Analysis of determinants of poverty in South Africa in the wake of Covid-19 pandemic

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ABSTRACT

The primary objective of this research paper was to investigate the determinants of poverty in South Africa in the aftermath of the Covid-19 pandemic. To accomplish this, the study employed data from STATS SA collected in 2021, calculating the poverty status of households based on the national poverty line and generating a binary variable comprising two categories: poor and non-poor. The research employed descriptive, cross-tabulation analysis and binary logistic regression models to ascertain the associations between selected independent variables (gender, age, household size, population group income, and province) and the dependent variable (poverty status). The findings demonstrated that 62% of the households surveyed were living below the upper-bound poverty line, with 49% classified as poor based on the lower-bound poverty line. Furthermore, the regression analysis revealed that gender, age, income and income were significant predictors of poverty status, with females, younger household heads, and those with lower incomes being more likely to be poor. The paper concludes with a set of recommendations for the South African government to mitigate poverty, such as investing in education and skills development, promoting job creation, expanding social protection programs, and enhancing access to fundamental services such as water and sanitation.

Introduction

The restrictions on movement of people and economic activity necessitated by the need to mitigate the health impacts of Covid-19 led to a substantial decline in economic growth rates in many economies across the world. The International Monetary Fund (World Economic Outlook, 2020) projected a contraction of 4.9 percent in world economic growth for the year 2020. For instance, world trade was projected to fall by 13 to 32 percent in 2020 due to restrictions on the movement of goods and people (Lal et. al.; 2020). Literature abounds with the positive relationship that exists between economic growth and poverty reduction (Akanbi, 2015). As could be expected, the decline in overall economic growth will have severe impact on emerging and developing economies of the world. Furthermore, Akanbi (2015) shows that it is not always the case that economic growth will be accompanied by a reduction in poverty levels due to structural and institutional constraints that often exist in developing countries. ISS (2022) address the issue of poverty in Africa, indicated that before the Covid-19 pandemic, Africa had poverty levels of above 34% meaning that on average 34% of the total population in Africa were living below the $1.90 threshold. Ibid further reported that since 1981 poverty levels in Africa surpassed the world average poverty levels, the mostly affected population are those from sub-Saharan Africa. Reports also indicate that Sub-Saharan Africa has the highest concentration of poverty in Africa, with the Central region having the highest rate of extreme poverty at 54.8%, followed by Southern Africa at 45.1%. In Western and Eastern Africa, the rates are 36.8% and 33.8%, respectively. (Zorobabel et al, 2017; ISS, 2022 World Bank)

The United Nations approved the Sustainable Development Goals (SDGs) in 2015 as a framework for global peace and prosperity, which consist of 17 SDGs and 169 targets aimed at eradicating poverty, improving health, education, reducing inequality and promoting economic growth (United Nations, 2018). All member nations agreed to achieve these goals by 2030. As per ibid reports...
Africa is far from attaining SDG 1 of eliminating poverty. The Covid-19 pandemic brought its own challenges which meant that the achievement of Sustainable Development Goals (SDGs) especially with regards to ending poverty by 2030 were put under serious threat.

To curb the problem many countries across the world implemented measures to alleviate the economic impact of the pandemic on their citizens. As with many other countries, South Africa was not spared the serious economic effects of Covid-19. The interventions undertaken by governments came mainly in the form of increased government expenditure. Governments mainly increased their spending as a form of intervention. For instance, in South Africa, a tier five lockdown was implemented at the beginning of the pandemic, and many economists recommended increased government spending as a means of addressing the pandemic’s effects. However, Burger and Calitz (2020) warned against the dangers of increased government expenditure. Increasing government expenditure often tend to have short-term benefits only, while it has a negative impact on economic growth in the long run. This situation can be exacerbated by the fact that projected government earnings for the 2020-2021 budget were expected to fall from R1, 398 trillion to a revised figure of R1, 099 trillion (Francis et. al, 2020) while the South African Gross Domestic Product (GDP) was projected to contract by 7.2 percent in 2020 because of the economic restrictions (Burger and Calitz, 2020).

