



Comparative analysis of monetary and non-monetary poverty in rural households in the DRC (case of villages located on the Kisangani-Yangambi road)

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Summary

The aim of this study was to compare the monetary and non-monetary poverty of rural households using the F-G-T and WHO approaches in rural areas of the DRC. The villages on the Kisangani-Yangambi road were included.

After our investigations, the results were as follows:

For monetary poverty, 89.2% of households are in a situation of poverty, but for non-monetary poverty, only 68.3% are in this situation.

For the depth of poverty, the F-G-T approach gives 29.6% and the WHO approach 35.6%;

As for the severity of poverty, the F-G-T approach gives 16.2% and the WHO approach 32.7%.

Relation between poverty and the socio-demographic profile of the households surveyed, the results of the Chi-square dependency test reveal that poverty is related to household size, level of education of the heads of households and main activity. Furthermore, the Cramer V coefficients calculated show that this link is strong (0.180V0.360) between poverty and some socio-demographic profile parameters, including household size and the level of education of the heads of households, and weak (0.045V0.090) with the main activity of the heads of households. However, this poverty is not a function of the gender and marital status of the heads of household and the Cramer V coefficients calculated show that this link is weak (0.045V0.090) for the gender of the heads of household and average (0.090V0.180) for the marital status of the heads of household.

Keywords: Analysis, comparative, monetary poverty, non-monetary poverty, rural households.

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I. INTRODUCTION

The Democratic Republic of Congo (DRC) is one of the world's low-income countries, with a significant number of households living in food insecurity. With a high poverty rate of 71.3%, 87.7% live on less than \$1.25 a day per person. The level of the Millennium Development Goals indicators remains worse in the DRC than in the other major poor countries of sub-Saharan Africa. For example, the rate of food insecurity and poverty is twice as high in rural areas (39%) as in urban areas (19%) (Mushagalusa, 2015).

The isolation of production areas deprives people of access to trade, and the distances separating rural areas from urban consumption centres become the operating environment for a multitude of intermediaries whose structure, behaviour and performance in terms of information management and market power, access to market services, transaction costs and margins reduce producers' profitability (Mastaki, 2006).

For more than half a century, the world's attention has been focused on a scourge that affects billions of people around the globe: poverty. Whether you are a sociologist, demographer, doctor or economist, it has now become unthinkable to ignore it or fail to mention it in your reflections or studies (Nganda, 2011).

Generally speaking, when addressing the issue of poverty, the great temptation is to categorise the poor in order to count them, study how they live and analyse how their situation changes over time. Economists and statisticians have devoted countless studies to measuring poverty and attempting to determine the supposedly most appropriate methods for doing so (Paugam and Selz, 2005). On the other hand, research into the social representations of poverty is rarer. By social representation of poverty, we mean the meaning that individuals give to this phenomenon as a function of their experiences and circumstances (Bolakonga, 2013).

Countless analyses, research, studies, measures and tools have been developed to solve this problem. But the elimination of poverty remains an unresolved issue, as various measures to combat it have been taken with different results. So for a poverty analysis, we need to take into account a large number of dimensions of poverty, reflected by different characteristics, while targeting individuals or households living in a precarious situation. These problems are real diseases for a country, which is why all governments are committed to fighting this scourge (Andrianarivao, 2013). Poverty in the Democratic Republic of Congo (DRC) has many facets, including low income, unsatisfied food needs, difficulty of access to healthcare, schooling, decent housing, drinking water, etc. (Mokili, 2019).

Poverty affects seven out of ten households in rural areas in the DRC (DRC Ministry of Planning 2013).

Of all the existing theories of poverty, a good government must choose the one that gives the best results; in other words, the one that best assesses the situation of its population. However, this choice is far from easy. One of the reasons for this is that it is difficult to have an adequate theory of poverty for a society and, consequently, a good policy is to find an approach to assessing poverty that emerges from the reality of the community concerned.

