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Micro Economic Factors on Poverty in Rwanda: A Case Study of Gicumbi District

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Abstract: **Poverty is a multidimensional phenomenon characterized by lack of basic needs necessary for a human being to live in society without shame and having voice in the community. Though the government of Rwanda has been implement short term program to reduce poverty, Poverty is still a challenge. In Northern Province of Rwanda, Gicumbi district is the most vulnerable.**

The purpose of this study was to assess the micro economic factors on poverty in Rwanda, The results was based on cross tabulation, multiple linear regression model and multinomial logistic model where targets population was 86075 households of Gicumbi district to whom a sample of 398 households was selected then semi structured questionnaires was used to collect both qualitative and quantitative data from the field, data were entered in SPSS and then data analysis was done by using STATA, It is hoped that the findings had help the government of Rwanda to understand all dimensions of poverty and it possible causes in order to draw new development policies.

The results show that poverty level is strongly associated with educational level, type of employment, dependency ratio, household size, age of household head, type of residence, and number of livestock. House holdings and age of household head are found to be uncorrelated with poverty.

Keywords: **Poverty, Demographic factors, Social economic factors.**

I. INTRODUCTION

Sustainable development Goal 1 calls for an end to poverty in all its manifestations, including extreme poverty, over the next 15 years. All people everywhere, including the poorest and most vulnerable, should enjoy a basic standard of living and social protection benefits (UN, 2016).

The proportion of the global population living below the extreme poverty line dropped by half between 2002 and 2012, from 26 to 13 per cent. This translated to one in eight people worldwide living in extreme poverty in 2012.

Poverty has reduced from 44.9% in 2011 to 39.1% in 2014 and extreme poverty from 24.1% to 16.3% (EICV, 2013/2014)

Through its vision 2020, the Government of Rwanda is struggling to move from humanitarian assistance phase into a middle income country. Short term strategies have been put forward as measures to reduce poverty

(EICV, Rwanda Poverty Profile Report, 2010/2011) Shows that in Gicumbi district, 50.7% of the population is identified as non-poor, 15.4% as poor and 33.9% as extremely poor. While (EICV, 2013/2014) shows that Gicumbi the poorest district in Northern province of Rwanda and it is the second poorest district in Rwanda with 55.3% poverty incidence and 24.7% extreme poverty incidence. However, for an intervention to be successful, it needs to focus on key indicators of a given problem of challenge.

The objectives of the study were to assess micro economic factors of poverty in Rwanda and the specify objectives of the study were: to examine demographic factors of poverty in Gicumbi district, to examine social economic factors on

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poverty in Gicumbi district, to evaluate government policy on poverty in Gicumbi district and to assess relationship between microeconomic factors and poverty in Gicumbi district.

the research used primary data. chapter 2 summarizes the literature review. In chapter 3 discusses the methodology; chapter 4 we plan the basic model we contend that it is necessary to apply linear regression and multinomial model. Section 5 presents the results and findings and conclusion.

II. LITERATURE REVIEW

(Marshall Alfred, 1961)Neoclassical theories are more wide ranging and recognise reasons for poverty beyond individuals' control. These include lack of social as well as private assets; market failures that exclude the poor from credit markets and cause certain adverse choices to be rational; barriers to education; poor health and advanced age; and barriers to employment for lone-parent families. The main advantages of this neoclassical reside in the use of quantifiable monetary units to measure poverty and the readiness with which Policy prescriptions can be put into practice. They also highlight the influence of incentives on individual behaviour as well as the relationship between productivity and income.

These approaches highlights their overemphasis on the individual (without, for instance, taking into account links with the community) and the focus on purely material means to eradicate poverty (Jung, S. Y., and Smith, R., 2007).

poverty was defined by Usman as "hunger, lack of shelter, being sick and not being able to see a doctor, not having access to school and not knowing how to read, jobless, fear for the future, living one day at a time. Poverty is also losing a child to illness brought about by unclean water. Poverty is powerlessness, lack of representation and freedom" (Mubasher, 2009).