The primary objective of this study is to evaluate the impact of Covid-19 on poverty rates in South Africa and to scrutinize the efficacy of the measures implemented by the South African government to alleviate the repercussions of the pandemic. The paper employs the absolute poverty line as the primary measure for analyzing poverty levels, as it is widely acknowledged as the most fitting approach to studying poverty in developing countries, where the majority of the population earns below a predefined income threshold (Fransman and Yu, 2019).

**Literature Review**

Poverty means different things to different people, as a result the definition of poverty is very multifaceted. Poverty can either be absolute or relative. Absolute poverty emphasizes the lack of basic needs such as food, safe drinking water, proper sanitation, shelter, and health as the source of poverty and does not unlike relative poverty take the social context of the affected people into account (Spicker, 2007, Todaro, 2011). The lack of necessities is often tied to the household’s inability to attain a certain predetermined level of income referred to as the poverty line. Poverty lines are used to measure the cost of basic needs as already outlined above. The headcount index measures the proportion of a country’s people who fall below this preset threshold of income and is often expressed as $H/N$.

Where $H = \text{the fraction of the population below the poverty line}$ and $N = \text{the total number of households}$.

Relative poverty on the other hand is measured in relation to the average resources available in a particular society, such that households or individuals will be regarded as poor if their income falls below a predetermined societal mean income (Schuler, 2008). The relative concept of poverty implies lack of capabilities for individuals or households to fully participate in society, this can be in the form of lack of access to basic services such as health care, housing, education, safe drinking water and sanitation. This basically mean that individuals or households find themselves being fully or partially excluded from participating in the society in which they live (Buheji et al., 2020).

Although there has relatively been a decrease in poverty levels in developing countries over the past two decades, levels of inequality have remained stubbornly high. For most developing countries poverty happens to be structural because of factors such as inequality that arises from various forms of discrimination such as race and gender (Spicker, 2007). The best know measure of inequality is the Gini-coefficient which is an aggregate numerical measure of income inequality ranging from zero to one, where zero represent perfect equality and one represents perfect inequality. According to this measure the higher the value of the coefficient the higher the inequality of income distribution and vice-versa. A coefficient of more than .50 is regarded a highly unequal while a coefficient of less than .35 will be regarded as relatively equal (Todaro, 2011). As could be expected, developing countries tend to have higher coefficients than their developed counterparts. South Africa is regarded as one of the most unequal societies in the world with a Gini coefficient that is persistently in the ranges of .6 and above, implying that while there have been sporadically successes in the elimination of poverty, levels of inequality have remained very high (Francis and Webster, 2019).

Various studies have shown that a positive correlation exists between economic growth and poverty alleviation. These studies usually associate poverty with high levels of unemployment, therefore a decline in economic growth and consequently employment levels will lead to an increase in poverty. Using province level data in Kazakhstan, a study by Agrawal (2007) found that in provinces where economic growth was higher, the levels of poverty were found to be significantly lower. Another provincial level study conducted by Niyimbanira (2017) in South Africa supports the notion of a positive correlation between economic growth and poverty alleviation. Niyimbanira (2017) found that economic growth reduces poverty levels but had no impact on levels of inequality. Bhorat and Van der Westhuizen (2008) found that in the first decade of democracy in South Africa economic growth did in fact had a very strong impact on reducing poverty levels. Unemployment together with other exogenous factors such as very high levels of inflation are considered to exacerbate poverty levels. Excessive inflation in Kazakhstan in the 1990s eroded the pensions of the elderly pushing them deeper into poverty (Agrawal, 2007). Some studies have however found that poverty levels can remain persistently high despite
The emergence of Covid-19 in late 2019 brought about dire economic impacts for many economies across the globe. Covid-19 began by affecting the supply side of the economy as workers became infected and production and productivity dwindled as a result thereof. The supply shocks that resulted from covid-19 interventions were inevitably followed by demand shocks. The global economic contraction that followed in the aftermath of the covid-19 pandemic was even far worse than that experienced in the 2008/9 financial crisis (Suryahadi et. al., 2020). For developing countries poverty is measured based on household consumption expenditure as data on income is hard to come by or largely unreliable due to the structure of many of the developing economies e.g., high prevalence of the informal sector where economic activities largely go unrecorded. In a study on the impact of covid-19 in Indonesia Suryahadi et.al, 2020 found that a negative correlation that exists between household expenditure and Covid-19 tended to be more pronounced that it had ever been during previous economic shocks such as the 2008/9 financial crisis and the Asian crisis of 2005/6. As already mentioned, high levels of inflation tend to exacerbate poverty. Buheji et. al (2020) indicated that the global economy was expected to decline by 12.5% in 2020, the contraction of the global economy will be accompanied by rising prices of food and other essentials thereby entrenching poorer nations of the world deeper into poverty. A survey study conducted by Krumer-Nevo, (2020) on the impact of Covid-19 on poverty in Israel found that the poor were more negatively affected by Covid-19 than the non-poor. The questionnaire covered various aspects such as impact on employment and the need for social relief, mental distress, effect of Covid-19 on life and the coping strategies that the participants adopted to deal with the pandemic. According to the study the poor were found to have suffered more in terms of employment and other income earning opportunities than the non-poor and that the poor also benefited more from social relief. Non-poor households tended to cope much better with the impacts of Covid-19 than the poor.