The theory of poverty is of great importance; it is thanks to it that the evaluation of policies to combat poverty can be carried out. It is therefore imperative to find a theory with analytical tools that correctly assess rural values and preferences in order to design a development plan for rural communities in our country. There are therefore several theories of poverty and several ways of assessing it. However, as part of our research, we compared two poverty assessment approaches, Foster-Greer-Thorbecke and OMS, to assess their effectiveness in rural Congo. We assessed poverty on the basis of household income and anthropometric data.

II. METHODOLOGICAL APPROACH

To achieve the objectives assigned to this study, i.e. to collect, process and analyse the relevance of poverty indicators, a well-developed methodology is required. This section deals with the determination of the samples, the specification of the variables to be analysed and the data analysis models.

Presentation of the study environment

The villages on the Kisangani-Yangambi road represent our research site. They are located in the Territory of Isangi in the Turumbu sector, which includes 4 groups (Yawenda, Yelongo, Yambawu and Weko). The total area of the Turumbu sector is 3674 km², with 55 villages and an estimated population of 83,251. The villages selected for our research on the Kisangani-Yangambi road are located in the two most densely populated groupings in the sector (Yawenda and Yelongo).

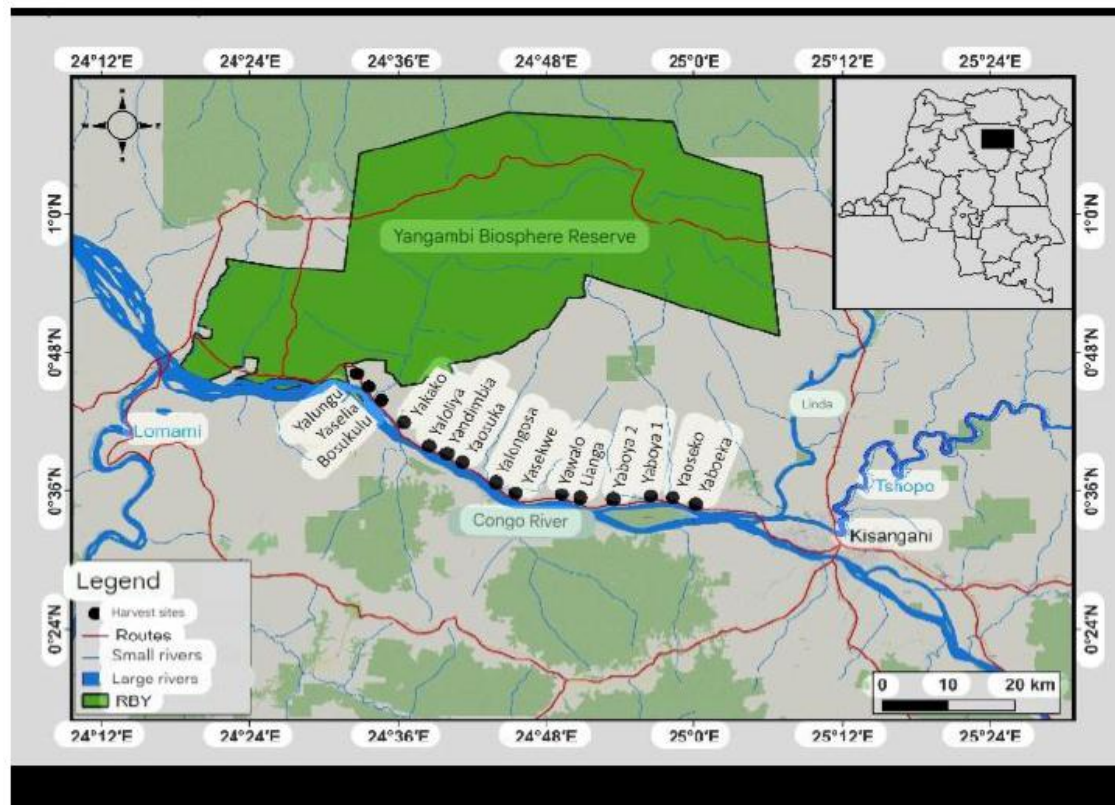
Yawenda has a total of 31 villages with an estimated population of 52100 inhabitants and Yalongo has a total of 10 villages with a population of approximately 20819 inhabitants.