2.1. Conceptual Framework:

The conceptual framework is a systematic structure which reflects the relationship between the independent variable and the dependent variables through their sub-variables

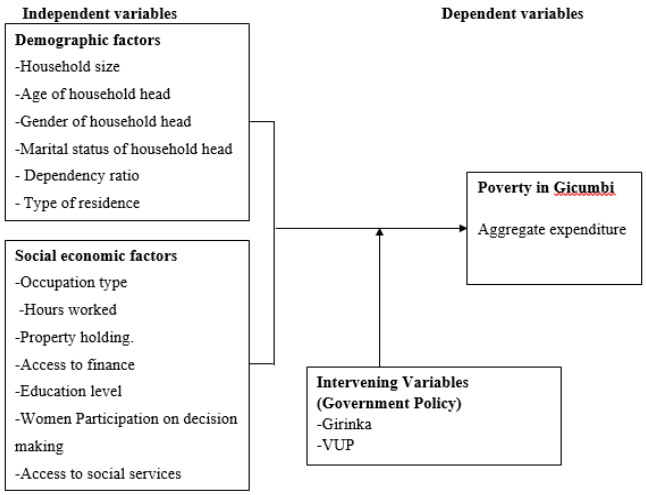

Figure 2.1 Conceptual framework

Tilman et al., (2007) conduct a research on the micro economic indicators of household welfare, by using cross tabulation he founded that poverty accounts for household composition such as household size, shares of different age and gender groups as main indicators of poverty. The reason is that poor people tend to live in large households and then, countries with high fertility rates tend to be poor as well(Livi-Bacci and Massiomo, 2004).Sometimes the poor live in young households having many children under age 15 than richer family while better off households tend to have heads that are somewhat older (World Bank, 2005).

Luwero, (2007) carried out a regional analysis of the poverty status of households in Uganda in terms of their socioeconomic and demographic characteristics and other critical factors that drive poverty. This was aimed at enhancing the understanding of the determinants of regional poverty differentials and how best to target poverty alleviation programs.

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Using total expenditure as a measure of welfare and a poverty line of US$110, some 55% of Ugandans were defined as "poor". The poor are disproportionately found in the rural areas: 57% compared with about 38% in urban areas. The discrepancy between rural and urban levels of poverty is even worse using the core poor poverty line, where 96% of the core poor lives in rural areas.

III. RESEARCH METHODOLOGY

This research study is a descriptive research using survey method. The survey method of this research used questionnaires distribution to the respondents in order to collected primary data. The sample size of the survey is 398 households from 86075 households of Gicumbi district (NISR, 2012) where sample was taken by using Solvin's (Thomas.P.R, 1985) f as follow:

$$n = \frac{N}{1 + Ne^2}$$

with : n = the minimum sample size N = the population from which the sample was obtained , e = the margin of error estimated at 5%.

$$n = \frac{86075}{1 + 86075 * 0.05 * 0.05} = 398$$

IV. RESEARCH FINDING

Demographic factors of poverty in Gicumbi district:

Table 4.1

Variables	Categories	Frequency	Percentage
Sex of head of	Male	304	76.38%
household	Female	94	23.62%
Marital status of	Single	13	3.27%
household head	Married	295	74.12%
	Living together	5	1.26%
	Divorced/Separated	8	2.01%
	Widow/Widower	77	19.35%
Residence	Urban	39	9.80%
	Rural	359	90.20%

The analysis showed that 76.38% of households were headed by male, three quarter of households' head were married and 80.2% lived in rural area.

Table 4.2 Association between the dependent and demographic factors of poverty

	Value	df	Asymp. Sig. (2-sided)
Gender	9.786[a]	2	.0248
Marital status	6.819[a]	8	.000
Residence	32.651a	2	.000
N of Valid Cases	398		
a. 0 cells (0.0%) have expected count less than 5.			

The results indicate that there was association between poverty status and the following demographic predictor variables: Gender, Residence and Marital Status of household head at 5% level of significance all variables are significant (p-values<0.05).

