. It appears that nations organize their responses following the SDGs. In response to the pandemic, there was a greater degree of policy coherence, which was evident in improved coordination and inter-ministerial engagement at the national level as well as stronger cooperation at the United Nations Commission.

Further, COVID-19 provides a window with a platform to learn about and create new governance structures and systems based on scientific analysis and intended to promote evidence-based policy. Additionally, if COVID

demonstrated that more international cooperation was required to address the problem since national-based responses were inadequate to deal with the pandemic's evolution, it is recommended to strengthen the intergovernmental agenda to deal with worldwide crises. This pandemic has taught us many valuable lessons that will make us better prepared to handle any future crises. Political effects of the coronavirus can be seen when self-isolation and lockdown lead to a decline in export and import rates. It is challenging to carry out tasks intended to turn the economic wheel in the current scenario (SDG 8). In addition, there has been a major change in the strategies and policies about economic policies (SDG 8). All educational institutions offer the expert assistance and guidance that is required to improve awareness of crisis management. This will assist students in being informed, safeguarding themselves, and avoiding any risks or injury brought on by their carelessness.

However, there are certain limitations to this study. Due to the small number of participants included in this study, future studies could potentially involve many stakeholders and policymakers. Additionally, the synopsis addresses SDGs without including the indicators and targets and the lack of expertise in the qualitative analysis given the early stage of research on the COVID-19 pandemic's effects on the SDGs and potentially associated effects (this sentence should either be removed or rearranged). More limitations were explored; non-response bias is still a key limitation of online questionnaires. To reduce the impact of this bias, the questionnaire avoided sensitive issues in favour of basic multiple-choice questions. However, we were unable to ensure an accurate representation of the research population as we assumed that everyone who participated and used social media/the internet could read and write.

Conflict of interest

No conflict of interest in publishing this article

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Data availability

The data used in this research is available upon request.

6. References

Adebayo, A. & Musvoto, G. (2010). Integration and transformation of post-apartheid South African city fabric. In M. Schrenk, V. Popovich, & P. Zeile. (Eds.). Cities for everyone: Liveable, healthy, and prosperous. Conference proceedings of the Real Corp, 1127-1131. Vienna: Real Corp.

African Development Bank (2021). Weekly Data Flash on COVID-19 in Africa1: The situation as of Sunday. Statistics Department (ECST), African Development Bank, Abidjan

Ambler, K., Herskowitz, S., Maredia, M.K. & Mockshell, J. (2020). COVID-19 in rural Malawi: perceived risks and economic impacts. Project note Washington, DC, International Food Policy Reg

AU/UNECA/ /AfDB/ UNDP, (2022). Africa Sustainable Development Report. https://www.undp.org/africa/publications/2022-africa-sustainable-development-report (accessed 29 July 2023)

Bassier, I., Budlender, J., Zizzamia, R., Leibbrandt, M. & Ranchhod, V. (2021). 'Locked down and locked out: Repurposing Social Assistance as Emergency Relief to Informal Workers'. *World Development*, *139*, 105271. https://doi.org/10.1016/j.worlddev.2020.105271

Bhorat, H. & Mayet, N. (2012). Employment outcomes and returns to earnings in post-apartheid South Africa. Development Policy Research Unit. Cape Town: DPRU, University of Cape Town.

Biswasa, A., Bhattacharjee, U., Chakrabarti, A., Tewaria, D., Banu, H., & Dutta, S. (2020). The emergence of Novel Coronavirus and COVID-19: Whether to stay or die out? Critical Reviews in Microbiology, 46(2), 182-193. doi.org/10.1080/1040841X.2020.1739001

Boyacı-Gündüz, C.P., Ibrahim, S.A., Wei, O.C. & Galanakis, C.M. (2021). Transformation of the Food Sector: Security and Resilience during the COVID-19 Pandemic. Foods; 10, 497.

Brantingham, P. & Brantingham, P. (2013). Crime Pattern Theory, in Environmental Criminology and Crime Analysis. Ed. Wortley, R. & Mazerolle, L. Routledge, 78-91.

Budlender, J., Leibbrandt, M., & Woolard, I. (2015). South African poverty lines: A review and two new money-metric thresholds. Southern Africa Labour and Development Research Unit, Working Paper No 151. Cape Town: SALDRU, University of Cape Town.

Castillo, R. & Amoah, P.A. (2020). Africans in post-COVID-19 pandemic China: is there a future for China's 'new minority'? Asian Ethn.;21(4):560–565. doi 10.1080/14631369.2020.1773760.