The general climate of Isangi Territory is characterised by annual rainfall of between 1,800 mm and 2,000 mm, with two rainy seasons running from mid-March to June and from mid-August to mid-December. The average temperature is 24°C, with a maximum of 30°C and a minimum of 21°C. The absolute minimum temperature recorded is 18°C (CAID, 2017).

Secteur Turumbu in the Territory of Isangi is located in the agro-ecological zone of the central Congolese basin, characterised by an average altitude of between 200 and 500 metres above sea level. It has a dense hydrographic network dominated by the Congo and Lomami rivers. These waterways enable a large proportion of production to be transported to the centres of consumption.

The main soil groups found in Isangi Territory are Ferralsols and Ferrisols on undifferentiated rock, Yangambi-type plateau Ferralsols, Salonga-type arreno-ferralsols on sand and recent tropical soils. The latter, as well as the ferralsols, have average agricultural suitability.

The regeneration capacity of cultivated soils is largely handicapped by the reduction in fallow periods and the rapid degradation of organic matter under local climatic conditions (high temperature and humidity) (Mokili, 2014).



Sampling

There are several sampling methods, the most commonly used in data collection being probabilistic and non-probabilistic methods. With probabilistic methods, the sample is extracted from the parent population at random according to a few rules. As for the non-probabilistic methods used in this research, the key element lies in the "reasoned choice" where, in order to collect data, we limit ourselves to a few characteristics on a small number of cases.

In the context of our research, the parent population is made up solely of rural households with children aged between 6 and 59 months in the Democratic Republic of Congo in the Province of Tshopo (formerly the District of Tshopo) in villages located on the Kisangani-Yangambi road. This choice was motivated by the fact that several poverty reduction projects have been carried out on this road, including the Prapo and Pradat projects. A sample of 102 households in 15 villages was taken.

For monetary poverty, we collected data on household income: gross agricultural household income, net agricultural income, total agricultural expenses, quantities of agricultural products, prices of agricultural products, self-consumption value of agricultural products, income from products other than agricultural products, livestock and fishing.

For non-income poverty, we collected anthropometric data from children aged 6 to 59 months: age, height, weight and MUAC (measurement of the thickness of subcutaneous muscle and fat tissue in the biceps).

Statistical analysis

To decide or assess whether the indicators selected in this study had an impact on poverty in the study area, we used statistical analyses. Of these analyses, we first carried out a univariate analysis of the qualitative and quantitative variables (mean and standard deviation). Next, a bivariate analysis was carried out to assess the level of relationships and links established between pairs of quantitative and qualitative variables (Student's t-test or Mann Whitney test and Chi-square) and (Cramer's V coefficient). The non-parametric Mann Whitney test would have been used if the conditions for using the parametric Student's t test were not met, i.e. :

Normal distribution:

Equality of variances: $\sigma_1 = \sigma_2$

Chi-square test

The Chi-square test is used to test the relationship between two qualitative variables. For the Chi-square test, if the p-value is greater than 0.05 the data are independent, otherwise they are dependent.

Cramer's V coefficient was used to test the relationship between two qualitative variables. If the Cramer V coefficient varies between 0.000 and 0.045, i.e. the link is very weak, between 0.045 and 0.090 the link is weak,

between 0.090 and 0.180 the link is medium, between 0.180 and 0.360 the link is strong, and finally between 0.360 and 1 the link is very strong.

The SPSS, R and ENA for OMS software packages were used respectively for data entry, processing and statistical analysis of our socio-economic and nutritional (anthropometric) data.

The data were analysed at the 5% significance level (0.05). Nevertheless, we also attempted to observe other levels of significance:

p < 0.05: statistically significant difference, noted as "*" ;

p < 0.01: statistically very significant difference, marked "***";

p < 0.001: statistically highly significant difference, denoted "****";

p ≥ 0.05: no statistically significant difference, noted "#". With the value (p) is the critical probability value (Mokili, 2019).

Approaches to poverty

Foster-Greer-Thorbecke approach

This is one of the most important approaches to poverty, widely used in empirical work and owing its popularity mainly to its simplicity (Moumami, 2010). It is for this reason that we have chosen this index to analyse poverty. Its formula is as follows

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

Where

N: number of individuals

H: number of poor people.

