



UGANDA BUREAU OF STATISTICS




MULTIDIMENSIONAL POVERTY INDEX REPORT 2022

MULTIDIMENSIONAL POVERTY INDEX REPORT

2022





This report presents findings from the computation of the Multidimensional Poverty Index produced by the Uganda Bureau of Statistics (UBOS).

Additional information about the MPI may be obtained from the Uganda Bureau of Statistics (UBOS),

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PREFACE



The report presents the Multidimensional Poverty Index (MPI) for Uganda. It is the first ever MPI report produced by the Uganda Bureau of Statistics (UBOS) using the 2016/17 and 2019/20 Uganda National Household Surveys. The approach used is based on the Alkire-Foster method developed by Sabina Alkire and James Foster from the Oxford Poverty and Human Development Initiative (OPHI) at the University of Oxford and adapted to Uganda's context.

We are grateful to the United Nations Development Programme (UNDP) for the financial and technical support extended during the MPI development process. We would also like to acknowledge the technical input provided by the Oxford Poverty and Human Development Initiative during the data analysis phase.

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TABLE OF CONTENTS

PREFACE	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	iv
LIST OF FIGURES	iv
ACRONYMS AND ABBREVIATIONS	v
EXECUTIVE SUMMARY	1
1 CHAPTER ONE: BACKGROUND	4
1.1 History of poverty measurement.....	4
1.2 Purpose of the Multidimensional Poverty Index for Uganda.....	5
2 CHAPTER TWO: METHODOLOGY	6
2.1 Introduction.....	6
2.2 Alkire-Foster approach to multidimensional poverty measurement.....	6
2.2.1 Properties of the Multidimensional Poverty Index.....	8
2.3 Alkire-Foster methodology applied to Uganda national MPI analysis.....	10
2.3.1 Unit of identification and analysis.....	10
2.3.2 Dimensions, indicators, indicator cut-offs and weights.....	10
2.3.3.Weights.....	15
2.3.4.Poverty cut-off (k).....	16
2.3.5.Data description.....	16
3 CHAPTER THREE: RESULTS	17
3.1 Introduction.....	17
3.2 Uganda uncensored and censored headcount ratios.....	17
3.3 Extent of multidimensional poverty in Uganda: incidence, intensity and MPI.....	24
3.4 Dimension contribution to the MPI.....	27
3.5 Overlaps of multidimensional poverty and the monetary poverty.....	31
3.6 Robustness check.....	35
4 CONCLUSIONS	36
REFERENCES.....	37
APPENDICES.....	40

LIST OF TABLES

TABLE 21 : Dimensions, Indicators, Specific Deprivation Weights And Cut-Offs.....	11
TABLE 3.1A: Censored Versus Uncensored Headcount Ratio, 2019/20.....	23
TABLE 3.2B: Censored Versus Uncensored Headcount Ratio, 2016/17.....	23
TABLE 3.3 : Incidence, Intensity And Multidimensional Poverty Index, K = 40%.....	25
TABLE 3.4: Incidence Of Multidimensional Poverty By Different Household Characteristics.....	26
TABLE 3.5: Monetary And Multidimensional Poverty By Sub-Region (%).....	32
TABLE 3.6: Overlap And Differences In Multidimensional Headcount (H, K = 40%) And Monetary Headcount.....	34

LIST OF FIGURES

FIGURE 3.1: Uncensored Headcounts Ratios, Proportion Of The Population Deprived In Each Indicator At National And Rural-Urban Areas.....	18
FIGURE 3.2: Uncensored Headcounts Ratios, Proportion Of The Population Deprived In Each Indicator, By Region.....	20
FIGURE 3.3: Censored Headcount Ratios At Indicators Level (K = 40%).....	22
FIGURE 3.4: Dimension Contributions To The MPI (%).....	27
FIGURE 3.5A: Dimension Contributions To The MPI By Sub Regions 2019/20(%).....	28
FIGURE 3.5B: Dimension Contributions To The MPI By Sub Regions 2019/20(%).....	29
FIGURE 3.6: Dimension Contributions To The MPI By Rural And Urban Areas (%).....	30
FIGURE 3.7: Figure 3.7: Uncensored Headcount Ratios (Deprivation Rates) By Income Poverty Status.....	31

ACRONYMS AND ABBREVIATIONS

EPRC	Economic Policy Research Centre
GoU	Government of Uganda
HPI	Human Poverty Index
ILO	International Labour Organisation
MPI	Multidimensional Poverty Index
NDP	National Development Plans
OPHI	Oxford Poverty and Human Development Initiative
SDGs	Sustainable Development Goals
UBOS	Uganda Bureau of Statistics
UNDP	United Nations Development Programme
UNHS	Uganda National Household Survey



EXECUTIVE SUMMARY

The overarching objective for this report was to estimate the national Multidimensional Poverty Index (MPI) for Uganda, which will be a benchmark for tracking progress in multiple deprivations that Ugandans face in the coming years, in line with Sustainable Development Goal (SDG) 1: End poverty in all its forms everywhere. It represents concerted efforts to complement income poverty measures and deepen the understanding of poverty in a multifaceted way. The thrust to achieve SDG 1 calls for an integrated, holistic analysis of the multidimensional aspects of poverty.

The Human Poverty Index (HPI) reported in the Human Development Report of the United Nations Development Programme (UNDP) in 1997, was the first integrated measure of poverty. In 2010, the UN's Multidimensional Poverty Index (MPI), suggested by Alkire and Foster (2011), replaced the HPI. The MPI combines two key pieces of information to measure acute poverty: the proportion of people (within a given population) who experience multiple deprivations (i.e. the incidence of poverty) and the intensity of their deprivation—the average proportion of (weighted) deprivations they experience. Therefore, the MPI is the product of incidence and intensity of poverty, indicating that it is sensitive to both prevalence (and incidence of poverty) and its breadth or intensity.

In Uganda, most empirical work on poverty uses the one-dimensional measure of well-being, usually income or household expenditure. Nevertheless, the conceptualization of poverty in the country has steadily evolved since the introduction of the Poverty Eradication Action Plan (PEAP) in 1997. There has been recognition of the multiple dimensions of human welfare both in terms of policy and measurement, although these have typically been treated as separate components, e.g. income, consumption, education and health.

This report aims to estimate the national MPI using the Uganda National Household Surveys (UNHS) for 2016/17 and 2019/20. Although other data sets are available, Uganda National Household Survey (UNHS) data were preferred for the construction of the MPI over other nationally representative data sets mainly because of its large sample size and the fact that it can be disaggregated to the sub-regional level.

The MPI for Uganda uses the household as the unit of identification, implying that it uses individual and household deprivations to construct a poverty profile for each household (i.e. it identifies a household and all its members as deprived). However, the unit of analysis is an individual, implying that results are presented for the entire population. The MPI is calculated

using four dimensions; education; Health; living standards, employment and financial inclusion, which all together have a total of 12 indicators.

At the national level, the incidence of multidimensional poverty (the percentage of people who are multidimensional poor or the poverty rate or headcount ratio) was estimated at 42.1 percent. The average intensity of poverty (the average percentage of dimensions in which poor people are deprived, or the average deprivation score of poor persons) was estimated at 54.5 percent, implying that on average, the poor are deprived in 2.2 dimensions. The MPI measure, which quantifies the weighted average number of deprivations (as a proportion of the maximum number of possible deprivations) was estimated at 0.23 in 2019/20. The rural multidimensional headcount ratio and MPI were estimated at 50.2 percent and 0.78 respectively, which is approximately three times larger than that of urban areas (19.7 percent and 0.108 respectively). However, the intensity (or breadth) of poverty in rural and urban areas is relatively the same. At the regional level, multidimensional poverty is highest in the Northern region (63 percent), followed by the Eastern region (45.7 percent). A similar trend emerges for the intensity as well as the MPI. At the sub-regional level, Karamoja has the highest levels of multidimensional poverty, poverty intensity and MPI, at 85 percent, 68 percent and 0.58 respectively. The other sub-regions with high incidences of poverty are Acholi (64 percent), West Nile (59 percent), Lango (57 percent), and Teso (56 percent). The least incidence of poverty was reported in Kampala (0.4 percent), Buganda South (18 percent) and Buganda North (30 percent).

Based on individual indicators, at the national level, the highest deprivations are in access to improved toilet facilities (76 percent), housing materials (65 percent), electricity (65 percent), asset ownership (46 percent) and overcrowding (45 percent) (Table 3.1). The lowest deprivation rates were recorded in access to health services (14 percent). At the sub-regional level, Karamoja has the highest deprivations in years of schooling, school attendance and access to toilet facilities (97 percent), housing material (93 percent), electricity (87 percent), and asset ownership (87 percent). The prevalence of child labour (56 percent) is the highest in Lango and Teso while Busoga has the highest deprivation in productive employment (36 percent).

Among the population of the multidimensional poor, at the national level, the highest deprivations are in housing materials and toilet facilities, each at 39 percent, and access to clean energy (37 percent). At the regional level, the Northern region has the highest deprivations in almost every indicator except in water and child labour indicators. The Eastern region has the highest deprivations in productive employment (50 percent) and child labour (28 percent). The Western region has the highest deprivation in access to water (52 percent). At the sub-regional level, Karamoja consistently has higher levels of deprivation in all indicators except for access to health services and the prevalence of child labour.

The findings for the multidimensional headcount ratio by different background characteristics

indicate that female-headed households have higher rates of multidimensional poverty (49 percent) compared to 39 percent for male-headed households. Compared with those in the lowest expenditure quintile, multidimensional poverty reduces as a household progresses to higher levels of expenditure quintiles. Similarly, the higher educational attainment of the household head is associated with reduced multidimensional poverty levels. Household heads without formal education registered a headcount poverty ratio of 69 percent compared to 37 percent among those who completed primary and 1 percent among degree holders. In addition, multidimensional poverty is significantly higher among large households of seven or more persons (47 percent), and teenage-headed households (53 percent).

When comparing income and multidimensional poverty, it was found that 15 percent of the population are poor according to both measures, which could imply that, in addition to having insufficient income, this group suffers from deprivation that cuts across health, education, assets and living standards and employment and financial inclusion. Furthermore, a larger share of the population, 27 percent, are identified as multidimensionally poor only, which is a reflection that the MPI captures a larger percentage of the population as poor (42.1 percent) compared to the monetary measure (20.3 percent). This finding suggests that by using only the monetary poverty measure for targeting, a large percentage of people who are multidimensional poor are left behind. On the other hand, if the multidimensional measure is used for targeting, most of the monetary poor would be covered.





CHAPTER ONE: BACKGROUND

1.1 History of poverty measurement.

Uganda has registered significant progress in the fight against poverty. Using the monetary measure of poverty, in the 2019/20 UNHS, the incidence of poverty was estimated at 20.3 percent of the total population. Although this number is still high, the reduction is quite significant when compared with the baseline poverty estimate of 56 percent from a similar survey conducted in 1992/93.

To eliminate poverty in all its forms, as SDG 1 requires, there is a need to refocus efforts beyond income poverty and to consider the multiple dimensions of poverty. However, in Uganda, the vast majority of empirical work on poverty uses a one-dimensional measure of well-being, usually income or household expenditure. Nevertheless, the conceptualization of poverty in Uganda has steadily evolved since the introduction of the Poverty Eradication Action Plan (PEAP) in 1997.

Prior to 1997, the main empirical basis for informing national development policy was indicators on annual output changes from the national accounts aggregates. Since the introduction of the PEAP in 1997 and the successor National Development Plans (NDPs) in 2010, poverty has featured as a core development challenge and corresponding targets were set. The establishment of a 'cost of basic needs' poverty line (Appleton 1997) and several data collection exercises by the Uganda Bureau of Statistics (UBOS) (1999, 2006, 2010, 2013 and 2017) have facilitated the tracking of progress in poverty reduction. There has been recognition of the multiple dimensions of human welfare both in terms of policy and measurement, but these have typically been treated as separate, e.g. income, consumption, education and health.

Income poverty has traditionally been analysed and measured in one dimension, whereby a basket of goods and services considered as the minimum requirement to live a non-impooverished life is valued at the current prices. In this measure, people without an income sufficient to cover that minimum basket of goods are considered to be poor. Nevertheless, participatory poverty studies in Uganda indicate that poor people themselves describe their poverty much more broadly, including a lack of education, health, housing, empowerment, employment, personal security and more .

