

DETERMINANTS OF RURAL HOUSEHOLD POVERTY IN ZIMBABWE: A CASE STUDY OF NKAYI DISTRICT IN MATEBELELAND NORTH PROVINCE

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DOI: <https://doi.org/10.5281/zenodo.13319409>

Published Date: 14-August-2024

Abstract: The objective of this study was to examine the determinants of rural household poverty in Zimbabwe using Nkayi district as a case study. Cross-sectional data was collected from randomly selected 150 households across 5 wards chosen at random in Nkayi district. The study employed the logit model in analysing the data. Estimations were undertaken using the maximum likelihood technique. The study adopted the consumption approach to poverty and total consumption poverty line (TCPL) of \$175 from ZIMSTAT. The household poverty prevalence was found to be at 82.7 per cent indicating that rural poverty is still a problem in Nkayi district. The results revealed that the coefficients of the marital status of household head, size of cattle herd, household's ownership of scotch cart and the level of education of the household head were statistically significant and had a negative relationship with poverty. The coefficients of the age of the household head and the household dependency ratio were also statistically significant and had a positive relationship with poverty. Therefore, it is suggested that policies and programmes that aim at reducing rural poverty should promote education for the rural poor. They should also target asset building like cattle and scotch cart for the poor. Finally, the study recommends the creation of safety nets for the households headed by old aged people, unmarried people and those households with high dependency ratio.

Keywords: Determinants, Rural, Poverty, Household.

1. INTRODUCTION

Poverty is one of the major challenges faced by developing countries especially in Sub-Saharan Africa (SSA). Despite the rapid decline in global extreme poverty, the number of people living in poverty in SSA is increasing. More than 330 million people in 2012 were recorded to be in poverty as compared to about 280 million people in 1990 (World Bank, 2018). Poverty is a multi-dimensional phenomenon and manifests itself in different forms. It can be defined as the inability by a household to meet basic needs requirements for both food and non-food items. Rural areas have higher poverty rates than urban areas in developing countries which makes poverty a rural phenomenon. The Zimbabwe National Statistics Agency (ZIMSTAT) in its 2011/12 poverty survey found that 76 per cent of rural households in Zimbabwe were poor as compared to 38.2 per cent in urban areas (ZIMSTAT, 2013).

Alleviating poverty especially in rural households remains one of the policy challenges among governments and other interested players like non-governmental organisations (NGOs). Poverty is a constraining factor to economic development in developing countries and Zimbabwe in particular. There have been efforts by both the government of Zimbabwe (GOZ)

and NGOs to combat the scourge of poverty. These include provision of food aid and free farming inputs like fertilizer, cotton and maize seed for the rural households. Despite such efforts, poverty surveys carried out by ZIMSTAT show that poverty remains more prevalent and more severe in rural households, especially, in Nkayi district (ZIMSTAT, 2013; ZIMSTAT, 2015).

All districts in Matebeleland North province experience similar agro-ecological conditions, which have a large bearing on rural households' livelihoods as they depend mainly on farming and have relatively high incidences of poverty. However, Nkayi has been the most poverty stricken in the semi-arid region of Zimbabwe. Nkayi district like other areas which are in agro-ecological regions 4 and 5 is usually prone to drought, hunger and poverty due to high temperatures, low and unpredictable rainfall (ZIMSTAT, 2013). Nkayi district has been receiving support like food aid from both GOZ and NGOs to cope with poverty.

To successfully combat poverty, it is essential to understand why some people are poor. Poverty may be due to different factors which comprise individual, household, community, sector-specific and national characteristics (World Bank, 2005). Other factors influencing poverty like geography and history can generally be agreed to be the causes of poverty in developing countries. However, what might differentiate individual households experiencing same historical and geographical conditions might be their different household characteristics. Data on the characteristics of poor households in Nkayi and Zimbabwe at large are often descriptive. They are presented graphically and or in tabular forms. This is helpful in painting poverty profiles which is one of the objectives of periodic household poverty, income, consumption and expenditure surveys (PICES) by ZIMSTAT in Zimbabwe.

The Zimbabwean government inherited a dual economy at its independence in 1980. Since then it has embarked on a series of policy measures. These policies were meant to grow the economy, fight and reduce poverty and possibly eventually eradicate it by year 2030 as espoused in the United Nations' (UN) 2030 agenda for sustainable development (Ministry of Finance & Economic Development (MoFED), 2016). Further, for GOZ to achieve its vision of becoming a middle class economy by year 2030, spirited effort in fighting rural poverty is needed. To have a successful battle against poverty in developing countries, poverty correlates should be identified and reduction policies should mostly target rural households which contribute a high proportion to national poverty statistics and also have high poverty profiles in such countries.

2. BACKGROUND OF THE STUDY

Poverty has been a topical area in Zimbabwe since independence. The persistence of high rural poverty prevalence in Zimbabwe for a long time now might mean that the exact determinants of rural poverty are not known. It has become a stylised fact that Nkayi district has become home of poverty in the most poverty stricken Matebeleland North province of Zimbabwe. Nkayi recorded the highest poverty prevalence rate of 95.6 per cent in the country and all its wards had poverty prevalence rates of above 80 per cent (ZIMSTAT, 2015). Zimbabwe poverty statistics have shown Matebeleland North province and Nkayi district being on the lead on poverty rankings according to province and district, respectively (ZIMSTAT, 2015). Therefore, poverty has become of paramount concern in Nkayi area.

Tables 1 to 3 show that in Zimbabwe, poverty had been a rural phenomenon and is most worrisome in Nkayi rural district.

Table 1: Household Poverty Prevalence in Zimbabwe

Year	Rural	Urban
1995	76.2	41.1
2001	73.0	33.8
200/12	76.0	38.2

Source: ZIMSTAT (2013)

The problem of poverty in Zimbabwe can be traced back to the skewed colonial institutions which favoured the minority white population. These institutions include the Land Apportionment Act of 1930 and the Land Tenure Act of 1969. These policies created the economic dual system in Zimbabwe which has seen the rural communal areas being hot beds for poverty and a source of cheap manual labour for the enclave of commercial farms, mines and urban areas (Rukuni, Tawonezvi & Eicher, 2006). Most settlements in the semi-arid and low agricultural potential areas including Nkayi district are a result of such colonial policies (Manjengwa, Kasiye & Matema, 2012). Against such settlement background which does not favour farming to most black majority population, most rural households in Nkayi have farming as their major economic activity.

Matebeleland North province has been ranking top on household poverty prevalence as shown in the table 2. Poverty surveys carried out and published by ZIMSTAT revealed that poverty prevalence in Matebeleland North province has been above 80 per cent. This is shown in tables 2 and 3 of household poverty prevalence by province and district, respectively. According to ZIMSTAT district poverty prevalence ranking of 2015, Nkayi district had the highest poverty prevalence in Zimbabwe. This district poverty prevalence ranking is shown in table 3 that shows top 10 districts on poverty prevalence in Zimbabwe. Table 3 shows that Nkayi district had a poverty prevalence rate of 95.6 per cent.