Z: poverty line y_i: household expenditure (income) α: aversion index (α = 0, 1, 2)

There are three possible cases depending on the value of α.

If α = 0, we have FGT where P₀ is the incidence or rate of poverty. This index measures the proportion of the population with a level of expenditure (or income) below the poverty line.

If α = 1, we have the index P1, called the depth of poverty. This index measures the average gap between the poor and the poverty line.

If α = 2, we have P2, the poverty severity index. P2 measures the intensity of poverty among the poor themselves.

The poverty line is the absolute level of income set by government and other research institutions below which an individual is considered to be poor. In Europe, this threshold represents 60% of a country's median income. It is defined as the possession of one Congolese franc or dollar for daily expenditure.

WHO approach

Non-monetary poverty line based on anthropometric data for children aged 6 to 59 months.

When asked about their views on poverty, almost all the households surveyed identified poverty with a lack of food. As part of this study, we determined a poverty line based on the anthropometric index, specifically the nutritional status (underweight) of children aged 6 to 59 months, which reflects both the effects of the child's present and past.

Based on the criteria below, we assess extreme household poverty:

- If the average z-score is greater than -2σ, the household is not in extreme poverty;
- If the average z-score is equal to -2σ, the household is at the poverty line (Mbaye, 2010).

To avoid tedious exercises in calculating and analysing anthropometric data for children aged 6 to 59 months, current technology means that the World Health Organisation's (WHO) ENA software is used to find the value of -z score.

In order to measure poverty indicators in rural areas, it is essential to be familiar with the variables defining the FGT and WHO approaches to poverty so that comparisons can be made.

III. RESULTS

Household income

Table 1 below shows the income of the rural households surveyed.

Table 1 Income of rural households surveyed

	Household size	Household income in USD per year	Income per individual in USD per day
Sum	951	72385	90,4
Average	9	2729	0,9
Standard deviation	3	542	0,3

Source: Our calculations

Table 1 above shows an average household size of 9 people, with a variation of plus or minus 3 people. The average annual income per household is USD 2729, with a variation of plus or minus USD 542, which means that per day, the income per individual in a household is USD 0.9, with a variation of plus or minus USD 0.3.

It can be seen from these results that, according to the UNDP standard, "a person is considered poor if his or her minimum daily income is below \$1.25" (UNDP, 2015). From the above, we can say that, on average, the households surveyed are in a situation of poverty.

Main household income allocations

Figure 2 below shows the main uses to which the income of the households surveyed is allocated.