As the world’s poorest continent, Africa is expected to feel the economic impact of Covid-19 more intensely than any other part of the world. African governments are already struggling with the provision of basic services such as health care, education, housing etc. (Buheji, et al., 2020). Using the international poverty line of $1.90 a day and applying different scenarios, Nonvide (2020) found that the impact of Covid-19 in the Southern African region in the extreme scenario would increase the poverty incidence by more than 13 percentage points which implied that the number of poor people in the sub-region will increase by more than 27 million. Jain et al., 2020 conducted a study on the impact of poverty in South Africa. Their study found that the poor and female were disproportionately affected by the economic impacts of Covid-19. The study observed a 40% decline in employment and that approximately one out of every five individuals to one out of every three individuals fell into poverty when using the South African upper-bound poverty line and the international poverty line respectively. The dependency ratios for Sub-Saharan African countries - including South Africa - tend to be relatively high which implies that the job-losses tend to affect even more people due to the high number of people that the working people must care for (Pezzulo et al., 2017). The next section discusses the methodology and further the results of the paper.

Methodology

The main aim of this investigation is to evaluate the poverty condition of households in South Africa after the Covid-19 pandemic, utilizing the 2021 General Household Survey data collected by STATS SA. The survey comprises a nationally representative sample that encompasses all provinces of the country and features diverse inquiries on essential livelihoods. After data cleaning, several relevant variables were chosen for the analysis.

Measuring Poverty Status

To measure the poverty status of households the study used the national poverty line of 2021 employing both the upper bound and lower bound poverty lines (STATS SA 2021). After the data was entered into Excel, a model was constructed to compute the poverty line. Subsequently, a binary variable called “poverty status” was generated, consisting of two categories: 1 for poor and 0 for non-poor. The variable was then adopted as the primary dependent variable for subsequent analyses.

Model Specification

To analyse the data and to achieve the main objective, the study used statistical package for social sciences (SPSS) as a measuring tool to analyse the poverty status of the households in the study. Poverty status was used as a dependent variable and age, gender, province, total income, population group and household size as the testing variables. The study further used descriptive analysis and cross tabulation among others to properly profile the nature of individuals as to whether the demographics have an impact on their poverty status.

Regression Model Specification

The regression model was employed to investigate on the Household level factors that are significant in determining the probability of whether a household is poor or not poor. The regression model was estimated as follows;
The model uses poverty status as a dependent variable whereby poverty status is measured as a categorical variable with two categories namely poor and not poor. The study further employed the following as the independent variables, Gender (male or female), age, household size and income. A binary logistic regression was specified as follows.

\[ P_{St} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n + \epsilon \]

(1)

The regression therefore will have all the variables of interest included as follows.

\[ P_{St} = \beta_0 + \beta_1 (\text{gender}) + \beta_2 (\text{age}) + \beta_3 (\text{house size}) + \beta_4 (\text{income}) + \cdots \epsilon \]

(2)

\( \beta_1, \beta_2 \) are the coefficients for the corresponding variables,

Where \( P_{St} \) is the dependent variable which is categorical measuring the probability of someone being employed or not employed and hence the dependent variable will be defined as follows;

1 - poor, 0 - not poor

\( \beta_0 \) is the constant

The other parameter are defined as follows,

\( \beta_1 \rightarrow \) is the intercept term of the regression

\( \beta_{1,2,\ldots,n} \rightarrow \) are the coefficients corresponding to independent variables \( X_{1,2,\ldots,n} \)

\( \epsilon \rightarrow \) is the error term of the regression

**Results and Interpretation**

This section presents results and interpretation of the study. The first part presents descriptive statistics followed by cross tabulations results and finally the results of the regression analysis are presented.