Chalfin, A. & McCrary, J. (2017). Criminal Deterrence: A Review of the Literature. Journal of Economic Literature, 55(1), 5-48.

Coccia, M. (2020). An index to quantify the environmental risk of exposure to future epidemics of COVID-19 and similar viral agents: theory and practice. Environ. Res. 2020;110155

Connolly C., Ali S.H. & Keil R. (2020). On the relationships between COVID-19 and extended urbanization. Dial. Hum. Geogr;10(2):213–216.

Demombynes, G. & Özler, B. (2005). Crime and local inequality in South Africa. Journal of Development Economics, 76, 265-292.

Deshpande, A. (2020). The Covid-19 pandemic and lockdown: First order effects on gender gaps in employment and domestic time use in India, Global Labour Organisation Discussion Paper No. 607. https://www.econstor.eu/bitstream/10419/222416/1/GLO-DP-0607.pdf (Accessed 24 May. 2023)

Dingel, J. I..,& B. Neiman, B. (2020). "How Many Jobs Can Be Done at Home?" Journal of Public Economics 189: 104235. doi:10.1016/j.jpubeco.2020.104235.

Dzawanda, B., Matsa, M. Nicolau, M.D. (2021). Poverty on the rise: The impact of the COVID-19 lockdown on the informal sector of Gweru, Zimbabwe. International Social Science Journal, Wiley-Blackwell II Publishing Ltd, 10.1111/issj.12285

Hara, M., Ncube, B., & Sibanda, D. (2020. Water and sanitation in the face of Covid-19 in Cape Town's townships and informal settlements. Institute for Poverty, Land and Agrarian Studies. https://www.plaas.org.za/water-and-sanitation-in-the-face-of-covid-19-in-capetowns-townships-and-informal-settlements/ (Accessed 22 April 2023)

Ju, J. (2020). What will COVID-19 do to the sustainable development goals? UN Dispatch. https://www.undispatch.com/what-will-COVID-19-do-to-the-sustainable-development-goals/. (Accessed 25 July 2023).

Kihato, C.W. & Landau, L.B. (2020). Coercion or the social contract? COVID-19 and spatial (in) justice in African cities. City and Soc; 32(1)

Koh, D. (2020). Occupational risks for COVID-19 infection. Occup Med; **70**:3–5. doi_10.1093/occmed/kqaa036. (Accessed on the 20 June 2023)

Lu, H., Stratton, C.W., Tang, Y.-W. (2020). An outbreak of pneumonia of unknown aetiology in Wuhan, China: The mystery and the miracle. J. Med. Virol;92(4):401–402.

Naidoo, R, & Fisher, B (2020). Sustainable development goals: pandemic reset. Nature, 583:198–201. https://www.nature.com/articles/d41586-020-01999-x.

Martinoli, S. (2021) 2030 Agenda and Business Strategies*:* The Sustainable Development Goals as a Compass towards a Common Direction; FrancoAngeli: Milan, Italy, pp. 129–152

Mashapure, R., et al. (2021) Socio-economic implications of COVID-19 pandemic to women entrepreneurs: A case of the informal sector in Zimbabwe Business Management and Strategy, 12 (1), 1-15

Mkhize, Z. Minister Zweli Mkhize (2020). reports the first case of coronavirus COVID-19 | South African government, South African government media statement, 2020. Available: https://www.gov.za/speeches/health-reports-first-case-covid-19-coronavirus-5-mar-2020-0000 [Accessed 2 May 2023].

Moonasar, D., Pillay, A., Leonard, E*, et al* (2021). COVID-19: lessons and experiences from South Africa's first surge BMJ Global Health*;* **6:**004393.

Moseley, W. & Battersby, J., 2020, 'The vulnerability and resilience of African food systems, food security, and nutrition in the context of the COVID-19 pandemic', African Studies Review 63(3), 449–461. https://doi.org/10.1017/asr.2020.72.