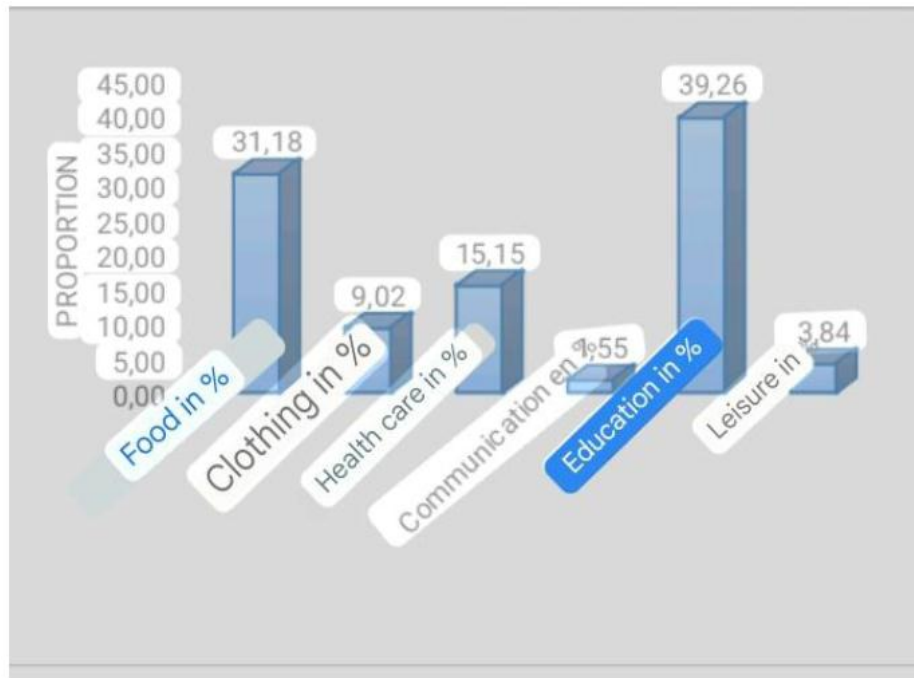


Figure 2: Main uses of surveyed households' income

The figure above shows that the highest proportion of income is spent on children's education (39.26%), followed by 31.18% on household food, 15.15% on household healthcare, 9.02% on household clothing, 3.84% on leisure and 1.55% on telephone calls.

This analysis also reveals that the low proportion for communication could be justified by the limited access or absence of telephone networks on the Kisangani - Yangambi road. This leads to poverty among the population due to limited access to the prices of agricultural products in the major shopping centres.

Analysis of poverty

Non-monetary poverty using the WHO approach

Figure 3 below shows the results of the poverty analysis of the households surveyed on the basis of anthropometric data using the WHO approach.

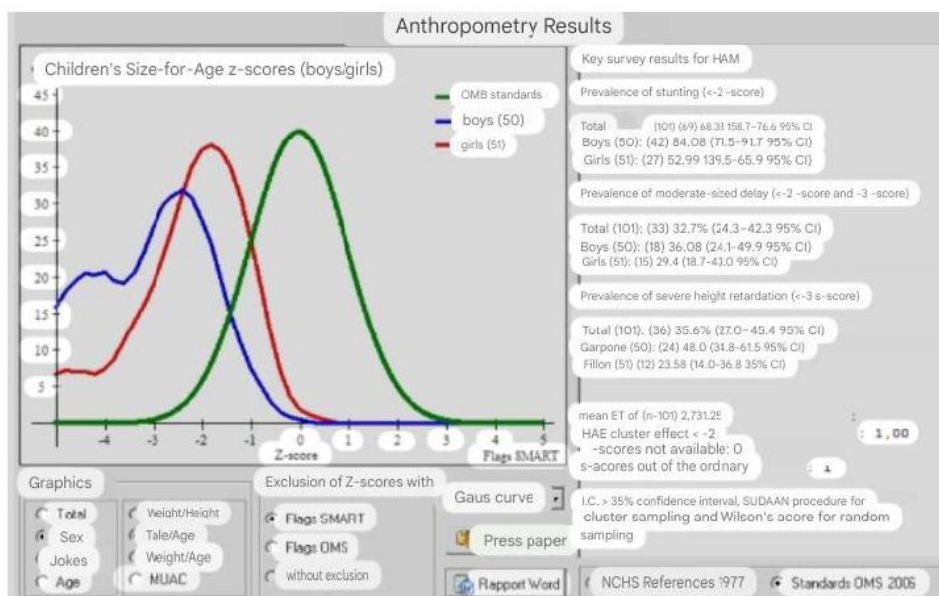


Figure 3: Poverty of households surveyed on the basis of anthropometric data

The analysis in the figure above shows that :

- The malnutrition rate (underweight) is 68.3%, i.e. the poverty rate is 68.3%, which means that 68.3% of the population have an income below the poverty line;
- The rate of malnutrition (moderate underweight) is : 35.6%, i.e. the depth of poverty rate is 35.6%, i.e. the average gap between the poor and the poverty line is 35.6%.
- The rate of malnutrition (severe underweight) is : 32.7%, i.e. the severity of poverty is 32.7%; which amounts to saying the intensity of poverty between the poor themselves is 32.7%. In other words, an average increase in consumption of 32.7% would be needed to eliminate the poor.

Monetary poverty using the F-G-T approach

In Table 2 below, we present the results of the monetary poverty of the households surveyed on the basis of data derived from household income using the F-G-T approach.