**Descriptive Results**

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of household head</td>
<td>9629</td>
<td>15</td>
<td>96</td>
<td>51.53</td>
<td>15.158</td>
</tr>
<tr>
<td>Household size</td>
<td>9629</td>
<td>1</td>
<td>24</td>
<td>3.66</td>
<td>2.386</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>9629</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 provides valuable descriptive statistics for the continuous variables. The average age of the household head is 51, indicating that most household heads are middle-aged. The average household size is 3, which implies that the typical household in the sample is relatively small. However, the maximum household size of 24 is also noteworthy, indicating the presence of some relatively large households in the dataset. Overall, these descriptive results offer insight into the sample's demographic characteristics, which may be useful for understanding poverty status in the subsequent analyses.

![Figure 1: Income Distribution](image)

The income distribution results presented in Figure 1 provide a valuable summary of the income levels of households in the sample. Figure 1 indicates that the majority of household heads (57%) had a total monthly income between 0 to 5000 rand, which is consistent with the high levels of poverty observed in South Africa. Additionally, only a small proportion of the sample (2%) reported a monthly income of above 50,000 rand, which represents a significant disparity in income distribution. Overall, these results suggest that the household income levels are likely to be a crucial factor in understanding poverty status of households in the subsequent analyses.
Table 2: Population Group of Household Head

<table>
<thead>
<tr>
<th>Population group of household head</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>African/Black</td>
<td>8312</td>
<td>86.3</td>
<td>86.3</td>
<td>86.3</td>
</tr>
<tr>
<td>Coloured</td>
<td>639</td>
<td>6.6</td>
<td>6.6</td>
<td>93.0</td>
</tr>
<tr>
<td>Indian/Asian</td>
<td>151</td>
<td>1.6</td>
<td>1.6</td>
<td>94.5</td>
</tr>
<tr>
<td>White</td>
<td>527</td>
<td>5.5</td>
<td>5.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>9629</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The presented results in Table 2 offer useful insights into the sample's racial demographics. The table indicates that South Africa comprises four distinct racial groups, with the African/Black community constituting the largest group at 86%. In contrast, the Indian/Asian community represents the smallest group, accounting for only 1.6% of the sample. These results highlight the continued significance of race in South Africa and suggest that race may be a key factor in understanding poverty status in the subsequent analyses. Understanding the relationship between race and poverty is essential for designing effective policies to alleviate poverty in the country.

Figure 2: Gender of Household Head

The results presented in Figure 2 provide insights into the gender distribution of household heads in the sample. The figure indicates that the majority of the sample is comprised of male-headed households (53%), with female-headed households accounting for 47% of the sample. The gender disparity, while present, is not as pronounced as might be expected. The nearly equal distribution of male and female-headed households suggests that gender may not be a significant factor in determining poverty status in the subsequent analyses. However, further analysis may be necessary to determine whether there are any significant differences in poverty status between male and female-headed households in the sample.

Figure 3: Grant Distribution

The data presented in Figure 3 shows that most of the households, 63 percent, indicated that they were receiving grants, while the remaining 37 percent did not receive any grants. The Figure highlights the significance of social grants as a form of support for those who were impacted by the COVID-19 pandemic. As noted in the introduction, the South African government increased government expenditure, including the increase of social grants, to mitigate the economic effects of the pandemic. However, further analysis is needed to determine the effectiveness of this strategy and its impact on poverty reduction.
Figure 4 shows the distribution of the use of agricultural products and stock among the participants in the study. The results reveal that a small percentage (19.6%) of the households reported using agricultural products and/or keeping stock. Among them, only 1% relied on the produce as their main source of income, while the majority (75%) did not engage in any agricultural activities or keep stock. The use of agricultural products and stock can be an important source of income, especially in rural areas. However, the low participation rate in this study suggests that it may not be a widespread practice among the households surveyed.