Table 2: Household Poverty Prevalence by Province in Zimbabwe

Province	Poverty Incidence 20011/12	Poverty Incidence 2015
Matebeleland North	81.8	85.7
Mashonaland Central	75.5	75.6
Mashonaland West	72.4	73.3
Matebeleland South	70.8	73.6
Manicaland	70.6	71.8
Midlands	67.0	68.7
Mashonaland East	67.0	67.3
Masvingo	63.7	65.7
Bulawayo	34.5	37.2
Harare	35.7	36.4

Source: ZIMSTAT (2015)

Table 3: Top 10 districts on Poverty Prevalence in Zimbabwe

District	Poverty Prevalence (%)
Nkayi	95.6
Lupane	92.9
Gokwe South	90.9
Mudzi	90.0
Tsholotsho	89.3
Bubi	88.7
Muzarabani	88.4
Binga	88.3
Hurungwe	87.9
Rushinga	81.9

Source: ZIMSTAT (2015)

Nkayi district is on the eastern part of Matebeleland North province. It has a close proximity to three of Zimbabwe's cities, namely, Kwekwe, Gweru and Bulawayo. These cities serve as big markets for agricultural produce as well as source of inputs and employment. To its west, Nkayi borders with Lupane which is a provincial centre for Matebeleland North province. The district is entirely located in the semi-arid region of Zimbabwe with poor agricultural potential. The area is characterized by sandy loam soils which are infertile. It receives an average rainfall of about 650mm or less per annum which tends to be erratic and unreliable (ZIMSTAT, 2013). Such unreliable distribution of rainfall has exacerbated rural poverty as rural farm households/peasants mainly depend on rain-fed agriculture for their livelihoods. The area is exposed to droughts and sometimes intermittent floods, hence crop failures leading to food poverty.

According to the Food Poverty Atlas Map (FPAM) of 2016 constructed by ZIMSTAT, most districts in semi-arid region had relatively higher food poverty prevalence though they were not food poor (ZIMSTAT, 2016). However, statistics for Nkayi were worrisome. The FPAM shows that out of 60 administrative districts in Zimbabwe only Nkayi (66 per cent), Lupane (50 per cent) and Gokwe South (50 per cent) were food poor. With the exception of ward 29 which is a growth point, all other 29 wards of Nkayi were food poor. Some districts in semi-arid region though not food poor had less than 50 per cent of their wards being food poor and some with not even a single ward being food poor like Binga, Bubi and Tsholotsho among others (ZIMSTAT, 2016). Such a snapshot on food poverty though it might be attributed to transient poverty, it adds on to the anxiety triggers on what are the real determinants of household poverty in Nkayi.

The GOZ and NGOs have been addressing poverty problem in Zimbabwe since independence but statistics discussed in this section showed that poverty remains high. Some reasons that can be attributed to the persistence of poverty in Zimbabwe could be a series of droughts and economic deterioration for example, the hyper-inflation of 2008 (Manjengwa *et al.*, 2012). Some indicators of development have been improving like the literacy level in the country. For example, ZIMSTAT (2014) reports that its labour force survey found out that Zimbabwe's adult literacy rate stood at 98 per cent then, being one of the highest in SSA, with gender parity. Human development index also shows a steady increase from 0.347 in 2005 to 0.535 in 2017 (United Nations Development Programme (UNDP), 2018). These statistics could mean that poverty should have decreased. However, PICES have shown that there has never been a marked change in poverty prevalence in Zimbabwe. These results must be worrisome to the government and other stakeholders who have been putting effort to try reduce poverty.

However, considering that both poor and non-poor rural households co-exist under the same macroeconomic and agro-ecological conditions, it means that there is more to poverty determinants which needs to be investigated at micro level. In order to successfully combat rural poverty and poverty in general, greater knowledge of its causes is essential to the crafting of effective policy measures against poverty. Hence, this study would focus on micro level household analysis to get a deep understanding on the causes of rural poverty in Nkayi district of Matebeleland North province of Zimbabwe.

PROBLEM STATEMENT

Poverty surveys that are periodically conducted by ZIMSTAT show that poverty remains a challenge in Zimbabwe. Most households in Nkayi district have been living in poverty. Rural household poverty in the district remains high despite the effort that has been put by GOZ and other development stakeholders. Determinants of poverty in Nkayi district remain obscure since it was poverty profiling studies that had been undertaken in the area (ZIMSTAT, 2013).

There is debate and lack of consensus in literature on the causes of poverty, and influence and direction of rural household characteristics on poverty. For example, the Malthusian theory postulates that households with relatively large sizes tend to be associated with high levels of poverty. On the other hand, the Drudgery Aversion theory asserts that peasant farmers like most households in Nkayi rely solely on household labour for production. Hence, larger families tend to have higher output levels and, therefore, less poverty.

Geography has been generally put as the major factor influencing poverty in semi-arid areas (ZIMSTAT, 2013; Manjengwa *et al.*, 2012). However, its influence in Nkayi can be an indication that individuals have failed to adopt the risk mitigation strategies as compared to others in rural districts experiencing similar geographical conditions. Further, poverty profiles though important for interventions meant to target poor households, they do not give the relative contributions of different influences on poverty. Many subjective views have been suggested as the causes of poverty in the area but have never been subjected to empirical test to ascertain the exact and significant causes of such poverty. It is such empirical analysis that helps in identifying the contributions of different variables to poverty. For example, the probability of a household being poor can be ascertained by applying regression techniques on perceived correlates of household poverty.

Since the causes of poverty might not be the same everywhere, this study investigates the determinants of poverty among rural households in Nkayi district of Matebeleland North province of Zimbabwe. It seeks to identify socio-economic and demographic factors that influence rural poverty at household level using regression analysis technique.

RESEARCH OBJECTIVES

The general objective of this study was to examine the determinants of poverty among rural households in Nkayi district. The specific objectives of this study were to:

- Examine socio-economic factors that determine poverty in Nkayi district.
- Identify the demographic factors that determine poverty in Nkayi district.
- Find the household count poverty ratio in the study household population.

RESEARCH QUESTIONS

This research seeks to answer the following questions:

- What are socio-economic factors that determine poverty in rural households?

- What are the demographic factors that determine rural household poverty?
- What is the household count poverty ratio in the target household population?

JUSTIFICATION OF THE STUDY

This study contributes to the understanding of the determinants of rural poverty focusing on household level characteristics. It will add to the literature on poverty by establishing socio-economic and demographic factors that influence poverty in rural areas.

Causes of poverty are not homogenous everywhere, they tend to be area specific (World Bank, 2005). Without complete knowledge of the determinants of rural poverty at micro-economic level, interventions are most likely to be misdirected and become less effective in reducing poverty. This study would also add to and complement poverty literature in Nkayi, which had been descriptive on the causes, from an empirical approach. Hentschel and Lanjouw (1996) argue that it is regression analysis that can be used to isolate the impact of a specific household characteristic on poverty at a micro-economic level. This study also updated poverty profiles in Nkayi district which are an important guide to the policy makers in the fight of poverty.

Knowledge of the determinants of poverty is important in fighting poverty and for the realisation/achievement of the United Nations (UN)'s sustainable development goals (SDGs). GOZ has committed itself to work towards the achievement of post 2015 SDGs by the year 2030. The SDG number one is to end poverty in all its forms everywhere by the year 2030 (United Nations Development Programme (UNDP), 2018). Understanding poverty determinants would also help inform policy makers in government and humanitarian organisations to identify those rural households which are poverty stricken and most vulnerable to poverty, and design more accurately targeted policy interventions.

3. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Poverty is multidimensional and, therefore, complex. It manifests itself in different dimensions of deprivation that relate to human capabilities. Therefore, the choice of its definition depends on whether the focus is on a broader set of needs or just material needs that permit well-being. Absolute poverty which is the inability to meet the minimum standard of living or poverty line is of most concern among rural households in developing countries (Rocha, 1998). Determinants of poverty can be explained by different economic theories. These include the Classical, Neo-classical, Keynesian/Liberal, Marxist/Radical and Social theories among others (Blank, 2010).