Severe underweight	Modern Severe underweight	underweight
16,27	29,65	89,21

The malnutrition rate (underweight) is 89.21%, i.e. the poverty rate is 89.21%, which means that 89.21% of the population have an income below the poverty line.

The rate of malnutrition (moderate underweight) is : 29.65%, i.e. the rate of the depth of poverty is 29.65%; which amounts to saying the average gap of the poor in relation to the poverty line is 29.65%.

The rate of malnutrition (severe underweight) is : 16.27%, i.e. the severity of poverty is 16.27%; which amounts to saying the intensity of poverty between the poor themselves is 16.27%. In other words, an average increase in consumption of 16.27% would be required for there to be no more poor people.

Significance test between the two approaches to assessing poverty

In Table 3 below, we compare the levels of significance between the results for monetary and non-monetary poverty of the households surveyed.

Table 3: Significance test between the two approaches

N°	Index	FGT	HWO	Meaning
01	Povert severity index	16,2%	32,7%	0,05 p-value = 0,005457, there is a significant difference in poverty scores
02	Depth of poverty	29,6%	35,6%	0,05 p-value = 0,3211, no significant difference in poverty scores
03	Incidence of poverty	89,2%	68,3%	0,05 p-value = 0,0002637, there is a significant difference in poverty results

The result of this analysis shows that there is a significant difference in the severity and incidence of poverty between the FGT and WHO approaches. The analysis also reveals that the remarkable numerical

difference in the depth of poverty and the significant difference in the other two between the two assessment approaches could be justified by the fact that the F-G-T approach encounters many difficulties in taking into account almost all sources of household income in rural areas of the DRC.

There are various reasons for this, including the diversity of natural sources, which provides rural people with uncontrolled sources of income, the culture of mutual aid between households (incompressible consumption), the instability of household agricultural income, which depends on the production period, and the difficulty of assessing real agricultural income following complex crop combinations using speculations from different crop cycles.

Relationship between socio-demographic profile and poverty

Gender of household heads and poverty

Table 4 below shows the level of dependence of poverty on the gender of heads of household.

Table 4: Poverty by gender of household heads.

Poverty situation			Chi-square test size	Cramer's V coefficient
	Yes	No	p-value = 0,402	0,0471
Men	83	8		
Woman	9	3		
Total	91	11		

His analysis shows that poverty does not depend on the sex of the heads of households in the study area, with p-value = 0.402 and a weak link between the two variables, as the V of cramer is 0.0471.

Marital status of heads of household and poverty

Table 5 below shows the level of dependence of poverty on the marital status of households.

Table 5: Poverty in relation to the marital status of heads of household.

Poverty situation			Chi-square test size	Cramer's V coefficient
	Yes	No	p-value = 0,3561	0,112
Single	0	0		
Married	89	10		
Widowed	2	1		
Total	91	11		

This analysis reveals, with p-value = 0.3561 which is greater than 0.05, that the two variables are not dependent with a medium link, since V de cramer is equal to 0.112. This means that poverty in our study area does not depend on the marital status of the heads of households. This means that poverty in our study area does not depend on the marital status of the heads of household.

Household size and poverty

Table 6 below shows the level of dependence of poverty on household size.

Table6:Poverty in relation to household size.

Poverty situation			Chi-square test size	Cramer's V coefficient
	Yes	No	p-value = 0.00419	0.263
1 to 5 people	1	9		
6 to 10 people	54	2		
11 to 11 people	33	0		
More than 15 people	3	0		
Total	91	11		

The result of this analysis shows that household income poverty is strongly influenced by household size, with p-value = 0.00419, which is less than 0.05. This means that the two variables are dependent and the link is strong, since V de cramer is equal to 0.263. This shows that rural households with a large number of members do not have to rely solely on monetary income to meet their day-to-day needs.

Level of education of heads of household and poverty

Table 7 below shows the level of dependence of poverty on the level of education of the heads of household.

Table7: Poverty in relation to level of education of heads of household.