Income alone as an indicator cannot uniquely capture the multiple aspects that contribute to poverty. As such, using the monetary measure of poverty alone cannot adequately enable the

measurement of achieving SDG 1, which aims at ending poverty in all its forms, among other targets. Therefore, the drive to achieve the SDG targets calls for a more integrated analysis of the multidimensionality of poverty where poverty is looked at more holistically. The Human Poverty Index (HPI), as measure of poverty has since been replaced by the Multidimensional Poverty Index (MPI) in 2010 in the Human Development Reports.

1.2 Purpose of the Multidimensional Poverty Index for Uganda

The structure of the Multidimensional Poverty Index for Uganda was developed with the purpose of providing clearer guidance in designing programmes to reduce poverty in the country. The MPI will also enable monitoring and evaluating of the country's plans and programmes to reduce multidimensional poverty and deprivation. The national MPI for Uganda can be used to:

- Compare regions in terms of MPI, thereby allowing the Government and other stakeholders to focus services and policies accordingly in order to leave no one behind.
- Complement the income poverty measure.
- Measure the progress achieved over the years.

Until recently, many countries have measured poverty only by consumption or income. But no one indicator (such as consumption or income) can capture the multiple aspects of poverty. However, countries are increasingly embracing multidimensional poverty measures, following the 2010 launch of the Global Multidimensional Poverty Index, a relatively new international measure of acute poverty developed by the Oxford Poverty and Human Development Initiative (OPHI) and the United Nations Development Programme Human Development Report Office (UNDP HDRO). The MPI complements monetary poverty measures by reflecting the acute deprivations that people face simultaneously in other dimensions, which are also essential to guarantee a dignified life.



CHAPTER TWO: METHODOLOGY

2.1. Introduction

In developing a multidimensional poverty indicator, several decisions need to be made relating to the unit of analysis; the dimensions (or indicators) to be included as well as their appropriate cut-off (or poverty lines) to identify deprivation in each indicator; the structure (including weights) to use to aggregate indicator deprivations into a single deprivation score; and finally how to identify a person as multidimensional poor based on the weighted aggregated score.

2.2. Alkire-Foster approach to multidimensional poverty measurement

This section describes the theoretical framework of the Alkire-Foster methodology used to compute the national MPI for Uganda. It focuses on one class of the Alkire-Foster poverty measure: the adjusted headcount ratio (M_0)¹ which many countries refer to as the Multidimensional Poverty Index (MPI); it is well suited for use with ordinal variables. The MPI satisfies several useful properties (see section 2.2.1). The notation has been adapted to the case of household (i.e. the unit of identification). Furthermore, what is termed as a “dimension” below may at times refer to a set of “indicators”.²

Suppose at any point in time, there are n people in Uganda and their well-being can be evaluated using d dimensions (or indicators). We denote the achievement of person j in indicator i by x_{ij} for all $i=1,2,\dots,n$ and $j=1,2,\dots,d$. The achievements of n persons in d indicators are summarized by the $n \times d$ dimensional matrix, whose rows and columns denote persons and indicators respectively. Each indicator is assigned a weight based on the value of a deprivation relative to other deprivations. The relative weight attached to each indicator is the same across all persons and is denoted by w_j , such that $w_j > 0$ and $\sum_{j=1}^d w_j = 1$.

For single-dimensional analysis, people are identified as poor as long as they fail to meet a threshold called the ‘poverty line’ and non-poor otherwise. In multidimensional poverty analysis, there can be more than one poverty line. For example, the family of Alkire-Foster poverty measures used in this report identify ‘who is multidimensionally poor’ in two steps using two thresholds or

¹ A detailed discussion of the other Alkire-Foster measures can be found in Alkire and Foster (2011).

² The term “dimensions” is used to mean a pillar of well-being and a dimension may consist of several indicators. For example, the Global MPI, has four dimensions but 10 indicators.

'cut-offs'; one is indicator-specific and another relates to the number of indicators, k . In the first step, a person is identified as deprived or not in each indicator subject to a deprivation cut-off. We denote the deprivation cut-off for indicator j by z_j and the deprivation cut-offs are summarized by vector z . Any person i is deprived in any j indicator if $x_{ij} < z_j$ and non-deprived otherwise. We assign a deprivation status score to each person in each dimension based on the deprivation status. If person i is deprived in an indicator, then $g_{ij} = 1$; and $g_{ij} = 0$ otherwise. The second step uses the weighted deprivation status scores of each person in all indicators to identify the person as poor or not. An overall deprivation score, $c_i \in [0,1]$, is computed for each person by summing the weighted deprivation score:

$$c_i = \sum_{j=1}^d w_j g_{ij} \quad (1)$$

A person is identified as poor if $c_i \geq k$ where $k \in (0,1]$, and non-poor otherwise.³ The deprivation scores of all n persons are summarized by vector c .

The focus axiom requires that while measuring poverty, the focus should remain only on those identified as poor. This entitles us to obtain the *censored deprivation score vector* $c_i(k)$ from the deprivation vector, c , such that $c_i(k) = c_i$ if $c_i \geq k$ if $c_i(k) = 0$; and otherwise. The most basic statistic that can be computed in this framework is the Multidimensional Headcount ratio,

$$H = \frac{q}{n} \quad (2)$$

where q is the number of people who are multidimensionally poor.

Another important statistic is the intensity (or breadth) of poverty. This is defined as the average number of deprivations (as a maximum number of possible deprivations) suffered by the multidimensionally poor and can be expressed as:

$$A = \frac{\sum_{i=1}^n c_i(k)}{qd} \quad (3)$$

After identifying the set of poor and their deprivation scores, we obtain the adjusted headcount ratio M_0 or the MPI. This measure quantifies the weighted average number of deprivations (as a proportion of the maximum number of possible deprivations) across the population, while censoring the deprivations of those deemed to be multidimensionally non-poor. In other words,

³ When $k \in [0, \min\{w_j\}]$, only one deprivation is required for person i to be considered poor. This identification approach is called the union approach. The other extreme, when $k = d$, yields the intersection approach, in which only persons with deprivations in the entire set of indicators are considered multidimensional poor. For $\frac{\min\{w_1, w_2, \dots, w_d\}}{d} < k < 1$, it is referred to as the dual cut-off approach by Alkire and Foster, or more generally as the intermediate approach.

M_0 is equal to the average of the censored deprivation scores:

$$M_0 = MPI = \frac{1}{n} \sum_{i=1}^n c_i(k) \quad (4)$$

2.2.1. Properties of the Multidimensional Poverty Index

In addition to being intuitive and simple to compute as shown above, the Alkire-Foster poverty measure, M_0 possesses useful properties for policy analysis. The first is that M_0 is sensitive to both the prevalence (and incidence) of poverty (H) and to its breadth or intensity (A) since it can be expressed as a product of the two measures (Alkire et al., 2015a) as:

$$M_0 = H \times A = \frac{q}{n} \times \frac{\sum_{i=1}^n c_i(k)}{qd} \quad (5)$$

The inter-temporal policy analysis implication of this feature is that a certain reduction in may occur either by reducing or by reducing. This difference cannot be understood by merely looking at M_0 . If a reduction in M_0 occurs by merely reducing the number of people who are marginally poor, then decreases but may not. On the other hand, if a reduction in M_0 occurs by reducing the deprivation of the poorest of the poor, then decreases, but may not.

The second feature of M_0 is that it can be broken down by different mutually exclusive and collectively exhaustive population subgroups such as rural/urban areas, regions or socio-demographic groups of people. To illustrate this feature, suppose, there are population subgroups whose achievement matrix is X . Let $s= 1,2,\dots,m$ denote n_s people in the subgroup s such that $\sum_{s=1}^m n_s = n$, and X_s is an $n_s \times d$ matrix of achievements of all people in the subgroup. Then, M_0 can be expressed as a weighted average of the subgroup adjusted headcount ratios,

$$\sum_{s=1}^m \left[\left(\frac{n_s}{n} \right) M_0^s(X_s) \right] \quad (6)$$

where the weight is the population share $\left(\frac{n_s}{n} \right)$. The contribution of each subgroup to the overall poverty measure M_0 is given by:

$$C_s = \frac{\left[\left(\frac{n_s}{n} \right) M_0^s \right]}{M_0} \quad (7)$$

This feature is also known as subgroup decomposability and is useful for understanding the contribution of different subgroups to overall poverty levels. Note that the contribution of a subgroup to the overall poverty depends both on the poverty level of that subgroup and that

subgroup's population share. Whenever the contribution to poverty of any subgroup widely exceeds its population share, this suggests an unequal distribution of poverty, implying that the subgroup is bearing a disproportionate share of poverty (Alkire and Santos, 2011).

The third feature of M_0 is that, once it has been computed and the deprivations of the non-poor have been censored, one can look at the Censored Headcount (CH) ratios for each indicator.⁴ The Censored Headcount ratio of an indicator is the proportion of the population that is multidimensionally poor and deprived in that indicator at the same time. It is calculated by simply adding up the number of people who are poor and deprived in that indicator and dividing by the total population.

Let us denote the Censored Headcount Ratio of indicator j by \hat{h}_j . Then M_0 can be expressed as:

$$M_0 = MPI = \sum_{j=1}^d w_j \hat{h}_j = \sum_{j=1}^d w_j \left[\frac{1}{n} \sum_{i=1}^n g_{ij}(k) \right] \quad (8)$$

where $g_{ij}(k) = g_{ij}$ if $c_i \geq k$ and $g_{ij}(k) = 0$ if otherwise.

Similar relationships can be established between M_0 and the deprivations among the poor. Let us denote the proportion of poor people deprived in indicator j by \hat{h}_j^p . Then, dividing both sides of the above relationship by H , we find:

$$A = \frac{M_0}{H} = \frac{MPI}{H} = \sum_{j=1}^d w_j \frac{\hat{h}_j}{H} = \sum_{j=1}^d w_j \hat{h}_j^p \quad (9)$$

where $\hat{h}_j^p = \frac{h_j}{H}$.

Given the above expression, it is possible to assess how different indicators contribute to overall poverty, by computing the percentage contribution of indicator to overall poverty M_0 , which we denote as β_j :

$$\beta_j = w_j \frac{h_j}{M_0} = w_j \frac{h_j^p}{M_0} \quad (10)$$

Whenever the contribution to poverty of a certain indicator widely exceeds its weight, this suggests that there is a relative high deprivation in this indicator among the population, implying that the poor are more deprived in this indicator than in others (Alkire and Santos, 2011).

The Alkire-Foster poverty measure described in this subsection was applied to the Uganda National Household Survey (UNHS) data (explained in the next section) to compute Uganda's MPI.

⁴ Censored Headcount ratios differ from the raw or Uncensored Headcount (UH) ratios—the proportion of the population deprived in that dimension—in that they only consider the deprivation of those that are poor, ignoring the deprivations of the non-poor, that is, setting the deprivations of the non-poor to zero in the deprivation score.

2.3. Alkire-Foster methodology applied to Uganda national MPI analysis

The National MPI for Uganda applies a set of dimensions, indicators and cut-offs that reflect its priorities as expressed in the National Development Plan (NDP) III as well as a consensus from different Ministries, Departments and Agencies (MDAs) and development partners, and that can be implemented using the Uganda National Household Survey (UNHS 2019/20) data set. This section describes the choice of these parameters.

2.3.1 Unit of identification and analysis

The unit of identification for being poor or non-poor is the household. Information on the members of a household is considered collectively, all of whom receive the same deprivation score. This implies that the deprivations are simultaneously experienced by all household members rather than isolated individuals. For instance, if school non-attendance is a deprivation (i.e. children between the ages of 6 and 18 not attending school), then it is assumed that this deprivation affects not only the child who is not attending school, but also the entire household. This means that all other individuals living in this household are considered deprived with respect to this dimension/indicator (school attendance). One of the main reasons for making this assumption is that a household-based multidimensional poverty measure is arguably more consistent with the traditional poverty measures based on household consumption expenditure. It is also easier to compare the two: if an individual were the analysis unit, deprivation would only be assigned to the individual rather than to the whole household. The result would indicate that the same household would hold individuals with and without deprivations, implying that the same household would be made up of poor and non-poor people. This situation would impede the use of the index to orientate and monitor public policy interventions targeted to households.

The unit of analysis refers to at what level the results are reported. In this report, the results are representative of the entire population. This means that, for instance, the headcount ratio presented in this report refers to the proportion of the population (not households) that is identified as multidimensionally poor.