Table 3: Poverty Status of Population

<table>
<thead>
<tr>
<th>Poverty Status</th>
<th>lower bound poverty</th>
<th>frequency</th>
<th>percentage</th>
<th>upper bound poverty</th>
<th>frequency</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not poor</td>
<td>6013</td>
<td>62%</td>
<td>not-poor</td>
<td>4737</td>
<td>49%</td>
<td></td>
</tr>
<tr>
<td>poor</td>
<td>3616</td>
<td>38%</td>
<td>poor</td>
<td>4892</td>
<td>51%</td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>9629</td>
<td>100%</td>
<td>9629</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cross Tabulation Results

The study further calculated the poverty status of household head, the methods used to calculate the poverty status have been explained in the methodology section, the results indicate that when using the lower bound poverty rate 62 percent were found not poor and 38 percent were found to be poor. While when using the upper bound poverty line 49 percent were found to be not poor and 51 percent were found to be poor. The next section discusses the cross tabulation between poverty status and different variables.

Table 4: Cross Tabulation Results of Poverty Status and Province

<table>
<thead>
<tr>
<th>Province and poverty status Crosstabulation</th>
<th>Poverty status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not-poor</td>
<td>poor</td>
</tr>
<tr>
<td>Province</td>
<td>Count</td>
<td></td>
</tr>
<tr>
<td>Western Cape</td>
<td>605</td>
<td>207</td>
</tr>
<tr>
<td>% within Province</td>
<td>74.5%</td>
<td>25.5%</td>
</tr>
<tr>
<td>Eastern Cape</td>
<td>617</td>
<td>882</td>
</tr>
<tr>
<td>% within Province</td>
<td>41.2%</td>
<td>58.8%</td>
</tr>
<tr>
<td>Northern Cape</td>
<td>228</td>
<td>177</td>
</tr>
<tr>
<td>% within Province</td>
<td>56.3%</td>
<td>43.7%</td>
</tr>
<tr>
<td>Free State</td>
<td>217</td>
<td>323</td>
</tr>
<tr>
<td>% within Province</td>
<td>40.2%</td>
<td>59.8%</td>
</tr>
<tr>
<td>KwaZulu-Natal</td>
<td>901</td>
<td>930</td>
</tr>
<tr>
<td>% within Province</td>
<td>49.2%</td>
<td>50.8%</td>
</tr>
<tr>
<td>North West</td>
<td>301</td>
<td>325</td>
</tr>
<tr>
<td>% within Province</td>
<td>48.1%</td>
<td>51.9%</td>
</tr>
<tr>
<td>Gauteng</td>
<td>1028</td>
<td>771</td>
</tr>
<tr>
<td>% within Province</td>
<td>57.1%</td>
<td>42.9%</td>
</tr>
<tr>
<td>Mpumalanga</td>
<td>331</td>
<td>508</td>
</tr>
<tr>
<td>% within Province</td>
<td>39.5%</td>
<td>60.5%</td>
</tr>
<tr>
<td>Limpopo</td>
<td>509</td>
<td>769</td>
</tr>
<tr>
<td>% within Province</td>
<td>39.8%</td>
<td>60.2%</td>
</tr>
<tr>
<td>Total</td>
<td>4737</td>
<td>4892</td>
</tr>
<tr>
<td>% within Province</td>
<td>49.2%</td>
<td>50.8%</td>
</tr>
</tbody>
</table>
The cross-tabulation results in Table 4 provide important information on the relationship between poverty status and province. The table shows the poverty rates for each province, and it is clear that some provinces have significantly higher poverty rates than others. The provinces with the highest poverty rates are Limpopo, Mpumalanga, North-West, Free State, and Eastern Cape, with poverty rates ranging from 52% to 60.5%. These provinces had more than half of their households living in poverty. The results highlight the need for targeted interventions in these provinces to address poverty and improve the well-being of the affected households.