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After regression, the model was as follows:

$$\log(y/z) = -0.20 - 0.03size + 4*10^{-5}age + 0.26gender - 0.17status + 0.04dependancy + 0.27residence + \varepsilon$$
(equation 1)

With : y: Aggregate expenditure, Z: poverty line , Size: household size which means total number of household members ,Age: Age of household head , Status: Marital status of household head, Residence: residence of a household ,Dependency: dependency ratio , ε : Error term

The model shows that all demographic factors were positively contribute to expenditure of a household, and they are significant except age of household head as p-value was greater than 5% which was the critical value.

Result from Multinomial logistic models for demographic factors:

Table 4.3 Multinomial Logistic regression coefficient of poverty status by demographic factors:

Poverty status		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Extreme poor	Intercept	-5.472	1.460	14.054	1	.000			
	Age	.006	.011	.307	1	.579	1.006	.985	1.027
	dependency	.204	.076	17.47	1	.008	1.226	1.056	1.423
	Nhhm	-.376	.140	7.243	1	.007	.687	.522	.903
	Female	1.324	.674	13.88	1	.049	3.759	1.003	14.092
	Male	0[b]	.	.	0	.	.	.	.
	Rural	3.263	1.042	9.798	1	.002	26.121	3.387	201.483
	Urban	0[b]	.	.	0	.	.	.	.
Poor	Intercept	-2.967	.948	9.804	1	.002			
	Age	.020	.009	5.584	1	.018	1.020	1.003	1.038
	dependency	.030	.067	10.21	1	.006	1.031	.903	1.176
	Nhhm	-.112	.106	1.119	1	.290	.894	.727	1.100
	Female	.034	.570	10.04	1	.002	.966	.316	2.951
	Male	0[b]	.	.	0	.	.	.	.
	Rural	1.874	.463	16.396	1	.000	6.511	2.629	16.126
	Urban	0[b]	.	.	0	.	.	.	.
a. The reference category is: Non poor.									
b. This parameter is set to zero because it is redundant.									

The multinomial regression model gives the coefficients (β_i), their standard error, and odds ratio at 95% CI for the two models. The results of the second model (poor) are somehow tends to be similar with first model (extreme poor) as the poverty line used to distinguish extremely poor and poor households are not differing very much. Thus, both two models show the similar patterns of correlation with poverty on all explanatory variables. In the following, we therefore restrict our attention to the first model. In table 4.8, findings indicated gender differences in the poverty level, notably household headed by female are 3.759 times more likely to fall into extreme poverty compared to those headed by male while household headed by female are .966 times more likely to fall into poor compared to those headed by male , the results also showed that rural households are more likely to be extreme poor than their counterpart living in the urban, which means rural households are 26.121times more probably to be extreme poor than people in urban areas while rural households are 6.511times more probably to be poor than people in urban areas.

The analysis shows that as the age of household head increase, there are 1.006 times probably to fall in extreme poverty while as the age increase there are 1.020 probably for household to be in poverty furthermore, as dependency increase, there is an increase of 1.226 times probably for a family to be in extreme poor while as dependency increase a household are 1.031more likely to be in poor.

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Social Economic factors of poverty:

Table 4.4

Variables	Categories	Frequency	Percentage
Poverty status	Extremely poor	100	25.13%
	Poor	147	36.93%
	Non-poor	151	37.94%
Ubudehe category	Category 1	15	3.77%
	Category 2	145	36.43%
	Category 3	220	55.28%
	Category 4	18	4.52%
Bank account	Yes	132	42.17%
	No	181	57.83%
Small saving group	Yes	284	90.73%
	No	29	9.27%
Education level	Illiterate	129	32.41%
	Primary	205	51.51%
	Secondary	30	7.54%
	Vocational	8	2.01%
	Undergraduate and above	26	6.53%
Occupation of	Agriculture	338	84.92%
household head	Business	29	7.29%
	Temporary job	14	3.52%
	Permanent job	12	3.02%
	Other job	5	1.26%
Women participation in decision making	Low	8	2.07%
	Medium	123	31.78%
	High	160	41.34%
	Very high	96	24.81%
Electricity	Yes	13	3.27%
	No		96.73%
Ownership of land	Own land	392	98.49%
by household	No land	6	1.51%
Ownership of livestock by household	No livestock	288	72.36%
	Own livestock	110	27.64%
House	Yes	378	94.97%
	No	20	5.0%
Access to loan	Yes	242	60.80%
	No	156	39.20%
Total case		**398**	**100.0%**

The results reveals that 42.17% of households had bank accounts, 90.7% were member of small saving group and a half of household head had completed primary education, 60.8% of households, had access to loan to finance their project, 41.34% of women had highly participate in decision making. Above 94% of households had electricity, house and land as well.