2.3.2 Dimensions, indicators, indicator cut-offs and weights

The identification of dimensions for the MPI for Uganda was a three-step process. In the first step, a core team consisting of selected members from the Uganda Bureau of Statistics, Ministry of Finance Planning and Economic Development (MoFPED), National Planning Authority (NPA), United Nations Development Programme (UNDP) and Economic Policy Research Centre (EPRC) chaired by the Director, Socio-Economic Surveys, at UBOS, held discussions. Based on the team's experience, a series of dimensions or desirable components of a multidimensional poverty measure were listed. In the second step, the discussions were broadened to include

Ministries, Departments and Agencies (MDAs), academics and civil society organisations. The third step involved regional consultations that included local governments, religious leaders, youth, women and community members.

The above consultative process, considering data availability, National Development Plan (NDP) III priority areas, technical advice from OPHI, and already proven indicators, such as those contained in the Sustainable Development Goals (SDGs), resulted in the identification of 4 dimensions—education, health, living standards, and employment and financial inclusion—and a total of 12 indicators for Uganda’s MPI, instead of the 10 used for the global MPI (see Table 2.1). The set of selected indicators includes some exclusively attributable to the individual, and some that measure the household and community environment and are not exclusively attributable to an individual. However, since a household is the unit of identification, individual-level information is aggregated at the household level such that if an individual faces a particular deprivation, then their entire household also faces the same deprivation.

TABLE 2.1: DIMENSIONS, INDICATORS, SPECIFIC DEPRIVATION WEIGHTS AND CUT-OFFS

Dimension	Indicator	Deprivation cut-off	Indicator Weights	Dimension Weight
Education	Years of schooling	Deprived if no household member above 14 years of age has completed 6 years of schooling.	1/8	1/4
	School attendance	Deprived if any child aged 6 to 18 years is not attending school.	1/8	
Health	Access to health services	Deprived if at least one household member was sick in the 30 days preceding the survey and did not seek for care due to a range of reasons.	1/12	1/4
	Improved water	Deprived if the household has no access to an improved source of water or if the average time taken to and from the improved water source is more than 30 minutes.	1/12	
	Improved toilet facility	Deprived if the household does not use an improved toilet facility and the toilet facility is not shared.	1/12	
Living standards	Overcrowding	Deprived if the household is overcrowded (three or more people per room).	1/16	1/4
	Electricity	Deprived if the household has no access to clean energy sources such as electricity, solar, generators and thermal electricity.	1/16	
	Housing material	Deprived if the household has unimproved walls or roof or floor.	1/16	
	Asset ownership	Deprived if the household does not have at least one communication or transport asset (bicycle, motorcycle, motorboat, radio, phone, TV) and has no car.	1/16	
Employment and financial inclusion	Child labour	Deprived if any household member 5 to 17 years is engaged in work.	1/12	1/4
	Productive employment	A household is deprived if the head is subsistence farmer only or casual labourer in agriculture.	1/12	
	Financial services	Deprived if no member of the household (16 years and above) has/uses financial products or does not use mobile money.	1/12	

Education

Two indicators that complement each other within the education dimension were selected: years of schooling and school attendance. Ideally, the MPI for Uganda would include an outcome indicator on the quality of schooling to capture the level of knowledge or skills attained. However, the data available could not lend itself to this kind of analysis. Therefore, the two selected indicators are proxies for the level of knowledge and understanding of household members. The first indicator looks at completed years of schooling for household members aged 15 years and above. This is in line with the NDP III goal, targeting an average education attainment of 11 years of schooling by 2024/25. The second indicator is concerned with school attendance for all children aged 6 to 18. The age bracket for this indicator was guided by the education policy, which stipulates the official school going age for primary school as 6 to 12 years and 13 to 18 years for secondary school. The indicator on school attendance may be used to monitor the extent to which the Universal Primary Education (UPE) and Universal Secondary Education (USE) policies are achieving their intended objectives of increasing school enrolments.

In terms of deprivation cut-offs for the indicators within this dimension, the MPI for Uganda requires that at least one person in the household has completed 6 years of schooling and that all children of schoolgoing age are attending school. Given that the current average years of schooling stands at 5.4, it was argued that 6 years is reasonable enough for the baseline MPI. Setting a threshold of 11 years of schooling as per NDP III would lead to very high deprivation levels. Following Basu and Foster's (1998) idea of proximate literacy as explained by Santos and Ura (2008), it is required that at least one household member is literate. The logic is that illiterate people that live in a household where at least someone is literate enjoy some of the literate person's abilities; in other words, they enjoy an intra-household externality (ibid.).

Health

Three indicators were defined within the health dimension. The first indicator measures the effective use of healthcare services and considers access to healthcare in terms of distance to a health facility, cost of accessing care, and quality of care (in terms of availability of qualified staff, staff attitude and drug availability). A household is considered deprived if at least one household member was sick in the 30 days preceding the survey and did not seek care due to a range of reasons⁵ or that a household member that fell sick in the last 30 days consulted a healthcare staff but the first place of consultation was outside the radius of 5 kilometres from the household. Households without any members sick in the last 30 days were considered as non-deprived.

⁵ The facility is too far, hard to get to, too dangerous to go to, available facilities are costly, no qualified staff, distance to facility, staff attitude not good, long waiting time, facility is inaccessible, facility is closed, facility is destroyed, drugs not available.

The second health indicator is access to an improved source of water or if the average time taken to and from the improved water source⁶ is more than 30 minutes. Access to safe water reduces morbidity and mortality and enhances the quality of life. Evidence also shows that walking long distances and queuing for long hours at water points is associated with high social costs in the form of lost opportunities for productive work (UNHCR, 2014). In this context, a household is deprived if it does not have access to an improved source of water or if the average time taken to and from the improved water source is more than 30 minutes. According to SDG standards, a water source is considered improved if it is either piped water, public tap, borehole or pump, protected well, protected spring, bottled water or rainwater; if it fails to satisfy these conditions, then it is considered deprived. Increasing access to improved water is one of the targets of the NDP III and measuring it would help in monitoring progress; the NDP III envisages a safe water coverage of 85 percent for rural and 100 percent for urban areas by 2024/25 and universal coverage by 2040 (GoU, 2015). The last indicator relates to access to an improved toilet facility. Safe excreta disposal reduces the potential contamination of water, food or hands and provides a healthier environment.⁷ It also guarantees privacy and reinforces human dignity. A household is considered to have access to improved sanitation if it has a flush toilet or latrine, or ventilated improved pit or composting toilet, if they are not shared with other households. If the household does not satisfy these conditions, then it is considered deprived in sanitation.

Inclusion of access to an improved water source and improved toilet facility under the health dimension differs from a global practice, for example, under the global MPI, where these indicators are considered as living standards indicators. However, in the case of Uganda, following a rigorous consultative process, it was felt that deprivations in these two indicators pose more health challenges. For instance, the use of unimproved sanitation facilities increases the chances of not drinking clean water, and can lead to the spread of diseases like diarrhoea and malaria, thereby increasing illness, which in turn negatively affects livelihoods and economic development. Thus, a decision to include water and toilet facilities as health indicators as opposed to living standards indicators.

Living standards

Under the living standards dimension, four indicators—overcrowding, access to electricity, housing construction materials and ownership of assets—were used. The inclusion of these indicators was guided by existing policies and interventions as well as the consensus from the indicator identification consultative process. For instance, the primary objective of the 2013–2022 rural electrification strategic plan is to achieve an accelerated pace of electricity access and

⁶ In Uganda, the Ministry of Health defines safe drinking water as water from a tap and piped water system, borehole, protected well or spring, rainwater or gravity flow schemes. Uganda's definition of improved water sources differs from the one used internationally, which excludes rainwater.

⁷ See http://www.who.int/water_sanitation_health/hygiene/settings/hvchap4.pdf?ua=1.

service penetration to meet national development goals, with a target for electrification access of 51 percent by 2030 and 100 percent by 2040 (GoU, 2013).

Crowding or housing density is a key measure of housing quality. The three most commonly used measures of crowding are persons per room, floor per person and households per dwelling unit (United National Development Group, 2003).⁸ In this measure, a household is deprived if more than three persons sleep in the same room. The term 'sleeping rooms' excludes the rooms used for cooking household meals (kitchens), bathrooms, toilets, and living and dining areas. The use of clean energy is aimed at reducing overreliance on wood fuel for cooking and ultimately protecting natural resources. In this context, a household is deprived in access to electricity if it does not have access to grid electricity, solar power, thermal power or a generator. The actual use or number of hours that electricity is available in a day was not considered since the data included meaningless information. The condition of a household's dwelling is a fundamental indicator of poverty and deprivation, and the quality of building materials used to construct the floor, wall and roof is a rudimentary indication of the quality of housing for the household and is often used to identify deprived households. A household is deprived in housing materials if it has unimproved walls, roof or floor. Floors made from poor materials are known to be hazardous to children's health and development (GoU et al., 2018). The welfarist approach of poverty highlights physical capital as one determinant of the capacity of an individual or households to maintain their living standard in case of any shock. Assets including those that facilitate access to information and transport are important indicators of welfare. A household is considered deprived if it does not have at least two of these assets—bicycle, motorcycle, motorboat, radio, television and phone—and has no car.

Employment and financial inclusion

The indicators of employment and financial inclusion include access to productive employment, child labour, and access to financial services. The inclusion of child labour as an indicator was guided by the National Child Labour Policy (NCLP), formulated in 2006, to guard against child labour. The NCLP was a result of an acknowledgement by the Government of Uganda that child labour violates the dignity of children and hinders the realization of development goals. It argues that prematurely engaging children in work as child labourers is likely to have adverse effects on their education. The policy outlines preventive, protective and rehabilitative interventions to address the problem of child labour in Uganda (MGLSD, 2006). In this context, a household is considered deprived if any household member aged 5 to 17 years is engaged in work that fits within the definition of child labour. Households with no children within this age group are considered non-deprived.

⁸ Indicators for monitoring the Millennium Development Goals: Definitions, rationale, concepts and sources.

The inclusion of access to financial services is in line with Uganda’s Vision 2040, which highlights limited access to finance (or credit) as one of the barriers affecting the competitiveness of the economy (FINSCOPE, 2013). Access to financial services enables individuals and firms to manage changes in income, deal with fluctuating cash flows, accumulate assets and make productive investments.⁹ The impact of improved financial services is not only confined to increasing economic growth, but also helps in reducing poverty and income inequality (Beck et al., 2009). In fact, target 8.1 of SDG 8 aims at strengthening the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all. A household is considered deprived if no household member aged 16 years and above uses or has financial products or does not use mobile money. The last indicator considered is engagement in productive employment, which provides the key linkage between economic development and poverty reduction, and is one of the vehicles for reducing poverty (ILO, 2012). This is in line with Uganda’s aspirations of contributing to national development through gainful employment as highlighted in the NDP III (GoU, 2020). In addition, target 8.5 of SDG 8 aims to achieve full and productive employment and decent work for all women and men by 2030. A household is considered deprived if the household head of working age (14–64 years) is engaged in subsistence agriculture only or is a paid casual labourer in agriculture or not working at all.

2.3.3 Weights

Each of the four dimensions (education, health, living standards, and employment and financial inclusion) is given an equal weight of 1/4 in the MPI for Uganda. All indicators are equally weighted within each dimension. It is assumed that each dimension has the same relevance as a constitutive element of the index and for public policy. While convenient, an equal weighting scheme in multidimensional poverty analysis is controversial (Decancq and Lugo, 2013). However, assigning equal importance to all indicators in the poverty index (i.e. using equal weights) is simply an arbitrary normative weighting system that is appropriate in some but not all situations (Atkinson, 2003). Therefore, the equal weighting scheme used here does not imply that the issue of weighting is circumvented; it simply implies that each indicator and dimension are considered equally important for a person’s level of well-being. Nonetheless, since the Alkire-Foster methodology allows for different weights to be used for various dimensions and indicators, we use other weighting schemes to check the sensitivity of results. With four dimensions, an equal weighting scheme puts 25 per cent weight on each dimension. We checked for the robustness of the results by doubling the weight of each dimension, one at a time, and found that the main results still hold.

⁹ See <https://sustainabledevelopment.un.org/sdg8>

2.3.4 Poverty cut-off (k)

In computing the National MPI for Uganda, a person was required to be deprived in at least two in every five (i.e. $k \geq 40\%$) of the weighted indicators to be identified as multidimensionally poor. In the results section, poverty results for different poverty cut-offs are also presented.