Table 5 presents cross tabulation results between poverty status and population group. The results show that the Black African population had the highest poverty rate at 60 percent, followed by the Coloured population at 30 percent, and the least affected were the white community at 7 percent. This indicates that poverty in South Africa is still highly correlated with race and suggests that poverty reduction strategies need to address historical and systemic inequalities that continue to affect certain population groups more than others.

Table 6 presents an important finding that gender is a significant predictor of poverty status in South Africa. The results show that females in this study had a significantly higher percentage of poor households compared to male counterparts. This indicates that gender inequalities persist in South Africa, and policies and programs aimed at reducing poverty should address this issue.

Table 7 shows the cross tabulation between poverty status and grant distribution. The results indicate that the majority of households that receive social grants were found to be poor. This is important as the South African government increased social grants to support those in need during the Covid-19 pandemic. The fact that a significant portion of grant recipients remain in poverty suggests that
additional interventions may be necessary to alleviate poverty in the country. It is important to note that the high poverty levels could be attributed to other economic challenges such as high levels of unemployment and food insecurity, as mentioned in the table.

**Regression Results**

This section presents the regression results for the study. As discussed in the methodology section, the study employed a binary logistics regression. The dependent variable used in the regression analysis was poverty status, which was categorised into two groups, the poor and the non-poor. Thus, the regression was based on the nature of the dependent variable and hence a binary logistic regression was estimated with poor as a success category or coded as 1 and non-poor was coded as 0. Table 3 presented the frequency distribution of the two categories using both the upper bound poverty line and lower bound poverty line. Further in the regression analysis the study uses the lower bound poverty line calculation in the regression model. Other test such as Omnibus tests, Cox & Snell R squared, and the Nagelkerke R squared were run and found to be normal meaning the regression model is a fit. The results of the regression model are as follows:

<table>
<thead>
<tr>
<th>Variables in the Equation</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex of household head (male)</td>
<td>-0.640</td>
<td>0.102</td>
<td>39,691</td>
<td>1</td>
<td>0.000</td>
<td>0.527</td>
</tr>
<tr>
<td>Age of household head</td>
<td>-0.017</td>
<td>0.002</td>
<td>67,998</td>
<td>1</td>
<td>0.000</td>
<td>0.983</td>
</tr>
<tr>
<td>Household size</td>
<td>0.942</td>
<td>0.024</td>
<td>1532.878</td>
<td>1</td>
<td>0.000</td>
<td>2.565</td>
</tr>
<tr>
<td>Total income</td>
<td>-4.908</td>
<td>0.130</td>
<td>1427.449</td>
<td>1</td>
<td>0.000</td>
<td>0.007</td>
</tr>
<tr>
<td>Constant</td>
<td>4.305</td>
<td>0.308</td>
<td>195.424</td>
<td>1</td>
<td>0.000</td>
<td>74.082</td>
</tr>
</tbody>
</table>

**Gender of Household Head**

The first variable in the regression results is Gender of household head being categorical variable it was coded as 0 for female and 1 for male. The result shows that gender was statistically significant predictor of poverty status in South Africa with a P-value of 0.000. The coefficient for gender was -0.640 which was negative, and since gender was coded as 1 for male and 0 for females, it means the negative coefficient indicates the relationship between males and the success category of the dependent variable which was poor. Thus, it implies that males in the sample were more unlikely to be poor than females with the odds of 0.527 represented by the Exp(B) which is the exponential value of the coefficient. This agrees with the literature where women were mostly found to be in worse off categories as compared to the male counterparts.

**Age of Household Head**

The second variable is age of household head, the variable was considered as a continuous variable in the regression model. The coefficient was statistically significant with P-value .000 which means age contributed to the probability of one being poor or not. The results indicate age had a negative coefficient of -0.017 and an odds ratio of 0.983 which suggest that with an increase in age decreases the probability of one to be poor. The results can be related to the fact that as people get older, they become more matured hence acquired a lot more experience to get a job and become more responsible to provide for themselves and their families.

**Household Size**

The third variable is household size, the variable was also considered as a continuous variable in the regression model. The coefficient was statistically significant P-value .000 which means household size contributed to the probability of one being poor or not. The results indicate the variable had a positive coefficient of 0.942 and an odds ratio of 2.565 which suggest that with an increase in number of people in a household increases the probability of that household to be poor. The result makes sense in especially if the income of the household head does not increase.