Classical Theories

Classical theory puts that individuals are responsible for poverty. Allocation of resources is the responsibility of markets and markets result in efficient market outcomes. The wage reflects individual productivity. Accordingly, individuals' decisions might affect productivity either positively or negatively. For example, some choices made by individuals make them deficient in terms of education and entrepreneurship skills among others. Such behavioural preferences by individuals might create a culture that can be passed across generations within a family causing intergenerational poverty (Blank, 2010). Some people might become contented that they are predestined to poverty. They become reluctant in improving their productivity capabilities. Therefore, parents with skills deficiencies, for example, would pass on poverty to the next generation as they leave no bequest.

Todaro and Smith (2012) notes that when a culture of poverty is created within a family/household, the household continues to be trapped in vicious circle of poverty unless there is an outside intervention. Therefore, interventions like food aid and other forms of aid might help in rescuing a household from poverty. However, aid tends to create dependency syndrome among aid recipients. Some people would not make decisions to improve their capabilities like investing in human capital. They might believe that they are predestined to poverty and need to be given aid because they are poor. As a result aid, especially food aid, might condemn households into poverty if households become more depended on aid.

Another classical theory that explains poverty is by Thomas Malthus. The theory states that population grows at an exponential rate and food supply grows at an arithmetic rate. Therefore, if fertility levels are not controlled in order to balance food supply with population level, households would end up in poverty. The Malthusian theory implies that households with high fertility rates tend to be poor than smaller households.

Neo-Classical Theories

This school of thought asserts that the main cause of poverty is market failure. It also points out that unequal initial endowments of skills, talents and capital determine the productivity of an individual in generating poverty within a market economy. Some individuals inherit bequest or productive assets like ploughs, scotch carts and livestock from their parents while others get the debt burdens. Further, some individuals might be born with poor health, disabled or incapacitated. These health conditions might constrain them from being productive or economically active. Therefore, they are more likely to end up in poverty. This might explain why some households are worse off than others.

Moreover, households which own economically valuable assets like cattle are less affected by negative shocks. These shocks might increase the probability of households being poor. Age as a component of human capital can also influence the likelihood of poverty incidence. Under the neo-classical labour market, if age is a determinant of marginal productivity, older people are less likely to get employed than young individuals. Older individuals are mostly affected by higher depreciation rate of human capital and shorter employment horizons. Therefore, they are more likely to enter or re-enter poverty. Another demographic factor that can be attributed to poverty likelihood by neo-classical theorists is marital status of household head. Single parent households tend to lose benefits from economies of scale that exist when more than one parent are economically active and contribute to household income.

Keynesian/Liberal Theory

The Keynesians believe that poverty is involuntary and is caused by unemployment. Unemployment is due to demand deficiency and is believed to be the primary source of poverty. Therefore, the Keynesians advocate for the government intervention to tackle involuntary unemployment. Further, poverty can be amplified if poor individuals tend to experience discontinuous, short term employment throughout their lifetime. Such discontinuous, short term employment tends to be a characteristic of the informal sector. Therefore, formal employment which tends to be stable and long term can have negative effect on household poverty.

Marxist/Radical Theories

According to the Marxists, poverty is caused by capitalism. Poverty is a result of mainly discrimination. This can be solved by minimum wage legislation and other anti-discrimination laws. Capitalism is viewed as exploitative on labour. It results in little or no savings made due to low wages. This constrains individuals from improving their livelihood prospects. Hence, they would be more likely to be vulnerable to poverty.

Further, Marxist theories allude that some members of the society are discriminated in accessing some valued social resources which enable them to fully participate in economic and social processes. For example, some traditions in developing countries do not permit females to inherit their parents' or husbands' estates and also discriminate females in accessing education. These traditional institutions tend to cause female headed households to be more likely poor than male headed ones due to limited opportunities.

Social Exclusion and Social Capital Theories

Social exclusion can be defined as the process by which some individuals or groups are wholly or partially excluded from full participation in the societal activities. Social exclusion theorists put emphasis on inequality dimensions as the cause of poverty. The result is some individuals have limited opportunities and less material resources available to them in society. As a result the excluded individuals or groups become more vulnerable to poverty.

Social capital is of great importance in explaining the causes of poverty. It concerns social networks as well as trust and norms of reciprocity. Therefore, married household heads tend to have a wider social network and less likely being poor than unmarried ones, *ceteris paribus*. Putnam (2000) argues that it is lack of bridging social capital that might exacerbate the social isolation of already poor neighbourhoods. This results in a lack of contact with positive role models in society. Hence, the obstruction of escape routes out of poverty. Further, social capital processes can generate both positive and negative society externalities. For example, individuals that interact with groups that promote negative behaviour tend to be poor.

Drudgery Aversion Theory

The theory assumes that farm households solely depend on household labour to meet their subsistence needs and there is no market for labour. Lack of incentive to produce beyond subsistence needs tends to breed a culture of poverty. Relatively large households tend to produce more on their farms, thereby, increasing consumption prospects. However, as labour input

increases relative to other factors of production like land which continues to be fragmented and reduced by inheritance laws, diminishing marginal returns to production tend to set in. Moreover, not all household members provide household farm labour. Some members might be in the economic inactive group and increase the dependency ratio. Hence, both the household size and dependency ratio tend to positively influence household poverty.

Empirical Literature Review

This section discusses different studies that have been carried out in different contexts on the determinants of poverty. Of these studies carried out in developing countries only a few were done in Zimbabwe. Among the studies carried out in Zimbabwe that focused on micro-economic level determinants of poverty, most of them targeted regional and national level. Nkayi district has been ranking top on poverty profiling. However, no specific study that has been carried out in Nkayi district to identify the degrees of contribution of poverty correlates to household poverty (ZIMSTAT, 2013).

Borko (2017) used cross-sectional data collected from a sample of 235 households of Damot Gale district in Ethiopia to study the determinants of rural poverty. The study used the consumption approach and logit model. The results showed that the household head's sex, family size, dependency ratio, marital status of the household head and household age had a positive association with poverty. The coefficients of these variables were statistically significant. Age square, land size, access to credit, off farm activity, remittances, market access, household health and oxen were found to have a negative relationship with household poverty. Their coefficients were statistically significant. Davis & Sanchez-Martinez (2014) argue that determinants of poverty are not the same everywhere. This study followed the approach that was used by Borko to establish the causes of household poverty in Nkayi district.

Binam *et al.* (2011) carried out a study on the determinants of rural poverty in some Western, Eastern and Southern African countries. The study used secondary data to find out how institutional and community based and household variables influence poverty incidence in rural areas. Binam *et al.* (2011) made separate estimations for each of the countries to find out whether the factors considered had similar effect on poverty. In general, the results revealed that the existence of any market, school, boreholes, social hall, microfinance institution and other social amenities within a village had negative impact on poverty. Some variables like family size, proportion of children and adults and membership to community groups were also important correlates of poverty. However, it was found that magnitude of coefficients of these variables vary across countries. Further, in some few countries like Malawi and Mozambique family size and post-secondary education had no influence on rural poverty. This confirms the assertion that poverty correlates are not homogeneous everywhere (Davis & Martinez-Sanchez, 2014). Therefore, a close focus on a specific area helps in identifying area specific causes.

Majeed and Malik (2014) examined the personal and household characteristics as determinants of poverty in Pakistan. The study used secondary data from the Federal Bureau of Statistics of Pakistan. The method of quintiles was used to determine poor households where those that lied in the lowest quintile were considered poor. The logit model was used to identify the determinants of poverty at household level. The results showed that the educational level of household head, agricultural employment status, experience, living in urban area and remittance had negative impact on poverty. However, primary education had a greater impact on poverty in rural areas than in urban areas. Household size, household head's age, male headed households and the provincial residences had positive relationship with poverty.