2.3.5 Data description

The National MPI estimates for Uganda presented in this report are based on UNHS 2019/20. The survey is the latest in a series of national household surveys that have been conducted by UBOS. UNHS 2019/20 collected data on household consumption, educational attainment, labour market outcomes, physical features of the household and other areas of social and material well-being. However, UNHS 2019/20 did not collect information on some of the highly relevant health indicators such as child mortality and child nutrition, often collected in the Uganda Demographic Health Survey (UDHS). The sample for UNHS 2019/20 was designed to provide estimates for a large number of indicators on the poverty situation at the national level, for urban and rural areas, and for 15 sub-regions. The urban and rural areas within each sub-region were identified as the main sampling strata and the sample of households was selected in two stages. Within each stratum, a specified number of census enumeration areas were selected systematically with probability proportional to size. After a household listing was carried out within the selected enumeration areas, a systematic sample of 10 households was drawn in each sample enumeration area. As the sample is not self-weighting, sample weights are used for reporting survey results.



CHAPTER THREE: RESULTS

3.1 Introduction

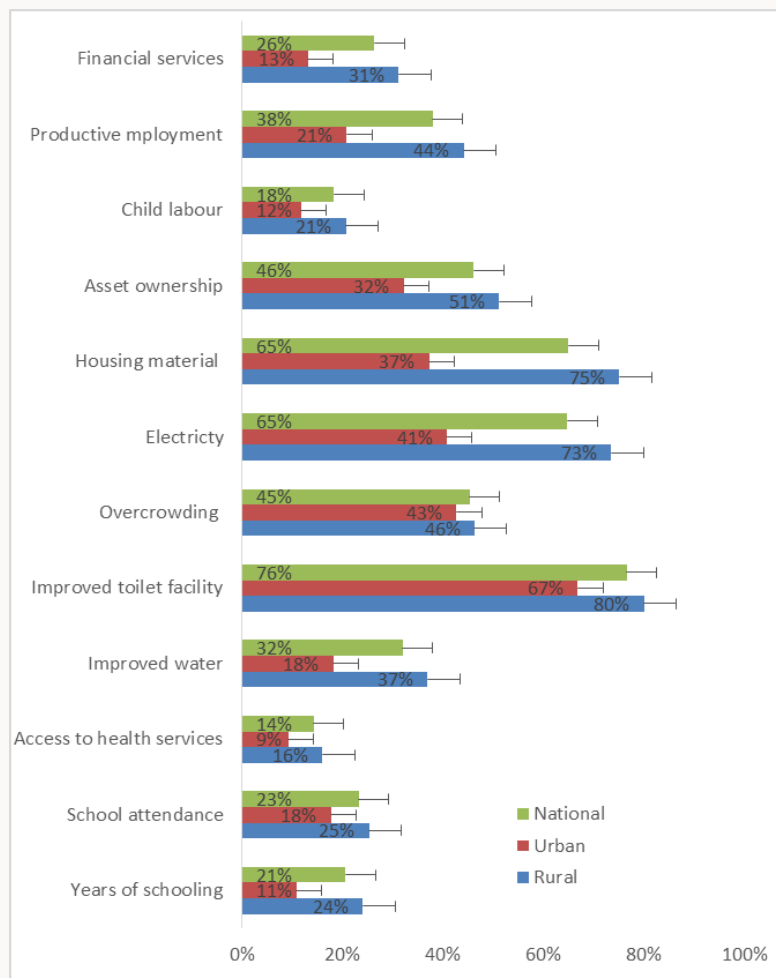
This chapter provides the main results of the Multidimensional Poverty Index for Uganda using UNHS 2019/20 data, as well as its partial indices: the Multidimensional Headcount (H) and Intensity of Poverty (A), in comparison with the 2016/17 MPI results. The findings for each of the indices is also disaggregated by area of residence (rural/urban), regions, sub-regions, consumption-based quintiles and other individual characteristics (e.g. sex, education level and marital status of the household head; household size; and age groups), with a view of highlighting some of the key drivers of multidimensional poverty in Uganda. While making comparisons, the differences in levels of poverty estimates are sometimes large enough to leave no room for doubt. However, when the poverty estimates happen to be very close to each other, it necessitates the use of statistical inference to ascertain the statistical significance of the differences in levels in poverty estimates. Consequently, in addition to providing estimates of poverty for different subgroups of population, statistical inference tests using the t-statistics for the computed measures are also performed. For this purpose, the data are appropriately adjusted to consider the survey sampling design of UNHS 2019/20 before conducting the statistical inferences. Lastly, the chapter also shows the overlaps of the Multidimensional Poverty Index with Monetary Poverty in Uganda, in order to access the complementary role of the MPI to the traditional income poverty measure.

3.2 Uganda uncensored and censored headcount ratios

Figure 3.1 shows the basic raw (or uncensored) headcount ratios for each of the 12 indicators considered. The uncensored headcount ratio of each indicator represents the proportion of the population who are deprived in one specific indicator, regardless of whether they are deemed multidimensionally poor or otherwise. As can be seen in Figure 3.1, the results are relevant for performance analysis at the sectoral level. In both 2019/20 and 2016/17, the highest deprivations are in terms of access to improved toilet facilities, housing materials and clean energy or electricity. For instance, 76 percent of the population was deprived in terms of access to improved toilet facilities, followed by housing materials (65 percent), and clean energy or electricity (65 percent) in 2019/20. While overcrowding reduced from 49 percent to 45 percent between 2016/17 and 2019/20, the deprivation rates in financial services instead increased from 8 percent to 26 percent while that of productive employment increased from 18 percent to 38 percent over the same period.

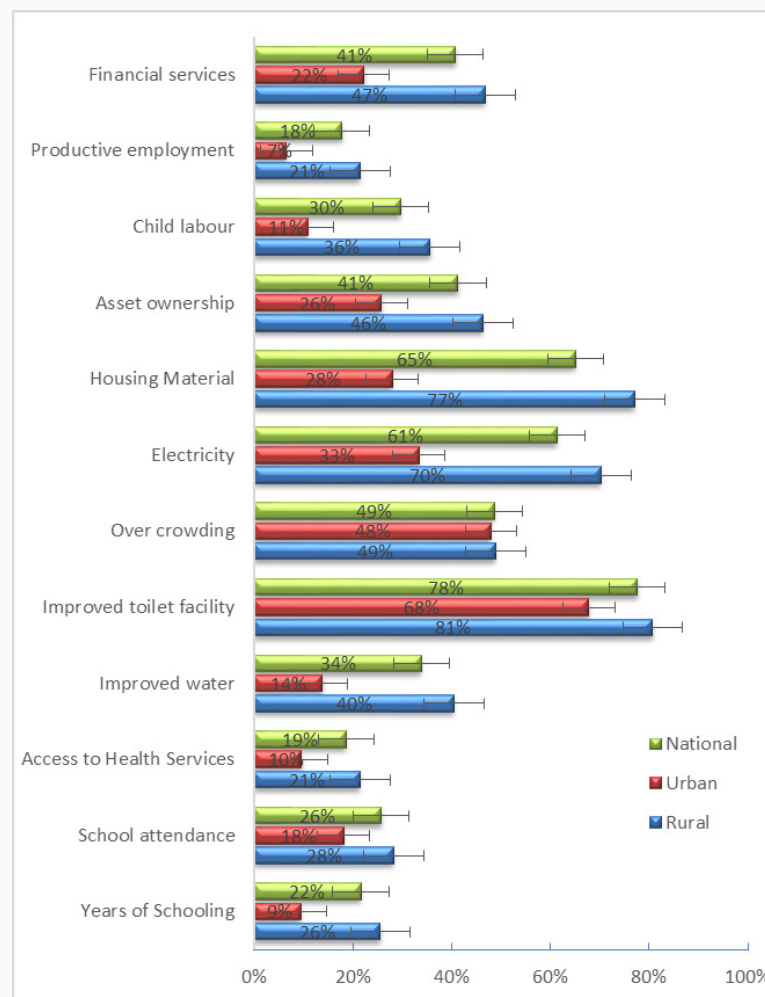
The largest disparities between rural and urban areas can be found with respect to years of schooling, access to improved water, housing materials, child labour and productive employment. Deprivations in these indicators is over two times more prevalent in rural areas than in urban areas in both survey years.

FIGURE 3.1: UNCENSORED HEADCOUNT RATIOS, PROPORTION OF THE POPULATION DEPRIVED IN EACH INDICATOR AT NATIONAL LEVEL, URBAN AREAS AND RURAL AREAS, 2019/20 VS 2016/17



Source: UBOS computations based on UNHS 2019/20.

Multidimensional Poverty Index for Uganda

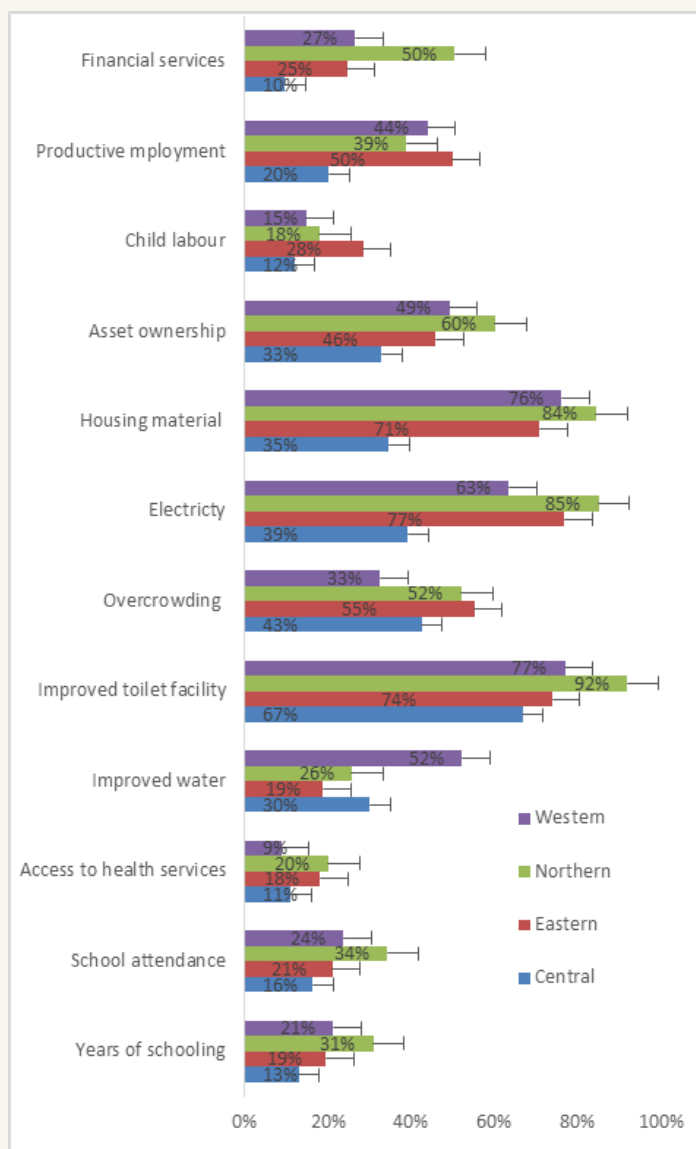


Source: UBOS computations based on UNHS 2016/17.