Muggah, R. & Florida, R. (2020). Megacity slums are incubators of disease – but the coronavirus response isn't helping the billion people who live in them. The Conversation. Retrieved from https://theconversation.com/megacity-slums-areincubators-of-disease-but-coronavirus-response-isnt-helping-the-billion-peoplewho-live-in-them-138092. (Accessed 25 April 2023)

Naidoo, R.; Fisher, B. (2020). Reset sustainable development goals for a pandemic world. *Nature*, *583*, 198–201

Pradhan, P.; Subedi, D.R.; Khatiwada, D.; Joshi, K.K.; Kafle, S.; Chhetri, R.P.; Dhakal, S.; Gautam, A.P.; Khatiwada, P.P.; & Mainaly, J (2021). The COVID-19 pandemic not only poses challenges but also opens opportunities for sustainable transformation. *Earth's Future*, *9*, e2021EF001996

Praharaj, S., & Vaidya, H. (2020). The urban dimension of COVID-19: COVID outbreak and lessons for future cities. National Institute of Urban Affairs. DOI: 10.13140/RG.2.2.31417.60004

Qian, Y. & Fan, W. (2020). Research in Social Stratification and Mobility. JAI Press; 2020. Who loses income during the COVID-19 outbreak? Evidence from China.

Richard, G. (2013) Gendered Spaces of Informal Entrepreneurship in Soweto, South Africa, Urban Geography, 34:1, 86-108,

Saha, J., Barman, B. & Chouhan, P. (2020). Lockdown for COVID-19 and its impact on community mobility in India: an analysis of the COVID-19 Community Mobility Reports. Child Youth Serv. Rev. 2020; 116:105160.

Shikwambana, S., Malaza, N. & Shale, K. (2021). Impacts of Rainfall and Temperature Changes on Smallholder Agriculture in the Limpopo Province, South Africa. *Water*, *13*, 2872.

Shulla, K.; Voigt, B.-F.; Cibian, S.; Scandone, G.; Martinez, E.; Nelkovski, F.; Salehi, P. (2021). Effects of COVID-19 on the Sustainable Development Goals (SDGs). Discov. Sustain, 2, 15.

Sirkeci, I, Murat, Y. (2020). Coronavirus and migration: analysis of human mobility and the spread of COVID-19. Migr Lett. 17(2):379–98

Statistics South Africa. (2020). Mid-year population estimates | Statistics South Africa, Department of Statistics South Africa. Available: http://www.statssa.gov.za/?p=13453 [Accessed 21 May 023].

Tian, H., Liu, Y., Li, Y., Wu, C.H., Chen, B., Kraemer, M.U.G., Li, B., Cai, J., Xu, B., Yang, Q., Wang, B., Yang, P., Cui, Y., Song, Y., Zheng, P., Wang, Q., Bjornstad, O.N., Yang R., Grenfell, B.T., Pybus O.G., & Dye, C. (2020). An investigation of transmission control measures during the first 50 days of the COVID-19 epidemic in China. Science, 368(6491):638–642.

Township Renewal Sourcebook. (2009). Introducing the township renewal challenge. South African Cities Network. Retrieved from http://www.urbanlandmark.org.za/ downloads/sourcebook_mod01.pdf (Accessed 27 April 2023)

Udmale, P., Pal, I. & Szabo, S., Pramanik, M., Large, A. (2020). Global food security in the context of COVID-19: A scenario-based exploratory analysis. Prog. Disaster Sci. 7, 100120.

United Nations-UN (2020). Transforming our world: the 2030 Agenda for Sustainable Development. A/RES/70/1. https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E. (Accessed 16 August 2023)

UNDP (2020). Rapid assessment of the socio-economic impact of COVID-19 in Nepal. United Nations Development Program.

Van Bodegom, A. & Koopmanschap, E., (2020). The COVID-19 Pandemic and Climate Change Adaptation; Wageningen Centre for Development Innovation: Wageningen, The Netherlands, 1–24.

Wade, L. (2020). An unequal blow. Science, 368(6492):700–703.

Wenham, C., Smith, J. & Morgan, R.. (2020). COVID-19 the gendered impacts of the outbreak. Lancet; 395:846–8. doi: 10.1016/S0140-6736(20)30526-2

WHO (2020). Impact of COVID-19 on People's Livelihoods, their Health and Our Food Systems. 2020. Available online: https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people\T1\textquoterights-livelihoods-their-health-and-our-food-systems (accessed on 20 July 2023).

Zhou, F., Yu, T., Du, R., et al. (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. Lancet; 395:1054–62. doi: 10.1016/S0140-6736(20)30566-3

Zizzamia, R. (2020). 'Is Employment a Panacea for Poverty? A Mixed-Methods Investigation of Employment Decisions in South Africa'. *World Development*, *130*, 104938. https://doi.org/10.1016/j.worlddev.2020.104938.