Maloma (2016) carried out a study on the socio-economic determinants of household poverty status in low income settlement of Gauteng province in South Africa. The study was based on primary data collected on individual and household characteristics from a sample of 300 households in 2013. It used the income approach to poverty and logit model was used to analyse the data. Age, education level, employment status of household head and income were significant causes of poverty and had a negative relationship with household poverty. Household size and gender of the household head were statistically insignificant.

Muhammedhussen (2015) carried out a study on the determinants of rural income poverty in Ethiopia. The study adopted the income approach to poverty. Data on socio-economic variables were collected from a sample of 217 households in two rural areas in Dodola district of Oromia regional state in 2012 using the simple random sampling technique. Data were estimated using the binary logistic method. The results reveal that the significant determinants of poverty were income sources, land and livestock unit. These variables had a negative association with poverty. Further, family size had positive relationship with poverty and was statistically significant at 1 per cent level of significance. Other variables like age, gender, dependency ratio and education were also statistically insignificant in influencing rural poverty.

A few studies on poverty were done in Zimbabwe (ZIMSTAT, 2013). Some were focusing more on poverty profiling like the one by Manjengwa *et al.* (2012). Manjengwa *et al.* (2012) carried out a poverty profile study in Zimbabwe using a sample from 16 districts across the provinces. The study used the consumption expenditure approach and also sought households' perceptions on their poverty status. The poverty profiling results showed that areas that lie in agro-ecological regions 4 and 5 had high levels of poverty. The semi-arid region usually experiences routine agricultural shocks. The study also used the ordinary least squares (OLS) regression method to estimate the consumption model to find out the influence of some demographic and socio-economic correlates of poverty. Household size was a positive significant determinant of household poverty. Unlike secondary education, primary education was found to be an important factor that reduces poverty in rural areas.

Pindiriri (2015) examined the impact of household characteristics on household poverty in Zimbabwe. The study was based on a sample of 3448 Zimbabwean households in different provinces. The study adopted the consumption model to estimate the influence of poverty correlates on household poverty. The results showed that poverty was caused by bigger household size, low household income, household location and low educational level of the household head.

Sakuhuni *et al.* (2011) carried out a study on economic determinants of poverty using cross sectional data for 2005. Like other Zimbabwean studies by Manjengwa *et al.* (2012) and Pindiriri (2015), the study used OLS to estimate the consumption model to find the degree of determinants of poverty on household poverty. The results revealed that household size and age of the household head were significant and negatively associated with per capita expenditure and positively related to poverty. Age squared, primary education, maximum level of education, gender (male), migration status, land area cultivated, employment in any sector except informal sector and number of income sources among others were positively associated with per capita consumption and therefore, negatively correlated to poverty.

The discussed poverty studies carried out in Zimbabwe used consumption models and OLS in establishing the determinants of household poverty. They all focused on broad area across the country. However, a close and narrow focus which is area specific is necessary to establish the exact determinants of rural household poverty. Poverty determinants at household level are not homogeneous everywhere. Moreover, none of these studies used poverty models despite adopting the consumption approach which is a suitable proxy to rural poverty. Studies in Ethiopia and South Africa by Muhammedhussen (2015) and Maloma (2016), respectively, used the income approach to poverty which might not be a suitable poverty proxy in rural areas given the irregularity of income flows. However, these studies adopted the poverty model to identify the correlates of household poverty. Furthermore, given lack of consensus on some of the outcomes found to be causing poverty in empirical studies, it was necessary to carry out an investigation on the poverty determinants of household poverty in Nkayi. This helped in identifying the significant household poverty correlates in Nkayi district.

Poverty Measurement Approaches

The cost of basic needs approach (CBNA) enables the adoption of the absolute poverty line which is based on the consumption cost of basic food and non-food items (Hentschel & Lanjouw, 1996). Consumption is a better indicator of welfare especially in rural areas where households tend to have irregular income flows. The total consumption poverty line (TCPL) is derived by computing the non-food consumption expenditures of households whose total expenditures per-capita just equal the value of the food poverty line (FPL).

However, TCPL of \$175 computed by ZIMSTAT for the month for March 2019 was used in this study to identify poor from non-poor households (ZIMSTAT, 2019). Poverty line refers to the cost of a given level of living which must be attained if a person is to be regarded not poor (ZIMSTAT, 2013). Therefore, if there are households that have per-capita consumption expenditures below the TCPL, it means there is poverty. Households with monthly per capita consumption expenditure below the TCPL were classified as poor. The poverty line enabled the establishment of the econometric model dependent variable which is household poverty status. It was also used in the calculation of poverty prevalence in this study using the Foster, Greer & Thorbecke (FGT) poverty formula (Foster, Greer & Thorbecke, 1984).

FGT poverty measures are given below:

Different values of α get substituted into the following equation to derive individual poverty indices, and α takes the values 0; 1 and 2.

$$FGT_{\alpha} = \frac{1}{N} \sum_{i=1}^H \left(\frac{z - x_i}{z} \right)^{\alpha}$$

Z is the poverty threshold, N is the target population size, H is the number of poor whose expenditures are at or below z, x_i is the expenditure of each individual i. The FGT metric weights all the individuals with incomes/expenditures below z approximately the same if α is low. The higher the value of α , the greater the weight place on the poorest individuals. The higher the FGT statistic, the more poverty there is in an area.

When $\alpha = 0$, the result becomes a headcount ratio, which is the fraction of the population that lives below the poverty line.

$$FGT_0 = \frac{H}{N}$$

When $\alpha = 1$, the formula reduces to the poverty gap index.

$$FGT_1 = \frac{1}{H} \sum_{i=1}^H \left(\frac{z - x_i}{z} \right)$$

$$FGT_1 = \frac{H}{N} \left(\frac{z - \bar{x}_p}{z} \right)$$

Where $\bar{x}_p = \sum_{i=1}^H \frac{x_i}{H}$ is the average expenditure of the poor. Thus, the FGT_1 can be expressed as a product of the FGT_0 , and the average expenditure gap of the poor.

Expenditure inequality can be weighed along with poverty when $\alpha = 2$.

$$FGT_2 = \frac{1}{N} \sum_{i=1}^H \left(\frac{z - x_i}{z} \right)^2$$

$FGT_2 = \frac{H}{N} [\mu^2 + (1 - \mu^2)C_v^2]$, where C_v is the coefficient of variation among the expenditures of the poor, H is the total number of the poor, and μ is given by;

$$\mu = \frac{1}{H} \sum_{i=1}^H \left(\frac{z - x_i}{z} \right)$$

x_i is the per capita consumption expenditure for households below poverty line, and zero otherwise, N is the total population, z is the poverty line, H is the number of poor households and α takes the value 0 for poverty incidence/prevalence. Poverty incidence (head count index) is the share of population whose consumption is below the TCPL.

Model Specification

There are many approaches used to modeling and estimating the determinants of poverty. Some studies used consumption models and apply the ordinary least squares (OLS) estimation technique to estimate poverty determinants. Examples discussed in literature review include studies by Pindiriri (2015) and Sakuhuni *et al.* (2011). Other studies used poverty models like the logit model and apply the ML estimation technique to examine poverty determinants.

However, some studies simply analyse poverty using only descriptive statistics. Regression analysis is the simplest method, in a micro-economic context, of analysing the determinants of poverty to establish the effect on poverty of a specified household or individual characteristic, *ceteris paribus* (Hentschel & Lanjouw, 1996). This study complemented such studies using the logit model which classifies households into poverty categories. This would broaden the understanding of the causes of poverty in Zimbabwe by narrowly focusing on rural areas using Nkayi district as a case study.