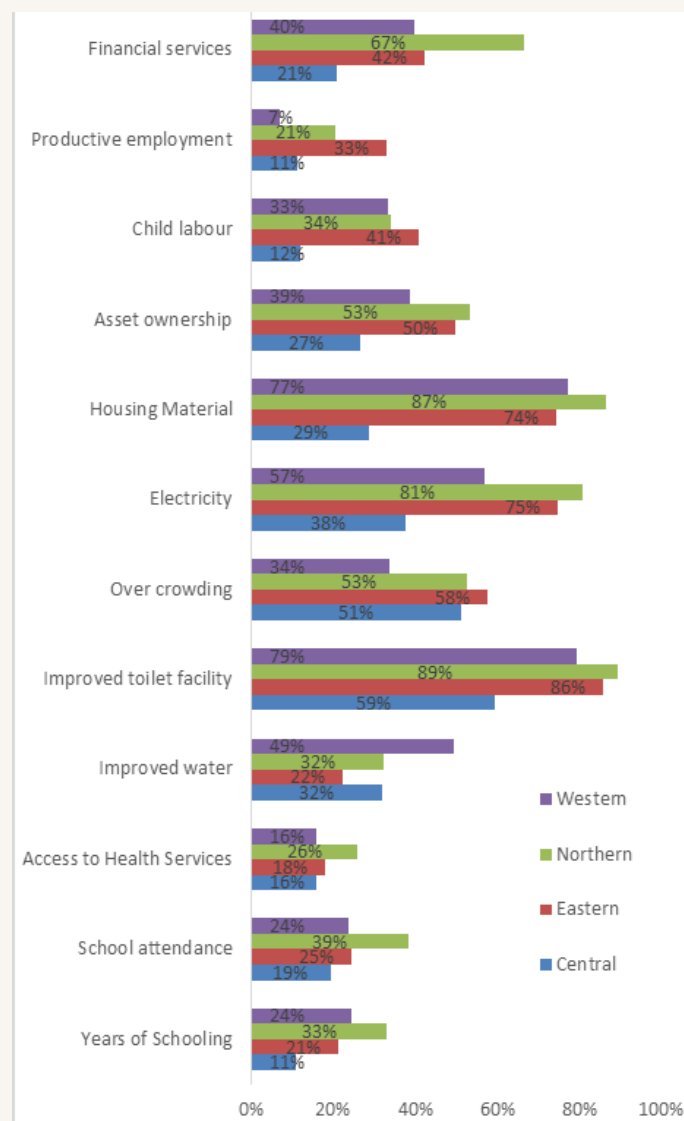
Overall, people living in the Northern region face higher deprivations compared to their counterparts in the Central, Eastern and Western regions. With the exception of improved water, productive employment, child labour and overcrowding, people living in the Northern region faced deprivations that are above the national average in each indicator in both survey years. However, there has been a switch in the level of deprivation between the Eastern and Western regions between the 2016/17 and 2019/20 survey periods. While the Eastern region was more deprived in nine indicators as of 2016/17 compared to Western region, the 2019/20 results show that the Western region became more deprived in seven indicators compared to Eastern. This result is in line with income poverty estimates in Uganda between the two periods where income poverty reduced in the Eastern region but slightly increased in the Western region. Nonetheless, the Eastern region has been consistently more deprived in productive employment, child labour and overcrowding while the Western region has been consistently more deprived in access to safe water over the two survey periods as shown in Figure 3.2.



REGION AND YEAR OF SURVEY



Source: UBOS computations based on UNHS 2019/20.



Source: UBOS computations based on UNHS 2016/17.

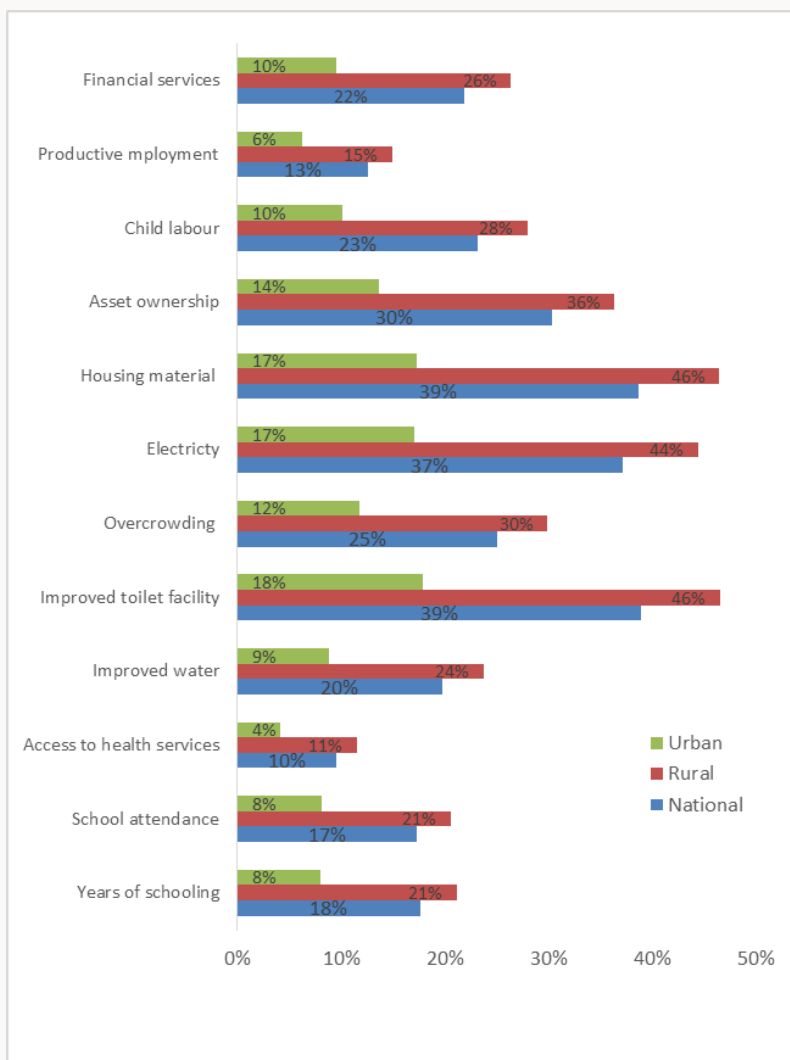
Karamoja still tops the other sub-regions in deprivation despite a slight decline in levels of deprivations. Notably, the population in Karamoja is deprived in years of schooling (69 percent), school attendance (59 percent), access to toilet facilities (97 percent), overcrowding (66 percent), electricity (88 percent), housing material (93 percent) and financial services (75 percent). Nonetheless, the prevalence of productive employment was consistently highest in Busoga at 53 percent in 2016/17 and 36 percent in 2019/20. Surprisingly, close to 67 percent of people living in Kampala are deprived in access to improved toilet facilities (see Table A1).

The uncensored headcount ratio results presented so far provide a first basis for priorities within the selected dimensions in terms of policy design. They suggest that it is mainly people living in rural areas and in the Northern, Western and Eastern regions that face high deprivation. This provides a strong reason to focus deprivation-reducing efforts in these areas. However, these results do not say much about the intensity of poverty or joint distribution of deprivations. Naturally, suffering from one deprivation is not the same as suffering from multiple deprivations at the same time.

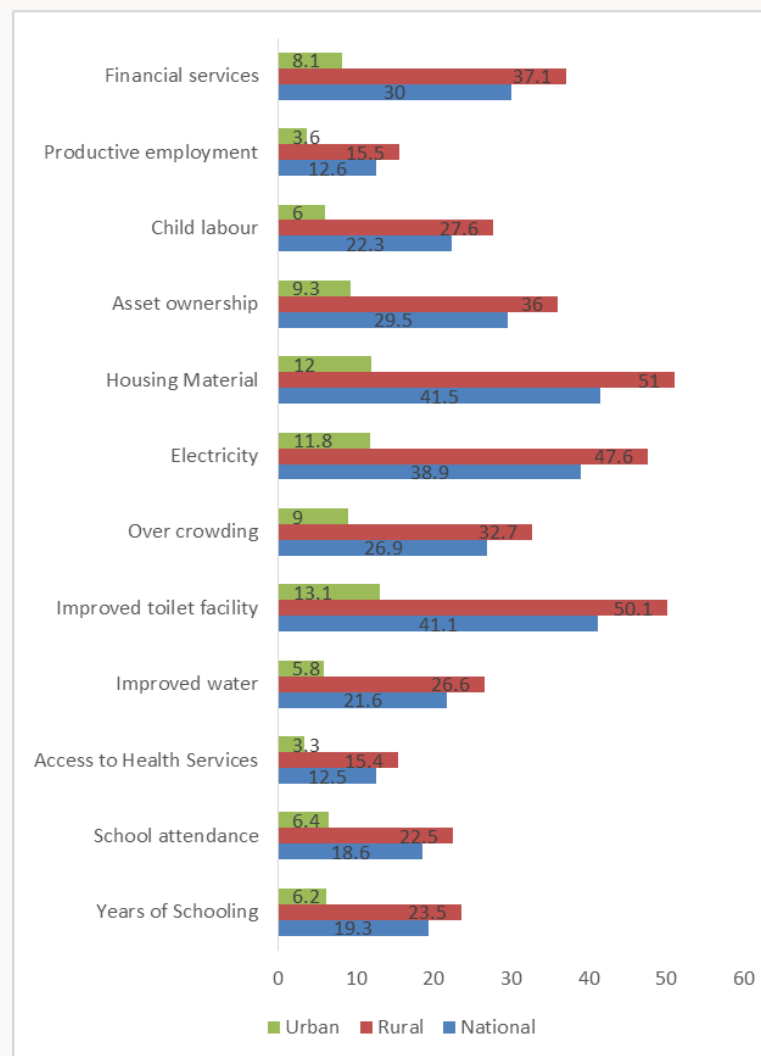
Next, the censored headcount ratio of an indicator is discussed, which represents the proportion of the population that is multidimensionally poor and deprived in a specific indicator at the same time. As Alkire and Roche (2012) explain, the unique advantage of using the censored headcount approach is that it allows for unpacking the index further and shows the factors that drive changes over time. Figure 3.3 shows that in both 2016/17 and 2019/20, the highest deprivation among the multidimensional poor is in housing materials followed by sanitation facilities and electricity. For instance in 2019/20, 39 percent of the multidimensional poor is deprived in housing materials, a similar share to in sanitation facilities (39 percent) and electricity (37 percent). The lowest deprivation was observed for access to health services (10 percent) and productive employment (13 percent).



FIGURE 3.3: CENSORED HEADCOUNT RATIOS AT INDICATORS LEVEL (k = 40%), BY YEAR OF SURVEY



Source: UBOS computations from UNHS 2019/20.



Source: UBOS computations from UNHS 2016/17.

TABLE 3.1A: CENSORED VS UNCENSORED HEADCOUNT RATIO, 2019/20

Indicator	National			Rural			Urban		
	Uncensored	Censored	Uncen - Cens (%)	Uncensored	Censored	Uncen - Cens (%)	Uncensored	Censored	Uncen - Cens (%)
Years of schooling	0.205	0.176	2.9	0.24	0.211	2.9	0.108	0.08	2.8
School attendance	0.232	0.173	5.9	0.252	0.205	4.7	0.177	0.082	9.5
Access to health services	0.142	0.095	4.7	0.16	0.115	4.5	0.092	0.041	5.1
Improved water	0.319	0.197	12.2	0.369	0.237	13.2	0.181	0.088	9.3
Improved toilet facility	0.765	0.389	37.6	0.8	0.465	33.5	0.668	0.179	48.9
Overcrowding	0.452	0.25	20.2	0.462	0.298	16.4	0.426	0.118	30.8
Electricity	0.647	0.371	27.6	0.734	0.443	29.1	0.407	0.17	23.7
Housing material	0.649	0.387	26.2	0.75	0.464	28.6	0.372	0.173	19.9
Asset ownership	0.461	0.303	15.8	0.511	0.363	14.8	0.321	0.136	18.5
Child labour	0.182	0.232	-5	0.206	0.279	-7.3	0.116	0.101	1.5
Productive employment	0.379	0.126	25.3	0.441	0.149	29.2	0.208	0.063	14.5
Financial services	0.263	0.219	4.4	0.311	0.263	4.8	0.131	0.095	3.6

Source: UBOS computations based on UNHS 2019/20.

TABLE 3.2B: CENSORED VS UNCENSORED HEADCOUNT RATIO, 2016/17

Indicators	National			Rural			Urban		
	Uncensored	Censored	Uncen - Cens (%)	Uncensored	Censored	Uncen - Cens (%)	Uncensored	Censored	Uncen - Cens (%)
Years of schooling	0.216	0.193	2.3	0.255	0.235	2	0.095	0.062	3.3
School attendance	0.258	0.186	7.2	0.282	0.225	5.7	0.182	0.064	11.8
Access to health services	0.186	0.125	6.1	0.215	0.154	6.1	0.096	0.033	6.3
Improved water	0.339	0.216	12.3	0.404	0.266	13.8	0.137	0.058	7.9
Improved toilet facility	0.776	0.411	36.5	0.807	0.501	30.6	0.677	0.131	54.6
Overcrowding	0.487	0.269	21.8	0.489	0.327	16.2	0.48	0.09	39
Electricity	0.613	0.389	22.4	0.702	0.476	22.6	0.334	0.118	21.6
Housing material	0.651	0.415	23.6	0.771	0.51	26.1	0.28	0.12	16
Asset ownership	0.413	0.295	11.8	0.463	0.36	10.3	0.258	0.093	16.5
Child labour	0.296	0.223	7.3	0.356	0.276	8	0.108	0.06	4.8
Productive employment	0.178	0.126	5.2	0.214	0.155	5.9	0.066	0.036	3
Financial services	0.408	0.3	10.8	0.468	0.371	9.7	0.222	0.081	14.1

Source: UBOS computations based on UNHS 2016/17.