Poverty situation			Chi-square test size	Cramer's V coefficient
	Yes	No	p-value = 0.04467	0.194
No level	1	0		
Primary	36	1		
Secondary	52	10		
University/sup	2	0		
Total	91	11		

Analysis of table 7 above shows that poverty in rural areas depends on the level of education of the heads of household, with p-value = 0.04467, which is less than 0.05. The link between the two variables is strong with V of cramer is 0.194. This shows that the level of education of the heads of households has a strong influence on the development of their households.

Main activity and poverty

Table 8 below shows the level of dependence of poverty on the main activity of heads of household.

Table8: Poverty in relation to the main activity of household heads

Poverty situation			Chi-square test size	Cramer's V coefficient
	Yes	No	p-value = 0.0317	0.0881
Agriculture	87	10		
Salary	4	1		
Total	91	11		

The comparative analysis of poverty in relation to the main activity of the heads of households reveals a level of dependence with p-value = 0.0317, but the link of this dependence is weak with V of cramer of 0.088. This means that agriculture is the main source of income, but it is supported by other sources of income that are not controlled by the household, as the linkage was found to be weak. This is one reason why the F-G-T approach is unsuitable in the context of the Congolese rural environment insofar as it assesses household poverty on the basis of monetary income alone.

IV. DISCUSSION

The objective of this study is to compare monetary and non-monetary poverty of rural households using the F-G-T and WHO approaches in rural areas of the DRC. The case of villages located on the Kisangani-Yangambi road.

The various studies carried out in rural areas of the DRC were relevant in their conception to assess the poverty situation, but the variations in the results make them only partially relevant to the expectations of the government and the institutions investing in this sector.

In the context of this study, the results of our two approaches to assessing poverty show that, for the same community, 89.2% of households are in a situation of monetary poverty, while only 68.3% are in a situation of non-monetary poverty.

This significant difference can be explained by the difficulties that the F-G-T approach encounters in the context of the DRC's rural environment due to the diversity of resources and its culture of mutual aid.

For the depth of poverty, the F-G-T approach gives 29.6% and the WHO approach gives 35.6%, a difference that proved not to be significant in the test.

For the severity of poverty, the F-G-T approach gives 16.2% and the WHO approach 32.7%. This significant difference shows that the average increase in consumption of 16.27% with the F-G-T approach for there to be no more poor people is underestimated compared with the WHO figure of 32.7%, for the same reason cited above.

Our socio-demographic results compared with other research show that 62% of heads of household have secondary education, 96% can read and write, and 95% have agriculture as their main source of household income. These results compared with other studies, Nganda, 2011 in his study conducted the result shows that 48% of heads of households are secondary level, 75% have agriculture as their main source of income; Mokili, 2019 In his study, he shows that 81.3% have secondary education and 67.2% can read and write, Bolakonga, 2013, in his study, shows that 45% of heads of household have secondary education; and Mpanzu, 2012, in his study, shows that 67% of heads of household have secondary education and 94% have agriculture as their source of income. This shows that the socio-demographic profile in rural areas is almost

Identical and widespread.

In terms of non-monetary poverty, we found that 68.3% of households are living in poverty. Mbaye's 2010 study in Senegal found the highest rate at 38.23% of households living in poverty, and Mokili's 2019 study in the same study area found that 61.5% of cases of underweight malnutrition in children aged 6 to 59 months were found in households suffering from health poverty (no access for household members to primary health care in a medical facility in the event of illness).

The extent of poverty in the DRC reflects the socio-economic realities of rural Congolese households, including limited and occasional access to various sources of protein for children due to the isolation of their environment.

In terms of monetary poverty, an analysis of household poverty in relation to the poverty line revealed that 89.2% of households were living in poverty. These results, compared with those found by Moumami, 2010 in his study, show that the Congolese rural environment has a poverty rate of 72%, and Andrianarivao, 2013 in his study, also shows that between 79% and 86% of farming households are classified as poor in Madagascar.

Analysis of this situation, on the one hand, leads us to question the effectiveness of monetary poverty indicators in the context of the Congolese rural environment for a number of reasons, including the fact that rural areas are poorer even though they largely supply urban areas, the undervaluation of the subsistence farming system in monetary terms, most of which is self-consumed, other sources of income that are uncontrolled and undervalued, etc., and, on the other hand, poor governance with an informal rural economy.