The logit model used in this study was adopted from literature review. It is the same as the one used by Borko (2017). However, only variables of interest to the Zimbabwean context were captured in this study guided by other Zimbabwean studies by Sakuhuni *et al.* (2011), Manjengwa *et al.* (2012) and Pindiriri (2015). Other variables of interest on a rural setting were adopted from economic theories of poverty and studies done in other countries.

Mathematical derivation of the model:

$$P_i = E\{Y = 1/X_i\} = \frac{1}{1+e^{-(\beta_1+\beta_2X_i)}} \dots\dots\dots (1)$$

$$P_i = \frac{1}{1+e^{-Z_i}} = \frac{e^{Z_i}}{1+e^{Z_i}} \dots\dots\dots (2)$$

$$1 - P_i = \frac{1}{1+e^{Z_i}} \dots\dots\dots (3)$$

$$\frac{P_i}{1-P_i} = \frac{1+e^{Z_i}}{1+e^{-Z_i}} = e^{Z_i} \dots\dots\dots (4)$$

$$L_i = \ln \left[\frac{P_i}{1-P_i} \right] = Z_i = \beta_1 + \beta_2 X_i \dots\dots\dots (5)$$

The empirical model is specified as logit model as follows;

$$Z_i = \beta_1 + \beta_i X_i + \mu_i ;$$

Where Z_i is the poverty status of household i , X_i is a vector of determinants of poverty status for household i , β_1 is a constant term, β_i represents a vector of parameters to be estimated for household i , and μ_i is the error term which is assumed to be normally distributed and not correlated to other independent variables.

Poverty status is the dependent variable taking a value of 1 if the household is poor and zero otherwise. Total consumption poverty line (TCPL) which is an absolute poverty line was used to distinguish poor and non-poor households. Hentschel and Lanjouw (1996) argue that absolute poverty line based on consumption expenditure is the most suitable approach to poverty when estimating correlates of rural poverty.

The explanatory variables are; household size, age of the household head, household dependency ratio, sex of the household head, marital status of the household head, the education level of the household head, employment status of household head, land size owned by the household, number of cattle owned, household's ownership of a plough, household's ownership of a scotch cart and household's access to food aid.

Definition of Variables

Poverty Status (*PovStat*)

This is a binary dependent variable which takes the value of 1 if the household is poor or zero otherwise. A poverty line of \$175 established by ZIMSTAT for the month of March 2019 was adopted in this study. Households with monthly per capita consumption below the TCPL of \$175 were classified as poor. Basic food and non-food items that were considered in this study were also adopted from ZIMSTAT (ZIMSTAT, 2013). However, some adjustments were made to suit the study area. Njeru (2004) notes that there are variations in diets, security and shelter among other basic needs due to diversity in culture, production modes and the degree of modernity and globalisation in the world. A list of basic food and non-food items adopted from ZIMSTAT (2013) used in this study is presented on appendix B.

Age of Household Head (*Age*)

This is a continuous variable which captures the age of the overall household decision maker. According to the neo-classical theory age is a determinant of marginal productivity of workers hence older persons tend to have lower marginal productivity than younger ones. This could be due to the higher depreciation of human capital, obsolescence of skills, diminishing physical strength and lower dexterity. Hence, older people have a high degree of being replaced in the labourforce (Davis & Sanchez-Martinez, 2014). Moreover, the nature of most rural household activities requires physical strength and as people become older they tend to become more vulnerable to poverty due to diminishing mental and physical capabilities (Maloma, 2016). Therefore, age of the household head is expected to have a positive relationship with poverty. Poverty determinants studies discussed in literature review confirmed this assertion (Borko, 2017 and Malik & Majeed, 2014).

Household Size (*Hhsize*)

This is a continuous variable which captures the number of people living in a household. A household in this context refers to all members who live together and share household consumption goods. Malthusian theory explains that if population

growth is kept unchecked in relationship to food supply growth poverty sets in. Further, if the household size increases, the farm household labour supply tends to increase. However, if the farm household labour supply continues to increase while other factors of production like land are not increasing, diminishing marginal returns to production sets in. This tends to decrease consumption prospects. Therefore, household size is expected to be positively associated with poverty. A number of empirical studies confirmed this assertion (Sakuhuni *et al.*, 2011, Manjengwa *et al.*, 2012, Pindiriri, 2015, Muhammedhussen, 2015 and Borko, 2017). Further, poor families tend to be characterized by high fertility rates (Todaro & Smith, 2012).

Education Level of the Household Head (*Educ*)

This variable is captured as continuous and is the highest number of years spent in acquiring education by the household head. Education is deemed an investment in human capital and it enhances an individual's capability. Therefore, the more the number of years spent in education by the household head the less likely the household being poor. Children from uneducated households might be constrained from getting education also. Hence, these families have limited chances to break from poverty due to limited capabilities, unless there is an external intervention. Maloma (2016) found that time spend in acquiring education has a negative relationship with poverty in South Africa. Therefore, the level of education of the household head is expected to be negatively related to poverty.

Sex of Household Head (*Sex*)

This is a dummy variable. It takes a value of 1 if the household head is male and zero otherwise. Generally, male headed households tend to be better off than female headed ones in Zimbabwe's rural areas. This is attributed to the tradition and culture that used to favour males on inheritance issues. Further, women have been discriminated in many activities thereby having fewer opportunities than men in education, employment and other activities. Results by some studies on poverty determinants supported the notion that female headed households are more likely being poor than male headed ones (Borko, 2017 and Pindiriri, 2015).

Household Dependency Ratio (*Dratio*)

It is computed by dividing the number of economically inactive members of the household by the number of economically active ones. This variable has an expected positive relationship with household poverty. The economically inactive group comprises members who are below 15 years and above 64 years and those who are chronically ill and or incapacitated who are between the ages 15 and 64. According to Drudgery Aversion theory, it can be implied that households with a bigger proportion of economically inactive members relative to active ones tend to be associated with poverty. These households have less supply of labour and hence, might not be able to produce enough for subsistence consumption. Borko (2017) confirmed that dependency ratio has a positive relationship with household poverty.

Employment Status of the Household Head (*EmpSt*)

Employment status of household head was sought for the past month. If the household head has been formally employed it was coded 1 or 0 otherwise. Being out of formal employment is viewed as source of poverty. Davis and Sanchez-Martinez (2014) notes that informal employment tends to be associated with discontinuous and short employment spells throughout lifetime. Therefore, individuals in the informal sector are more vulnerable to poverty sometimes due to irregular income inflows and they could not accumulate savings to sustain themselves above poverty line when out of employment. Being formally employed is therefore, expected to reduce the likelihood of a household being poor. Maloma (2016) found out that formal employment of household head had negative association with household poverty. In this study, households headed by household heads who are formally employed are expected to be less likely poor than households headed by heads who are not formally employed.

Marital Status of Household Head (*Mstat*)

This is a binary variable taking a value of 1 if the household is married or 0 otherwise. Households with married household heads are expected to be less likely being poor than households headed by unmarried people. According to social capital theory, networking increases social capital. Hence, it reduces the likelihood of a person being poor (Davis & Sanchez-Martinez, 2014). Accordingly, being married expands social networks and therefore increases the chances of getting out of poverty. Further, more than one parent families tend to be better off than single parent families because they share the responsibility of keeping up the household. Pindiriri (2015) discovered that the log of per capita consumption was higher

for married and employed household heads than unmarried and unemployed household heads. There was a significant consumption gain from marriage (Pindiriri, 2015). Therefore, in this study, households headed by married heads are less likely being poor than households headed by unmarried heads.