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Table 4.5 Association between the dependent and social economic variables

	Pearson X^2	Df	Significance.
Poverty*education	145.4971	8	0.000
Poverty*occupation	18.4121	8	0.039
Poverty*health insurance	16.8598	2	0.032
Poverty*land ownership	16.0355	2	0.049
Poverty*electricity	13.1789	2	0.020
Poverty*House	1.1896	2	0.552
Poverty*Saving group	12.0032	2	0.037
Poverty*bank account	14.3947	2	0.001
Poverty*Woman participation	19.5892	6	0.014

The results indicate that there is association between poverty status and the following social economic factors: education, occupation, health insurance, land, electricity, small saving group, bank account and women participation in decision making. It was shown in the above table as at 5% of significance all variables are significant (p-values<0.05) on other hand having a house had no association with poverty status of a household in the study area.

Government policy on poverty in Gicumbi district:

Table 4.6 Government policy on poverty in Gicumbi district

Variables	Categories	Frequency	Percentage
VUP	Yes	55	13.82%
	No	343	86.18%
VUP Program	Direct support	4	18.18%
	Public work only	16	72.73%
	Public work and Financial service	2	9.09%
VUP Effect	Very low	129	32.41%
	Low	214	53.77%
	Medium	17	4.27%
	High	16	4.02%
	Very high	22	5.53%
Girinka	Yes	73	18.34%
	No	325	81.66%

Table 4.6 shows that the minority of respondents had benefited from VUP (in vision umurenge program) whereby the majority of them had benefited public work, Girinka(one cow per poor family) is one of government policy to end poverty and its manifestation in all domain furthermore about one out of five households had received girinka whereby the later declare that Girinka had a very high effect on their well-being.

VI. CONCLUSION AND RECOMMENDATION

Conclusion:

Different findings from our models are identified. The reference categories for various factors helped to identify some important demographic and socioeconomic correlates of poverty. The education level, occupation, hours of work, age of the household head, gender, marital status, household size, dependency ratio, ownership of livestock, type of residence, province are found to be important factors influencing poverty. While the ownership of land and seasonal works are found to be not correlated with poverty.

We found that education reduce dramatically the probability of poverty. Notably, households' head that attained university education had less rate of poverty and this is consistent with studies carried out in Kenya (Thomas et al., 2010). Sometimes educated household's heads have better job offer good pay and access to new technologies, and earn more income which is the primary factor reducing poverty.

Household size, dependent ratio, sex, and the age of the head of household play a big role in determining poverty of the household. The expenditure of large families is high and income required to escape poverty will also be high. Women are poor than men. The reason may be that generally women are not employed and if they are employed they earn low salaries than men. Even if the earnings are the same; Women tend to be in poverty by virtue supporting children than men (Karen Christopher et.al, 2000). Normally children raise the needed income to escape poverty. And marital status has an effect on poverty level, polygamist and living are poor than monogamously married, and single households.

Furthermore, the livestock is also a very important determinant of poverty in Rwanda while land did not show a reduction effect on poverty. This may be explained by the fact that landless people are usually residing in urban and most of them are the ones who have high education with good jobs which offer more income while the most of households who own parcels are having smaller and unproductive land which increase the risk of falling in poverty and hunger.

Recommendation:

Over last decade, government of Rwanda has made a significant progress in reducing poverty through its policy. Although, Gicumbi still very fall behind in eradicating extreme poverty, to resolve the problem of poverty, we suggested the combination of five actions listed as follows:

The government of Rwanda should eradicate poverty in rural areas by creation of new employment opportunities and equal redistribution of economic activities.

Building up the human capital of the poor people.

Increase the number of people who receive Girinka as it contributes significantly to poverty reduction in the study area

To encourage household about increasing saving culture especially saving on bank account and also to pay health insurance for all household members.

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