**Total Income**

Total income is the fourth variable and very important determinant of poverty status, it is considered as a continuous variable in the regression model. The coefficient was statistically significant P-value .003 which means Income contributed to the probability of one being poor or not. The results indicate the variable had a negative coefficient of -4.908 and an odds ratio of 0.007 which suggest that with an increase on income in a household decreases the probability of that household to be poor. The result makes sense because income in one main factor that deprives people to live a normal standard life.

**Conclusion**

The main aim of the paper was to investigate the factors that contribute to poverty in the aftermath of the COVID-19 pandemic in South Africa. The study used data collected by STATS SA in 2021, which was deemed appropriate as it was collected after the COVID-19 pandemic and is the most recent data available. The poverty status of each household was calculated using the national
poverty line for 2021, and a categorical variable was created to represent poverty status, with “1” indicating poor and “0” indicating not poor. This variable was then used as the dependent variable in the regression analysis, with several independent variables being selected, including gender, age, household size, population group, income, and province. The paper aimed to identify which of these variables was a significant predictor of poverty status in South Africa, with the hope of providing insights into how poverty can be addressed in the wake of the COVID-19 pandemic.

The analysis employed was in three folds the first part was that of descriptive analysis which mainly described the demographics of our data, secondly cross tabulation analysis was employed to access the relationship between selected categorical independent variables and the explanatory variable. Lastly the study employed a binary logistic regression model to access how well the set of the variables included in the study predicts the categorical dependent variable (poverty status) and determine the “goodness-of-fit” of our model but also to provide a summary of the accuracy of classification of cases, in order to help the researchers, determine the percent of predictions made from this model/equation that will be correct.

The study found that the poverty status of the sampled South African households was quite high. Using the upper bound poverty line, which is a measure of poverty that takes into account food and non-food requirements such as electricity and transport. It was revealed that 62 percent of the sampled households were living below the poverty line. This implies that these households could not afford to meet their basic needs, including food, shelter, healthcare, and education. They were therefore considered to be poor. On the other hand, only 38 percent of the sampled households were regarded as non-poor, meaning that they were able to meet their basic needs. When the lower bound poverty line was used, which is a measure of poverty that considers only food and non-food essential items, the poverty status of the sampled households was slightly lower. Specifically, 49 percent of the households were regarded as poor, while 51 percent were regarded as non-poor. However, this still indicates a high level of poverty in South Africa, which could be due to various factors, including high levels of unemployment, income inequality, and economic challenges brought about by the Covid-19 pandemic.

Recommendation

Based on the analysis of poverty determinants in South Africa after the Covid-19 pandemic, some recommendations for the government to help reduce poverty levels in the country include:

i. Increase employment opportunities: The government needs to prioritize policies and initiatives that create employment opportunities, especially for the youth and women who are most affected by poverty. This can be achieved through investments in sectors that have a potential for job creation, such as agriculture, manufacturing, and services.

ii. Increase access to education and training: Education and training are crucial for improving employability and income-generating opportunities. The government should prioritize investments in education and training programs that are relevant to the job market and provide practical skills for employment.

iii. Strengthen the social protection system: The government should strengthen the social protection system by expanding social assistance programs such as social grants and unemployment benefits. This will help to alleviate poverty among the most vulnerable groups, including the elderly, children, and the disabled.

iv. Address income inequality: Income inequality is a major driver of poverty in South Africa. The government should implement policies that address income inequality such as progressive taxation, minimum wage laws, and policies that promote income redistribution.

v. Address food insecurity: Food insecurity is a major contributor to poverty in South Africa. The government should invest in programs that promote food security such as subsidies for small-scale farmers, food banks, and community gardens.

vi. Improve access to basic services: Lack of access to basic services such as water, sanitation, and healthcare is a major driver of poverty. The government should prioritize investments in infrastructure to improve access to these basic services, especially in rural areas.

Overall, a multi-pronged approach is needed to reduce poverty levels in South Africa, with a focus on creating employment opportunities, strengthening the social protection system, addressing income inequality, and improving access to basic services.

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