Land Size (*Lsize*)

Land size available for farming to the household was captured in hectares. It is expected to have a negative relationship with poverty. Rural households mostly engage in farming for their livelihoods. Therefore, arable land is an important factor of production for farm households. Marxist theories assert that society members who are discriminated from accessing some socially valued resources like land tend to be poor. Borko (2017) and Manjengwa *et al.* (2012) confirmed that farming land size had a significant negative influence on household poverty.

Number of Cattle (*Cattle*)

The number of cattle owned by the household was captured given their economic value to rural households. Cattle are an important asset for rural households. They are also a source of draught power and organic manure. Households with a large herd of cattle have less risk of becoming poor when they are hit by a negative shock than households with less or no cattle. Therefore, cattle herd size was expected to have a negative relationship with rural household poverty. Borko (2017) found out that the number of oxen owned by a household had a negative relationship with poverty.

Plough (*Plough*)

It is one of the major farming implements that are important in rural areas. It was captured as a categorical variable. A household that owned a plough was coded 1 and zero otherwise. ZIMSTAT (2013) considered plough as an important farming implement for rural households. Therefore, households that owned a plough were expected to be less likely poor than households which did not own plough.

Scotch Cart (*Scart*)

It was captured as a categorical variable. Household's ownership of scotch cart was coded 1 and zero otherwise. A scotch cart is another implement that was considered important for farming rural households ZIMSTAT (2013). Household's ownership of a scotch cart had an expected negative relationship with poverty. Neo-classical economic theory implies ownership of valuable assets cushions the household from negative shocks. Moreover, most rural households' main activity is farming. Hence, scotch cart has an important contribution to farm household output as it a capital stock into the household production function.

Access to food Aid (*Faid*)

Households that had been accessing food aid were coded 1 or zero otherwise. Marxist economic theory advocates for the allocation of resources to resource poor. Further, classical theory asserts that poor households remain trapped in poverty unless there is an external intervention. Hence, the access to food aid improves the chance of poor households being better off. Therefore, households that receive aid are expected to improve their farm household output because they would spend much time on own farm production. Therefore, they were expected to be less likely being poor.

4. RESEARCH METHODOLOGY

This study adopted the consumption approach to poverty that was used by Pindiriri (2015) and ZIMSTAT (2013). The list of basic food and non-food items considered when computing household consumption expenditure was developed from the one used by ZIMSTAT (2013) in its poverty profiling survey. The consumption expenditure of household basic needs for food and non-food items was computed to establish whether the household consumption expenditure was below the poverty line or otherwise. Household's own produced consumption items were assigned imputed cost. Ravallion (1998) argues that of great concern in the developing world is the absolute poverty more than subjective and relative poverty, hence this study focused on absolute poverty. Cross-sectional data was collected from randomly selected 150 households across 5 wards chosen at random in Nkayi district. Nkayi district has 30 wards which have similar geographical and socio-cultural characteristics. All wards in the district had household poverty prevalence greater than 80 per cent. Therefore, a simple random selection was used to choose 5 wards which are ward 4, 12, 15, 28 and 30. ZIMSTAT (2016) showed that these wards had a total number of households of about 2568. A sample of 30 households was then randomly selected from each ward. Only households that were willing to be interviewed were considered. When the target of 30 households was reached per ward, another ward would be considered. Roscoe (1975) states that sample sizes between 30 and 500 are appropriate

for most researches. Random sampling helps to avoid selection bias and a carefully selected sample yields reliable and representative results (Deaton, 1997).

Cross-sectional data was collected from households and questionnaire was used to collect data on household's socio-economic and demographic characteristics and its consumption expenditure. It was pre-tested before the survey was done. The questionnaires were administered through face to face interviews. Most questions were quantitative in nature. This enabled quantitative profiling of poverty where households with monthly per capita consumption expenditure below \$175 were classified as poor. Both closed and open questions were included in the questionnaire. Questions were short, simple and asked in Ndebele which is the local language to increase clarity and avoid consuming much time.

5. RESEARCH FINDINGS AND DISCUSSION

Descriptive Statistics

Descriptive statistics of poverty status variable is presented and discussed in this section. Data was collected from 150 households. It was found that 124 out of 150 households had per capita consumption expenditure below \$175. Hence, they were poor. Poverty prevalence was 83 per cent. This shows that poverty is still a challenge in Nkayi district. The following table shows the descriptive statistics for the continuous variables.

Table 4: Distribution of the Sample by Poverty Status and Continuous Variables

Variable	Poverty Status						Total Population		
	Non-Poor Households			Poor Households			Mean	SD	Freq
	Mean	SD	Freq	Mean	SD	Freq			
Educ	14	3.0354	26	10	2.2548	124	11	2.9694	150
Age	41	7.7887	26	54	14.7914	124	51	14.5785	150
Hhsize	5	2.0456	26	6	2.1366	124	6	2.1312	150
Dratio	63	54.5259	26	130	74.8571	124	118	75.9530	150
Cattle	13	7.0989	26	5	5.3836	124	6	6.5327	150
Lsize	3.35	2.0580	26	3.06	1.5811	124	3.11	1.6696	150

The table above shows that poor households on average have bigger household size, higher dependency ratio, fewer cattle and less hectares of land than non-poor households. Moreover, poor households are headed by household heads with less levels of education and older household heads than non-poor households, on average. These statistics confirm the implications of economic theories of poverty discussed in literature review that access to social capital like land and education and other resources like cattle negatively impact on poverty. These resources are important inputs of production function which might result in high output. Further, literature asserts that higher dependency ratio and bigger household size put pressure on household resources which might result in poverty.

Descriptive statistics for categorical variables are presented in the following table.

Table 5: Distribution of the Sample by Poverty Status and Categorical Variables

Variable		Poverty Status				Total Population	
		Non-Poor Households		Poor Households		Freq	Percentage
		Freq	Percentage	Freq	Percentage		
Sex	Female	8	17.02	39	82.98	47	100
	Male	18	17.48	85	82.52	103	100
Mstat	Unmarried	6	18.18	27	81.82	33	100
	Married	20	17.09	97	82.91	117	100
Faid	No Access	25	28.09	64	71.91	89	100
	Access	1	1.64	60	98.36	61	100
Scart	Not Own	11	13	74	87	85	100
	Own	15	23	50	77	65	100
EmpStat	Non-Formal	18	13.43	116	86.57	134	100
	Formal	8	50	8	50	16	100
Plough	Not Own	3	6.82	41	93.18	44	100
	Own	23	21.70	83	78.3	106	100

The table above shows that generally, poor households are headed by female household heads, and not formally employed heads. They also have access to food aid and do not own a scotch cart and plough. However, on marital status of the household head, the descriptive statistics do not paint a marked difference. This could be due to a small proportion of households headed by unmarried people. This might confirm that descriptive statistics usually do not explicitly show the exact causes of poverty. The descriptive statistics shows that all the dependent variables have an influence on poverty. However, the degree of their impact was established by regression analysis which is discussed in the next section.