At the sub-regional level, Karamoja consistently has higher levels of deprivation except for in productive employment (12 percent) and child labour (16 percent) (Table A.2).

3.3 Extent of multidimensional poverty in Uganda: incidence, intensity and MPI

This section presents results for the multidimensional headcount (H), the intensity of poverty (A), the adjusted headcount (MPI), indicator and dimension contributions to the MPI, and overlaps of the MPI with the monetary poverty measure.

Table 3.3 presents the incidence of people or the proportion of people identified as multidimensional poor (that is those that face multiple deprivations), the intensity of poverty (A) (reflecting the average share of deprivations each poor person experiences) and the MPI. Using the poverty cut-off of 40 percent, both the incidence of poverty (H) and intensity of poverty (A) each reduced by about 2 percent between 2016/17 and 2019/20. For instance, as of 2019/20, the incidence of poverty is estimated at 42.1 percent, down from 44.3 percent in 2016/17, while the intensity of poverty reduced from 56.4 percent to 54.7 percent over the same period. That is, each poor person is, on average, deprived in more than two full dimensions. While both the incidence (H) and intensity (A) measures provide relevant information on the level of multidimensional poverty, MPI tracks progress at two levels: H and A . For example, if a poor person's deprivations (A) increased, H would not change since the person was already classified as multidimensional poor.

Furthermore, results show that the headcount ratio reduced in rural areas from 54 percent to 50.2 percent between 2016/17 and 2019/20. However, the headcount ratio increased in urban areas by 5.6 percentage points (from 14.1 percent to 19.7 percent) over the same period. Nonetheless, the headcount ratio in rural areas remains more than 2.5 times higher than that in urban areas in both survey periods. Accordingly, the high poverty rates in rural areas coupled with a high proportion of the population living in those areas (75 percent) presents a major challenge for poverty reduction efforts in Uganda. Although the costs of reaching the poor in rural areas may be high due to, for example, infrastructural and institutional challenges, continued commitment is needed to extend social services and other development programmes to the poor in rural areas.

At the regional level, multidimensional poverty estimates replicate the well-known poverty patterns in Uganda. The Northern region has the highest levels of multidimensional poverty, poverty intensity and MPI at 62.9 percent, 57.5 percent and 0.362 respectively, followed by the Western region, where 45.1 percent of people suffer multiple deprivations, and on average were deprived in 2.4 dimensions in 2019/20. At the sub-region level, a remarkable decline in the headcount ratio was observed in the Bukedi and Elgon sub-regions with a 23.2 and 15.1 percentage points decline in head count poverty between 2016/17 and 2019/2020. On the contrary, Kigezi recorded the highest increase in poverty change of 9.6 percentage points followed by Ankole with a 5.3 percentage points increase in the headcount ratio over the same period. Nonetheless, Karamoja still has the highest levels of multidimensional poverty, poverty intensity and MPI at 84.9 percent, 64.8 percent and 0.55 respectively. The other sub-regions with high incidences

of poverty and above the national average are Acholi (63.6 percent), West Nile (59.1 percent), Lango (57 percent), Teso (55.6 percent), Kigezi (48.4 percent), Bunyoro (45.7 percent), Tooro (45.5 percent) and Busoga (45.1 percent). The incidence of poverty is lowest in Kampala (0.4 percent), Buganda South (18 percent) and Buganda North (31.5 percent).

TABLE 3.3: INCIDENCE, INTENSITY AND MULTIDIMENSIONAL POVERTY INDEX, k = 40%

Geographical area	Multidimensional headcount ratio (H)			Intensity of deprivation (A)			Multidimensional Poverty Index (MO)		
	2016/17	2019/20	% change	2016/17	2019/20	% change	2016/17	2019/20	%change
Residence									
Rural	0.540	0.502	-3.8	0.566	0.549	-1.7	0.306	0.276	-3.0
Urban	0.141	0.197	5.6	0.534	0.531	-0.3	0.075	0.105	3.0
Region									
Central	0.201	0.205	0.4	0.537	0.528	-0.9	0.108	0.108	0.0
Eastern	0.548	0.457	-9.1	0.55	0.535	-1.5	0.301	0.245	-5.6
Northern	0.657	0.629	-2.8	0.599	0.575	-2.4	0.394	0.362	-3.2
Western	0.421	0.451	3.0	0.55	0.537	-1.3	0.231	0.242	1.1
Sub-region									
Kampala	0.027	0.004	-2.3	0.474	0.429	-4.5	0.013	0.002	-1.1
Buganda South	0.183	0.179	-0.4	0.548	0.529	-1.9	0.1	0.095	-0.5
Buganda North	0.29	0.315	2.5	0.531	0.528	-0.3	0.154	0.166	1.2
Busoga	0.499	0.451	-4.8	0.548	0.541	-0.7	0.274	0.244	-3.0
Bukedi	0.654	0.422	-23.2	0.554	0.53	-2.4	0.362	0.224	-13.8
Elgon	0.556	0.405	-15.1	0.551	0.507	-4.4	0.306	0.205	-10.1
Teso	0.527	0.556	2.9	0.547	0.551	0.4	0.288	0.306	1.8
Karamoja	0.867	0.849	-1.8	0.684	0.648	-3.6	0.593	0.55	-4.3
Lango	0.563	0.57	0.7	0.563	0.552	-1.1	0.317	0.315	-0.2
Acholi	0.703	0.636	-6.7	0.599	0.554	-4.5	0.421	0.352	-6.9
West Nile	0.628	0.591	-3.7	0.582	0.566	-1.6	0.365	0.334	-3.1
Bunyoro	0.42	0.457	3.7	0.56	0.54	-2.0	0.235	0.247	1.2
Toro	0.49	0.455	-3.5	0.556	0.542	-1.4	0.272	0.246	-2.6
Ankole	0.373	0.426	5.3	0.541	0.537	-0.4	0.202	0.229	2.7
Kigezi	0.388	0.484	9.6	0.54	0.524	-1.6	0.209	0.254	4.5
Total	0.443	0.421	-2.2	0.564	0.547	-1.7	0.25	0.23	-2.0

Source: Computations are based on UNHS 2016/17 and UNHS 2019/20.

The MPI has the very useful quality of being able to be broken down by many other subgroups apart from those presented in Table 3.3. This feature is extremely useful for targeting purposes, as it informs policymakers about which groups of the population have the largest share of the overall poverty. Table 3.4 suggests the existence of gender inequality in poverty; female-headed households have higher rates of multidimensional poverty of about 50 percent in both 2016/17 and 2019/20, compared to 42 percent and 39 percent respectively for male-headed households. Compared with those in the lowest expenditure quintile, multidimensional poverty reduces as a household progresses to higher levels of expenditure quintiles. Similarly, the higher educational attainment of the household head is associated with reduced multidimensional poverty

levels. Nonetheless, headcount poverty increased across all education strata with exception of household heads with some primary education, where poverty instead reduced from 61.3 percent in 2016/17 to about 54 percent in 2019/20 as shown in Table 3.4. In addition, poverty is significantly higher among large households of seven or more persons (46.6 percent), teenage-headed households (52.7 percent) and households headed by widows/widowers (51.1 percent).

TABLE 3.4: INCIDENCE OF MULTIDIMENSIONAL POVERTY BY DIFFERENT HOUSEHOLD CHARACTERISTICS

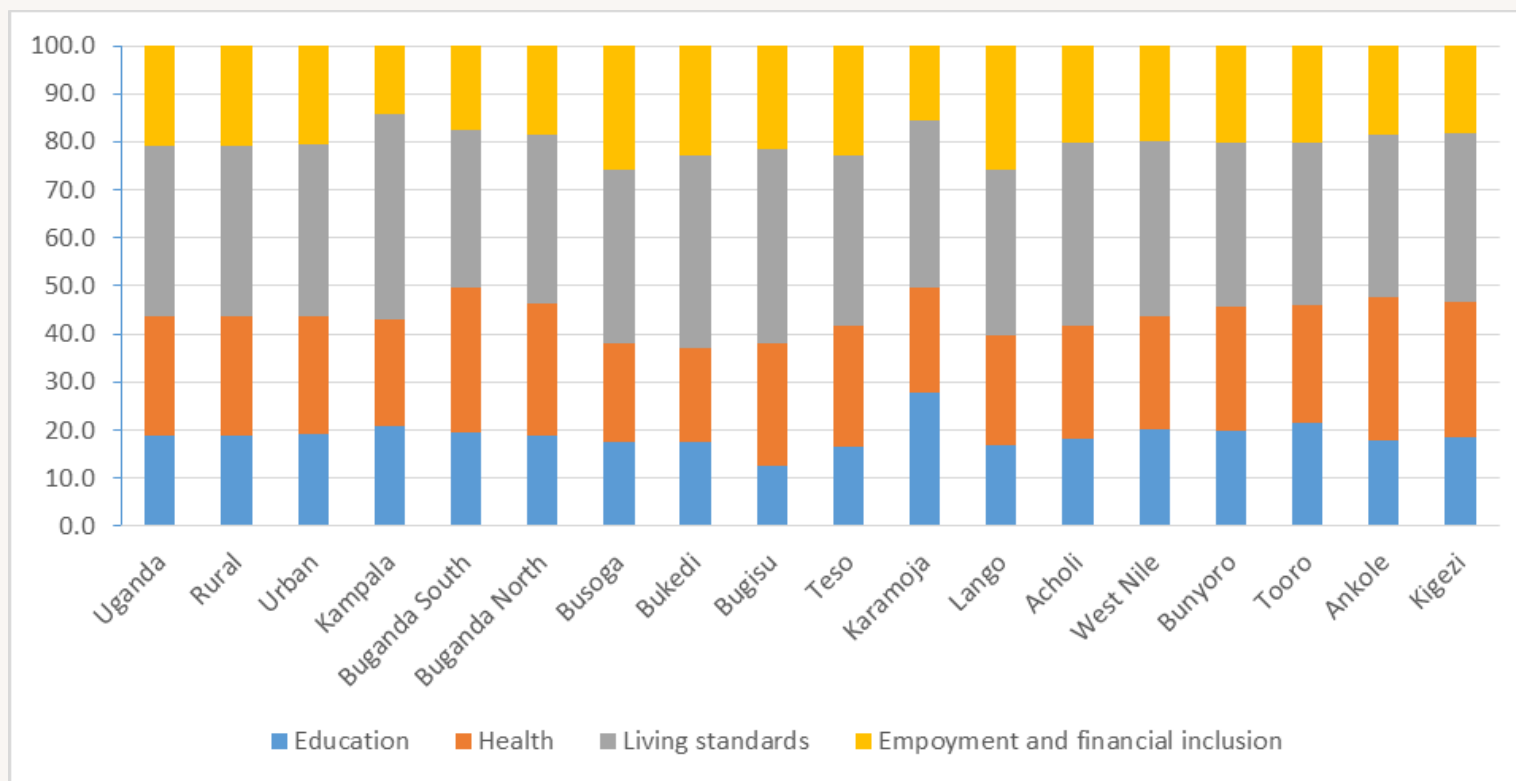
Characteristic	2016/17	2019/20
Sex of household head		
Female	49.8	48.9
Male	42.3	39.4
Consumption expenditure quintile		
Quintile 1	79.9	73.4
Quintile 2	58.3	56.8
Quintile 3	42.5	42.8
Quintile 4	29.1	27.3
Quintile 5	11.6	10.3
Education level		
No formal education	68.1	69.4
Some primary	61.3	53.9
Completed primary	35.6	36.9
Some secondary	23.6	24.0
Completed secondary	14.4	18.7
Post-secondary	3.3	7.5
Marital status		
Married monogamously	41.5	40.3
Married polygamously	49.9	47.8
Divorced/Separated	45.6	40.7
Widow/Widower	55.6	51.1
Never married	28.9	20.0
Household size		
1–3	36.4	37.1
4–6	41.9	40.3
7+	51.1	46.6
Age group		
11–19	48.0	52.7
20–39	40.2	40.8
40–59	48.1	43.3
60+	46.2	41.8
Total	44.3	42.1

Source: Computations are based on UNHS 2016/17 and UNHS 2019/20.

3.4. Dimension contribution to the MPI

For a more in-depth view on multidimensional poverty, it is useful to see how deprivation in each of the 12 indicators contributes to the overall multidimensional poverty index, not only at the national level but also in both rural and urban areas of Uganda, as well as at regional and sub-regional levels. Figure 3.4 presents the percentage contributions of various dimensions to the MPI. Overall, the living standards dimension contributed the most (36 percent) to the MPI, followed by health (25 percent), employment and financial inclusion (21 percent), and lastly education (19 percent).