In terms of income, we found an average annual household income of USD 2729 and an individual income of USD 0.9 per day. Compared with other studies, this result corroborates those of Nganda, 2011, which is 0.99 USD per individual per day; Mokili, 2019 found 0.147 USD per individual per day for non-beneficiaries of the project and 0.158 USD for beneficiaries of the PRODAT-CTB project, 2016 and 0.80 USD by FIDA, 2014. In terms of household income, we found an average of USD 2727 per household. This result compared to other studies, Bolakonga, 2013 in his study, he found an average agricultural income per household of 732.8 USD.

These results only partially reflect the sources of household income, because the context of rural Congolese, household monetary income is not sufficient to determine household consumption.

For the relationship between socio-demographic profile and poverty, the results of the Chi-square test of dependence reveal that poverty is related to household size, level of education of household heads and main activity. In addition, the Cramer V coefficients calculated show that there is a strong link (0.180V0.360) between poverty and some socio-demographic profile

Parameters, including household size and level of education of the heads of households.

These results corroborate those of Mbaye, 2010, who found that households of more than 10 people often have problems feeding their children. The relationship is established with a significance level of 1% and the level of education of the heads of households influences the level of household poverty with 32.11% no level, 27.86% primary level, 30.77% secondary level and 0% university level.

Moumami, 2010 found that 80% of households live in poverty when the number of individuals exceeds five, which shows that household size is an aggravating factor in monetary poverty in the DRC. Bouwe, 2022, in his socio-economic analysis, states that the level of education increases the ability to produce good ideas that transform the psychological and socio-economic environment for national and local promotion, by putting them into practice.

However, this poverty is not a function of the gender and marital status of the heads of household, and the Cramer V coefficients calculated show that this link is weak (0.045V0.090) for the gender of the heads of household and moderate (0.090V0.180) for the marital status of the heads of household.

V. CONCLUSION

The aim of this study was to compare the monetary and non-monetary poverty of rural households using the F-G-T and WHO approaches in rural areas of the DRC. The villages on the Kisangani-Yangambi road were included.

After our investigations, the results show that there is a difference between the two approaches to poverty assessment in rural areas of the DRC. There is a significant difference in the incidence and severity of poverty between the two approaches. However, there was no significant difference in the depth of poverty index.

For monetary poverty, 89.2% of households are in a situation of poverty, whereas for non-monetary poverty, only 68.3% are in this situation. This significant difference can be explained by the difficulties that the F-G-T approach encounters in the context of the DRC's rural environment, with its diversity of resources and its culture of mutual aid.

For the depth of poverty, the F-G-T approach gives 29.6% and the WHO approach 35.6%.

And for the severity of poverty, with F-G-T we have 16.2% and with the WHO 32.7%. This significant difference shows that the average increase in consumption of 16.27% with the F-G-T approach to eliminate

poverty is underestimated compared with the WHO figure of 32.7%. This difference in results enabled us to assess the impact of the indicators chosen by each approach to evaluate poverty in relation to the realities of rural areas.

This has also enabled us to say that the F-G-T approach, which assesses poverty on the basis of household income, is not very effective in rural areas of the DRC for a number of reasons,

including the following, the diversity of natural resources, which provides rural people with uncontrolled sources of income; the culture of mutual aid between households; the instability of household agricultural income, which depends a little more on the production period, the difficulty of assessing real agricultural income following the use of complex crop associations and the use of crops with different cropping cycles, etc.

Relation between poverty and the socio-demographic profile of the households surveyed, the results of the Chi-square dependency test reveal that poverty is related to household size, level of education of the heads of households and main activity. Furthermore, the Cramer V coefficients calculated show that this link is strong (0.180V0.360) between poverty and some socio-demographic profile parameters, including household size and the level of education of the heads of households, and weak (0.045V0.090) with the main activity of the heads of households.

However, this poverty is not a function of the gender and marital status of the heads of household and the Cramer V coefficients calculated show that this link is weak (0.045V0.090) for the gender of the heads of household and average (0.090V0.180) for the marital status of the heads of household.

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