4.2 Multicollinearity Test Results

Table 6: Correlation Matrix

	Age	Cattle	Lsize	Hhsize	Sex	Dratio	Educ	Faid	EmpSt
Age	1.0000								
Cattle	-0.0327	1.0000							
Lsize	-0.0123	0.0526	1.0000						
Hhsize	0.0731	-0.1038	0.3173	1.0000					
Sex	0.0206	0.0251	-0.0058	-0.0255	1.0000				
Dratio	0.1356	-0.2612	-0.1084	0.2831	0.0370	1.0000			
Educ	-0.3489	0.3358	-0.0167	-0.0096	-0.0704	-0.3666	1.0000		
Faid	0.2716	-0.3016	0.0497	0.1878	-0.0552	0.3332	-0.4082	1.0000	
EmpSt	-0.1161	0.0979	-0.0106	-0.0510	-0.0006	-0.0286	0.1554	-0.0223	1.0000
Mstat	0.1258	-0.1086	-0.0606	-0.0694	0.0229	0.2215	-0.0869	0.0138	-0.0250
Scart	-0.1747	0.2811	-0.0424	-0.0242	0.0172	-0.2252	0.3672	-0.2466	0.1754
Plough	0.0390	0.0137	-0.0969	0.0813	0.0383	-0.0013	0.0826	0.0266	0.0803

	Mstat	Scart	Plough
Mstat	1.0000		
Scart	-0.0444	1.0000	
Plough	-0.0240	-0.0412	1.0000

The table above shows that there was no problem of multicollinearity among the explanatory variables. All correlation statistics were below the absolute value of 0.8 indicating that there is no multicollinearity among independent variables.

Hosmer-Lemshow Test Results

The Hosmer-Lemeshow test was done to check if the model was correctly specified. The results show that the probability value is greater than 10 per cent in favour of the hypothesis that the model is correctly specified. Therefore, the model is suitable for estimating the variables and reliable and stable estimates are guaranteed. The Hosmer-Lemeshow results are shown on appendix D.

Estimation Results

This section presents and discusses the econometric model estimation results. The results are also shown on the appendix section. The logistic regression results are presented on table 4.4 overleaf. The results show the direction of relationship between the household poverty status and the explanatory variables. Age of the household head, the household size, the household dependency ratio and household's access to food aid had a positive relationship with poverty. The number of cattle owned by the household, the education level of the household head, sex of the household head, marital status of the household head, employment status of the household head, farm land size owned by the household, ownership of scotch cart and plough by the household had a negative relationship with poverty.

The size of the household's cattle herd, marital status of the household head, age of the household head, the education level of the household head, the household's ownership of scotch cart and the household dependency ratio were significant variables. However, household's farming land size, sex of the household head, the household size, employment of the household head, the household's access to food aid and ownership of a plough were insignificant variables.

Table 7: The Logistic Regression Results

Log likelihood = -15.041569		Number of obs = 150 LR chi2(12) = 108.26 Prob > chi2 = 0.0000 Pseudo R2 = 0.7825
PovStat	Coef.	p-value
Age	.2012173	0.041
Cattle	-.3131235	0.008
Lsize	-.6117849	0.133
Hsize	.2175242	0.417
Sex	-1.297008	0.386
Dratio	.0144112	0.104
Educ	-.4759696	0.061
Faid	3.302539	0.248
EmpSt	-3.062089	0.194
Mstat	-4.430256	0.021
Scart	-2.723669	0.039
Plough	-4.436946	0.136
Cons	9.543965	0.127

The Marginal Effects

The marginal effects were computed and interpreted because logistic regression results tend to overestimate the effect of the explanatory variable on the dependent variable. The marginal effects show the quantitative effect the determinant variable has on the dependent variable. The results are shown in table 8.

Table 8: Marginal Effects Results

Variable	dy/dx	P> z
Age	0.0061	0.019**
Cattle	-0.0096	0.000***
Lsize	-0.0187	0.108
Hhsize	0.0066	0.401
Sex	-0.0396	0.380
Dratio	0.0004	0.077*
Educ	-0.0145	0.035**
Faid	0.1009	0.242
EmpSt	-0.0935	0.182
Mstat	-0.1353	0.005***
Scart	-0.0832	0.012**
Plough	-0.1355	0.118

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The Age of household head (Age)

An increase in age of a household by one year increases the probability of the household being poor by 0.0061. Neo-classical theory notes that age is a determinant of marginal productivity of workers and as individuals get older their marginal productivities tend to decrease due to depreciation of human capital and physical strength (Davis & Sanchez-Martinez, 2014). Therefore, households headed by old aged people tend to become more vulnerable to poverty. As discussed in the literature review this assertion was confirmed by Borko (2017) and Malik & Majeed (2014).

Cattle owned by the household (Cattle)

An increase in the size of cattle herd owned by the household reduces the household's probability of being poor by 0.0096. Cattle are an important household asset in rural areas. They are a source of draught power, manure, milk and meat. Therefore, households with a bigger herd of cattle tend to be less likely poor than those with smaller or no cattle head. According to the Neo-classical theory, initial endowment in such valuable assets makes a household better off and reduces

the chance of being poor. Borko (2017) confirmed that the number of oxen owned by the household was negatively correlated with rural household poverty status.

Dependency Ratio (*Dratio*)

From the marginal effects results, an increase in the dependency ratio by 1 per cent increases the probability of a household being poor by 0.0004. Borko (2017) and Muhammedhussen (2014) study findings concurred that high dependency ratio makes a household more likely being poor. Where there is high dependency ratio means only a few household members are economically active. This might cause the household to produce less than the household consumption needs. Malthusian theory also supports the notion that rapid growth in population than food supply growth leads households into poverty. Households with high fertility rates tend to have more members under the economic inactive group and more likely being poor.

Education level of the household head (*Educ*)

A one year increase in education by the household head decreases the likelihood of the household being poor by 0.0145. The classical theories of poverty assert that poverty is a result of individual choices. Some individuals do not invest in human capital. Hence, they have low prospects on the job market due to limited skills. Further, a household head with many years spent in acquiring education tends to make better decisions concerning household activities. This enhances household welfare. Hence, reduces likelihood of a household being poor. Other studies discussed also found that education was a significant negative determinant of household poverty (Maloma, 2016; Sakuhuni et al., 2011).

Marital Status of Household head (*Mstat*)

The results showed that the likelihood of being poor for a household that is headed by a married household head was lower than that of a household with unmarried household heads by 0.1353. As discussed in the literature review, this assertion was confirmed by Pindiriri (2015). The social capital theory of poverty also confirmed the implication that when people get married they expand their social capital base. Therefore, they tend to be less likely being poor due to increased benefits from increased social network. Further, the neo-classical theory implies that married couples share the burden of household responsibility which can be a benefit of economies of scale.

Scotch cart (*Scart*)

The marginal effects results showed that the probability of being poor for a household that owns a scotch cart was lower than that of a household without a scotch cart by 0.0832. Neo-classical theory treats households as both producers and consumers who want to maximize output and utility respectively. Scotch cart is an important implement for rural farming household implements. Therefore, ownership of a scotch cart tends to contribute positively to the farm output. Hence, it reduces the likelihood of household being poor. Therefore, according to results, households that own a scotch cart have 0.0832 lower chance of being poor compared to households that do not own a scotch cart.

Other variables which comprise sex, employment status of household head, the number of hectares owned by the household, employment status of household head, had priori expected relationship with poverty though they were not statistically significant. Hence, they could not determine household poverty status in Nkayi district.

All other explanatory variables' relationship with the dependent variable was as per priori expectations with the exception of access to food aid. According to literature review, households that receive food aid were expected to be less likely poor as they would spend more time working on their farms than out of farms. Hence, more output and reduction in poverty. However, the results showed otherwise. This could be possibly that food aid can breed poverty by creating dependency syndrome.

6. CONCLUSIONS

- It was concluded that household poverty prevalence was high, at 83 per cent. All other explanatory variables in the poverty model with the exception of household's access to food aid had the priori expected relationship with the poverty status of household.
- The variables that were found to be significant are size of the household herd of cattle, marital status of the household head, age of the household head, education of the household head, household's ownership of scotch cart and household's dependency ratio.