FIGURE 3.4: DIMENSION CONTRIBUTIONS TO THE MPI (%)

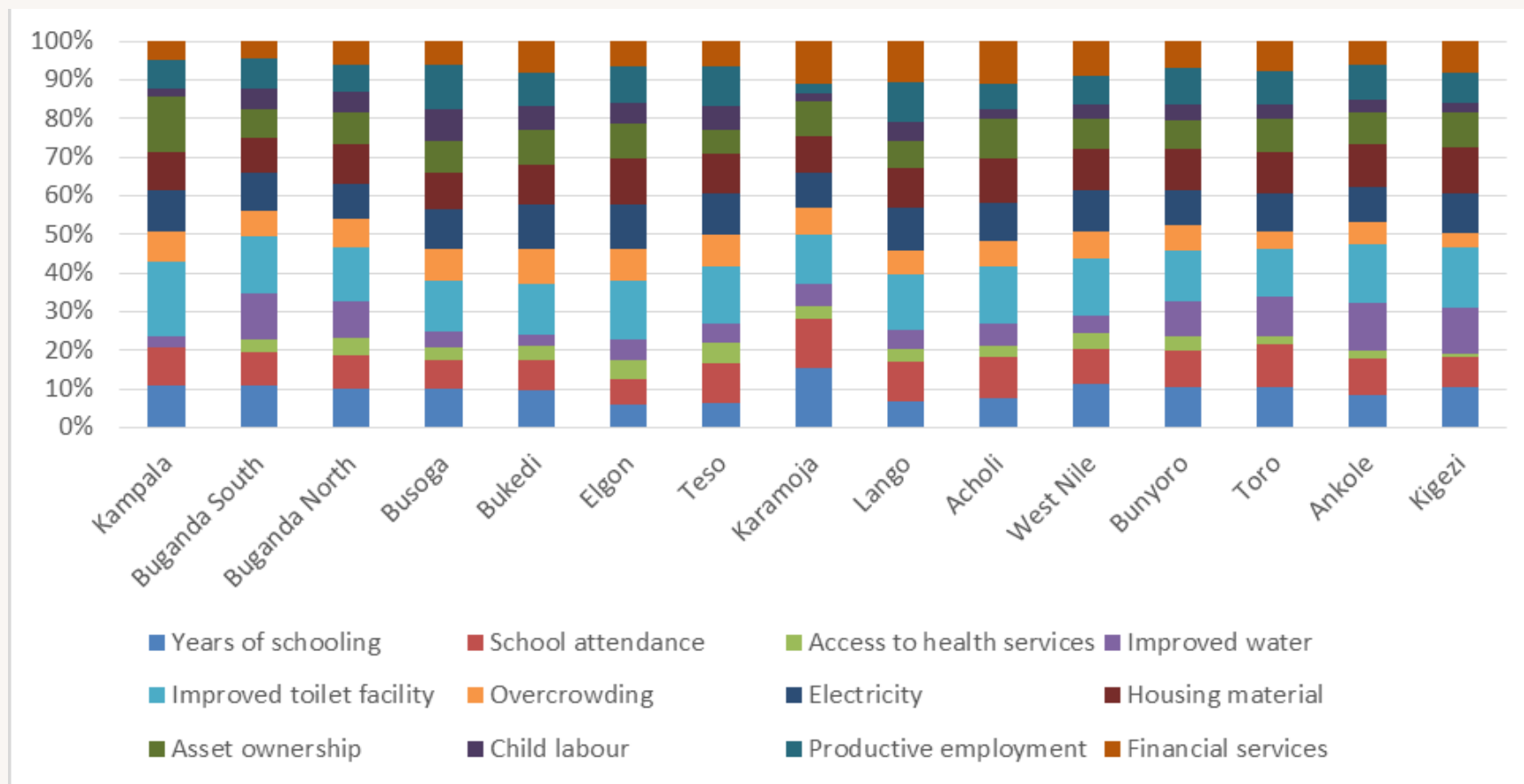


Source: UBOS computations are based on 2019/20 UNHS.

Figures 3.5a and 3.5b show that when equal weights are used, deprivation in improved toilet facilities, housing materials, years of

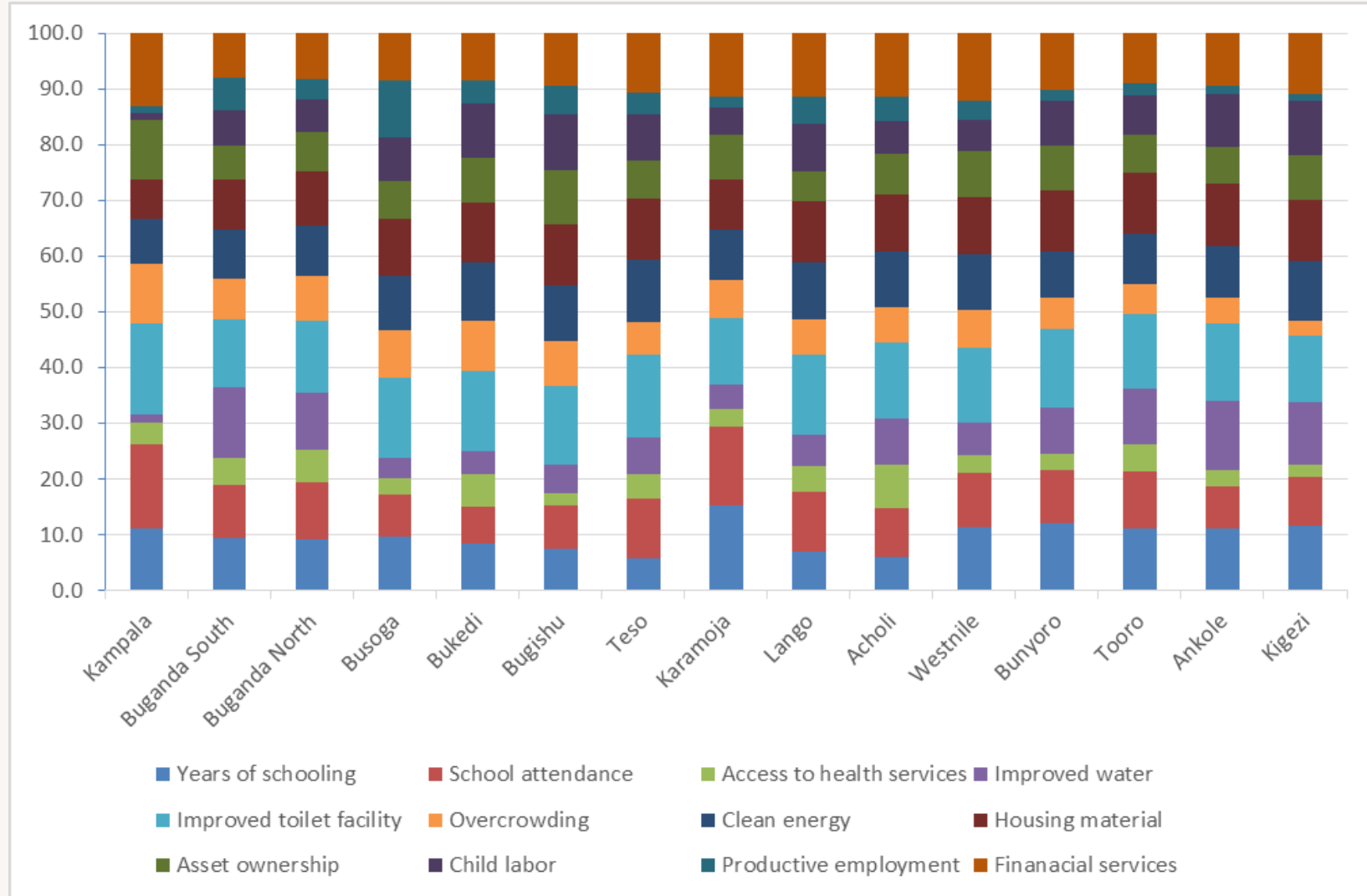
schooling, school attendance, financial services and access to clean energy were the highest contributors to the overall poverty index in both the 2016/17 and 2019/20 survey periods, with similar contributions in both rural and urban areas (Figure 3.6). By sub-region, Karamoja had the education dimension (30 percent) as contributing the most to the MPI, while in the Acholi sub-region the education dimension (20 percent) contributed the least to the MPI. Surprisingly, the education dimension contributed 26 per cent to the MPI.

FIGURE 3.5A: DIMENSION CONTRIBUTIONS TO THE MPI, BY SUB-REGIONS 2019/20 (%)



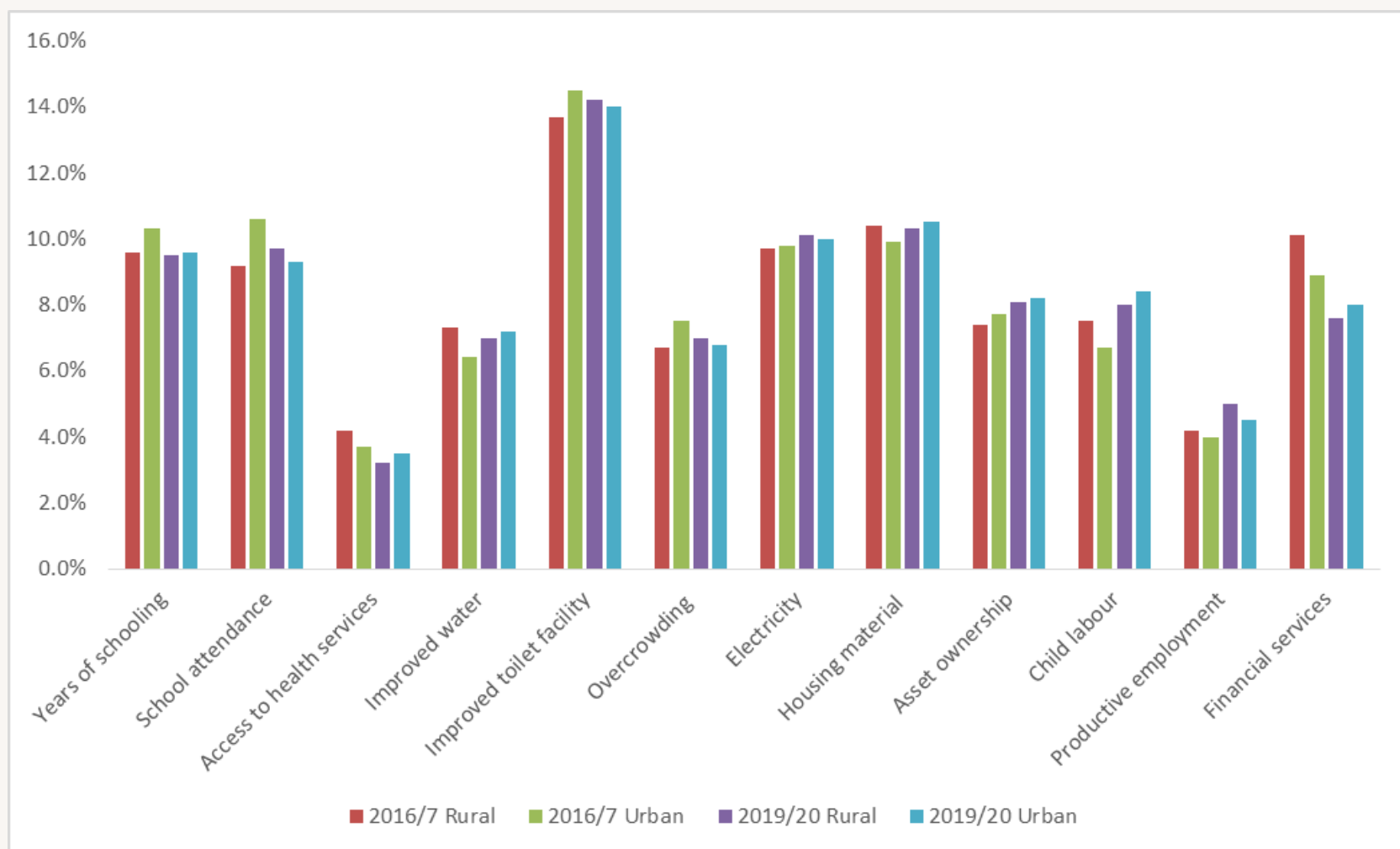
Source: UBOS computations are based on UNHS 2019/20,

FIGURE 3.5B: DIMENSION CONTRIBUTIONS TO THE MPI, BY SUB-REGIONS 2016/17 (%)



Source: UBOS computations are based on UNHS 2016/17.