- Poverty is still a challenge in rural Zimbabwe as depicted by the case study of Nkayi district. It can be concluded that households that own small or no cattle herd, headed by not married heads, do not own a scotch cart, have higher dependency ratio, are headed by older heads, and heads with less years of education are more likely being poor.

7. POLICY RECOMMENDATIONS

- Policies that aim at reducing rural household poverty can be designed basing on this study's results. From the study results it can be implied that it is not the household size that matters in causing poverty but rather composition and quality of household members. So, poverty interventions should target households with higher dependency ratio than just big household size. Education proved to be an important factor when it comes to poverty issues. Less investment in education causes individuals and households to be trapped in poverty. Therefore, programs that promote the culture of learning should be promoted by policy makers.
- Given the importance of cattle and scotch cart to rural households and their impact on household consumption and poverty, it is therefore, recommended that policy makers should take into account these factors when targeting rural poor for intervention. Programmes that build cattle herd for rural households and farm implements like scotch cart should be promoted. Examples include credit schemes for cattle like the command livestock by the GOZ. These schemes should be mainly targeted to the poor households to empower them such that they would be able to break the poverty trap.
- Generally, households headed by married people tend to benefit from shared ideas in household decision making concerning household livelihoods and consumption compared to households headed by unmarried people. Moreover, it is revealed that households headed by old aged people are more likely being poor than those headed by young aged people. Rural poverty interventions should be biased towards poor households headed by old aged and unmarried people. However, care should be taken not to marginalize the rest of the families in the rural areas such as female headed and child headed households. Otherwise, this may create inequality and further worsen poverty in rural areas. This would help in reducing the level of poverty in the country and all these policy suggestions might help the GOZ in achieving the SDG 1 and the vision 2030.
- Poverty is a challenge in developing countries and is more prevalent in rural areas. This study was limited to socioeconomic and demographic determinants of rural household poverty and focused on a small area due to financial constraints. Rural areas in Zimbabwe have different social capital and agro-ecological conditions whose impact on both microeconomic and macroeconomic levels need to be investigated using a similar approach used in this study or to adopt a different methodology. Institutional and poverty is another area that needs to be studied in order to have a deep and wide knowledge on the causes of poverty. Moreover, a similar study can be done focusing on urban areas given that urban areas have different socio-economic and demographic characteristics from rural areas. Addressing these research gaps might help in coming up with an arsenal for poverty combat and help in achieving the SDG 1 and Zimbabwe agenda 2030 of ending poverty in its all forms and attaining a middle class economy, respectively.

REFERENCES

- [1] Binam, J.N., Oduol, J., Olarinde, L., Diagne, A. and Adekunle, A. (2011). Determinants and Prevalence of Rural Poverty in West, East and Southern African Countries. *Modern Economy* (2), 308-323.
- [2] Borko, Z. P. (2017). Determinants of Poverty in Rural Households: The Case of Darmot District in Ethiopia. *International Journal of African and Asian Studies* (29), 2017.
- [3] Blair, J. and Czaja, R. (2005). *Designing Surveys: A Guide to Decisions and Procedures*. Sage Publications, London, UK.
- [4] Blank, R. (2010). Selecting Among Anti-poverty Policies: Can an economist be both critical and caring? *Review of social economy* 61(4), 447-469.
- [5] Davis, P.E. and Sanchez-Martinez, M. (2014). *A Review of Economic Theories of Poverty*. National Institute of Economic and Social Research, London, UK.
- [6] Deaton, A. (1997). *The Analysis of Household Surveys: Microeconomic Approach to Development Policy*. Baltimore and London: The John Hopkins University Press, World Bank.

- [7] Foster, J., Greer, J and Thorbecke, E. (1984). A Class of Decomposable Measures. *Econometrica* 52(3):327-346.
- [8] Greene, W. H. (2012). *Econometric Analysis*, Seventh edition, New York House, USA.
- [9] Hentschel, J. and Lanjouw, J. O. (1996). Constructing an Indicator of Consumption for the Analysis of Poverty. World Bank Living Standard Measurement Study 124. Washington D.C.
- [10] Manjengwa, J., Kasiye, I. and Matema, C. (2012). Understanding Poverty in Zimbabwe: A Sample Survey in 16 Districts, Paper presented at the Centre for study the Study African Economies Conference, Oxford, UK.
- [11] Majeed, T.M., and Malik, M.N. (2014). Determinants of Household Poverty: Empirical Evidence from Pakistan. MPRA, Quad-i-Azam University, Islamabad, Pakistan.
- [12] Maloma, I. (2016). The Socio-Economic Determinants of Household Poverty Status in a Low Income Settlement in South Africa. *International Journal of Social Sciences and Humanity Studies* (8), 2.
- [13] MoFED. (2016). Zimbabwe Interim Poverty Reduction Strategy Paper (I-PRSP) 2016-2018, MoFED, Zimbabwe.
- [14] Muhammedhussen, M. (2015). Determinants of Rural Income Poverty in Ethiopia: Case Study of Villages in Dodola District. *Global Journal of Management and Business Research* (15).
- [15] Njeru, E.N. (2004). Bringing the Qualitative-Quantitative Methods in Poverty Analysis. *Qualitative-Quantitative Methods* (pp 22-35). Nairobi: Kenya Institute of Public Policy Research and Analysis (KIPPRA).
- [16] Pindiriri, C. (2015). Modeling Determinants of Poverty in Zimbabwe, AGRODEP modeling consortium, IFPRI.
- [17] Putin, R.D. (2000). *Bowling Alone: The Collapse and Revival of the American Community*. Simon and Schuster, New York.
- [18] Rocha, S. (1998). On Statistical Mapping of Poverty: Social Reality, Concepts and Measurement, Background Paper for the Expert Group Meeting on Poverty Statistics, Santiago, Chile.
- [19] Roscoe, J.T. (1975). *Fundamental Research Statistics for Behavioural Sciences*, (second edition), Holt Rinehart and Winston, New York.
- [20] Sakuhuni, R.C., Chidoko, C., Dhoro, N.L. and Gwaendepi, C. (2011). Economic Determinants of Poverty in Zimbabwe. *International Journal of Economic Research* 2(6):1-12.
- [21] Todaro, M. P. and Smith, S.C. (2012). *Economic Development*. Adson Wesley, New York.
- [22] UNDP. (2018). *Aligning with the Sustainable Development Goals*. The New Global MPI, UNDP.
- [23] World Bank. (2018). *Poverty and Equity Brief*. Sub-Saharan Africa, World Bank, Zimbabwe.
- [24] World Bank. (2005). *Understanding the Determinants of Poverty*. In *Poverty Manual* (pp. 124-136). New York: World Bank.
- [25] ZIMSTAT. (2019). *Price Statistics in Zimbabwe, Poverty Datum Lines*. ZIMSTAT, Harare, Zimbabwe.
- [26] ZIMSTAT (2016). *The Zimbabwe Food Poverty Atlas: Small Area Food Poverty Estimation*. ZIMSTAT, Harare, Zimbabwe.
- [27] ZIMSTAT. (2015). *Zimbabwe Poverty Atlas: Small Area Poverty Estimation*, ZIMSTAT, Harare, Zimbabwe.
- [28] ZIMSTAT. (2014). *Zimbabwe Labour Force Survey*. ZIMSTAT, Harare, Zimbabwe.
- [29] ZIMSTAT. (2013). *Poverty and Poverty Datum Line Analysis in Zimbabwe 2011/12*. ZIMSTAT, Harare. Zimbabwe.