FIGURE 3.6: DIMENSION CONTRIBUTIONS TO THE MPI BY RURAL AND URBAN AREAS (%)



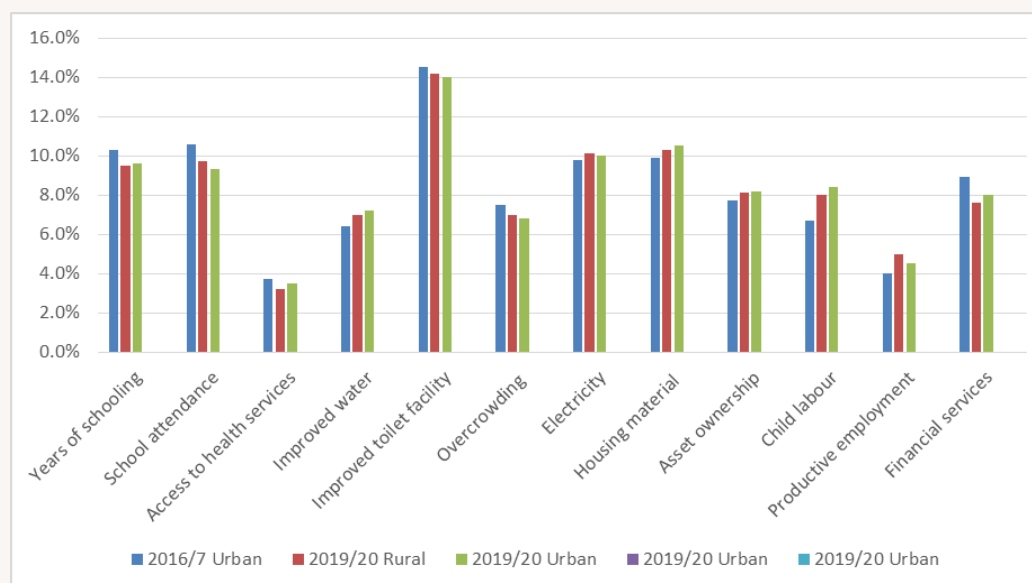
Source: UBOS computations are based on UNHS 2016/17 and UNHS 2019/20.

3. 5. Overlaps of multidimensional poverty and the monetary poverty

This section analyses whether there is overlap between the group of poor identified with the multidimensional poverty measure and the group of poor identified with the monetary poverty approach, to ascertain the value addition of multidimensional poverty measures. Such analysis is important for informing policy since poverty estimates are often used to inform programming and provision of services to those considered the poorest.

Figure 3.7 shows the percentage of the population deprived in each indicator by monetary poverty status. The income poor experience higher deprivation rates compared to the income non-poor. However, results further reveal that the non-income poor also suffered relatively high deprivations in toilet facilities, housing materials, access to clean energy and overcrowding in both 2016/17 and 2019/20. This is an indication that the income measure of poverty alone is not sufficient. This may partially be explained by the extent to which the government invests in public services. For instance, while individuals and households bear the cost of utility bills for water and electricity, the choice of how individuals and households can access utilities may depend on whether electricity grid connections and water connections exist where they live.

FIGURE 3.7: UNCENSORED HEADCOUNT RATIOS (DEPRIVATION RATES) BY INCOME POVERTY STATUS



Source: Computations based on UNHS 2016/17 and UNHS 2019/20.

Table 3.5 presents a comparison of monetary and multidimensional poverty. The results show that multidimensional poverty is always higher than monetary poverty at both the national and sub-regional levels. In addition, irrespective of the poverty measure used, the Karamoja region remains the poorest sub-region in Uganda. Although Western Uganda registered lower monetary poverty levels relative to the Northern and Eastern regions, the extent of multidimensional poverty is conspicuously high. Lango, Tooro, Acholi and Ankole had the highest differences between the two poverty measures in 2016/17 (ranging between 30% – 38%) while West Nile, Bunyoro, Lango and Teso registered the highest differences (ranging between 34% – 42%) between the two measures in 2019/20.

In light of the above, it is important to explore the extent to which multidimensional and monetary poverty measures identify the same person as poor or not. Such analysis is important for informing policy since poverty estimates are often used to inform programming and provision of services to those considered the poorest. Four subgroups of poverty were constructed to examine the extent to which the monetary and multidimensional poverty measures overlap or are different in identification of the poor:

- Group A: Neither monetary nor multidimensional poor
- Group B: Only monetary poor
- Group C: Only multidimensionally poor
- Group D: Both monetary and multidimensionally poor.

TABLE 3.5: MONETARY AND MULTIDIMENSIONAL POVERTY BY SUB-REGION (%)

Sub-region	Monetary poor 2016/17	Monetary poor 2019/20	Multidimensional poor	
			2016/17	2019/20
National	21.4	20.3	44.3	42.1
Kampala	2.6	1.6	2.7	0.4
Buganda South	9.0	6.9	18.3	17.9
Buganda North	11.0	13.6	29.0	31.5
Busoga	37.5	29.4	49.9	45.1
Bukedi	43.7	34.6	65.4	42.2
Elgon	34.5	13.2	55.6	40.5
Teso	25.1	22.0	52.7	55.6
Karamoja	60.2	65.6	86.7	84.9
Lango	25.6	23.5	56.3	57.0
Acholi	33.4	67.7	70.3	63.6
West Nile	34.9	16.9	62.8	59.1
Bunyoro	17.3	9.8	42.0	45.7
Tooro	11.1	12.8	49.0	45.5
Ankole	6.8	13.3	37.3	42.6
Kigezi	12.2	27.6	38.8	48.4

Source: Computations based on UNHS 2016/17 and UNHS 2019/20.

Table 3.6 provides information on the overlap and differences in headcounts of multidimensional and monetary poverty for the groups by rural/urban areas, regions and sub-regions. Per demographic group, the shares of the four poverty groups are presented as percentages of the total demographic group. For example, as of 2019/20, when considering all people living in rural areas of Uganda, 43.8 per cent are not poor, 32.9 per cent are only multidimensional poor, 6 per cent are only monetary poor and 14.7 per cent are both monetary and multidimensional poor. An insight into how the two methods identify the poor and where they differ might provide important input for the policy formulation and design process when effectively aiming to reduce poverty in its multiple dimensions.

Decomposition by area of residence shows that people living in rural areas are disproportionately poorer compared to those living in urban areas in all poverty groups. While 76 per cent of all people in urban areas are non-poor, 55 per cent of those in rural areas belong to one of the poverty groups.

Regional disparities are also large and observable for all poverty groups, although not with the same pattern. Not surprisingly, people living in the Northern region form the largest group of the poor, with nearly 70 per cent of them belonging to one of the poverty groups, followed by people living in the Eastern region with nearly 54 per cent of them belonging to one of the poverty groups (Table 3.6).



TABLE 3.6: OVERLAP AND DIFFERENCES IN MULTIDIMENSIONAL HEADCOUNT (H, k = 40%) AND MONETARY HEADCOUNT

	UNHS 2016/17				UNHS 2019/20				Total
	Group A	Group B	Group C	Group D	Group A	Group B	Group C	Group D	
	Neither monetary nor multidimensional poor	Only monetary poor	Only multidimensional poor	Both multidimensional and monetary poor	Neither monetary nor multidimensional poor	Only monetary poor	Only multidimensional poor	Both multidimensional and monetary poor	
National	51.2	4.5	27.4	16.9	52.4	5.5	27.4	14.7	100
Area of residence	***	***	***	***	***	***	***	***	***
Rural	41.4	4.7	33.4	20.6	43.8	6.0	32.9	17.4	100
Urban	81.7	4.2	8.9	5.2	76.1	4.1	12.2	7.5	100
Region	***	***	***	***	***	***	***	***	***
Central	76.5	3.4	14.7	5.4	76.1	3.5	15.3	5.2	100
Eastern	37.0	8.3	27.4	27.4	45.8	8.5	28.3	17.4	100
Northern	30.3	3.9	37.2	28.6	31.0	6.0	33.1	29.9	100
Western	55.5	2.5	33.2	8.9	50.6	4.3	35.0	10.1	100
Sub-region	***	***	***	***	***	***	***	***	***
Kampala	95.7	1.6	1.7	1.0	98.0	1.5	0.4	0.1	100
Buganda South	78.1	3.6	12.9	5.4	78.4	3.8	14.8	3.1	100
Buganda North	67.0	3.9	21.9	7.1	64.7	3.8	21.6	9.8	100
Busoga	39.3	10.9	23.3	26.6	47.0	7.9	23.6	21.5	100
Bukedi	27.6	7.0	28.7	36.6	42.6	15.2	22.7	19.4	100
Bugishu	39.0	5.5	26.5	29.0	55.3	4.2	31.5	9.0	100
Teso	40.2	7.2	34.8	17.9	38.1	6.3	39.9	15.7	100
Karamoja	11.8	1.5	28.0	58.7	13.1	2.0	21.3	63.6	100
Lango	42.5	1.2	41.9	14.5	39.2	3.8	37.4	19.7	100
Acholi	25.2	4.6	41.4	28.8	18.0	18.4	14.4	49.3	100
West Nile	30.6	6.6	34.5	28.3	38.6	2.4	44.5	14.5	100
Bunyoro	54.0	4.0	28.7	13.3	52.5	1.9	37.7	7.9	100
Tooro	49.0	2.0	39.9	9.1	51.7	2.8	35.5	10.0	100
Ankole	62.1	0.5	31.1	6.3	52.1	5.3	34.7	8.0	100
Kigezi	56.3	5.0	31.6	7.2	42.5	9.1	29.9	18.5	100

Note: * <0.10 , ** <0.05 ; *** <0.001 , significance level of chi-squared group equality of means.

Source: UBOS calculations based on UNHS 2016/17 and 2019/20.

Considerable statistically significant differences in poverty rates can be observed with respect to other demographic groups—sex, education level, marital status, age and household size—suggesting that the methods do not necessarily capture and identify the same groups of people as being poor (see Appendix, Table A.5). As noted by Levine et al. (2011), the policy implication of the differences in the two poverty measures is that targeting households for public services and other benefits using the multidimensional poverty measure would tend to reach quite different subpopulations than when using the monetary poverty measure.

3.6. Robustness check

The empirical multidimensional poverty analysis conducted in this report was complemented by several robustness tests, to check whether the conclusions would be different if different items were used, for example, a different poverty cut-off or weighting scheme. Detailed findings of the robustness tests are presented in the Annex.





CONCLUSIONS

This report utilised the Alkire-Foster method of poverty measurement to estimate the extent of multidimensional poverty at the national and sub-regional levels in Uganda. It further explored the drivers of multidimensional poverty and differences and complementarities between the income and multidimensional poverty measures. The main findings of the report are:

Monetary poverty is not a comprehensive measure of human welfare in Uganda. About 27 percent of the population are multidimensionally poor but income non-poor. Moreover, analysis based on UNHS 2019/20 show that the incidence of multidimensional poverty (42.1 percent) is more than double the incidence of income poverty (20.3 percent). This finding illuminates the importance of using a broader measure of poverty to understand non-monetary poverty and guide sectoral interventions.

The intensity of poverty among the poor is generally high and similar across the poor in different sub-regions. At the national level, the intensity of poverty among the poor was estimated at 54.7 percent. Disaggregation at the sub-regional level reveals, with the exception of Kampala, the rest of the multidimensionally poor in all sub-regions experience deprivation in more than two full dimensions (above 50 percent). Once the unadjusted headcount was adjusted for intensity, the MPI was estimated at 0.23. This means that multidimensionally poor people in Uganda experience 23 percent of the deprivations that would be experienced if all people in Uganda were deprived in all indicators.

Multidimensional poverty is largely driven by the living standards dimension, which accounts for 35 percent of the national MPI. At the indicator level, the main contributions to multidimensional poverty comes from deprivation in toilet facilities (14 percent), housing material (10 percent), access to clean energy (10 percent), years of schooling (10 percent), school (10 percent), financial services (8 percent) and child labour (8 percent), and the lowest contributions were from access to health services (3 percent).

There are marked geographical disparities in multidimensional poverty levels in Uganda. Multidimensionally poor people in the Northern and Eastern regions experience 36.2 percent and 24.5 percent respectively of the deprivations that would be experienced if all people in Uganda were deprived in all indicators, compared to 10.8 percent in Central and 24.2 percent in the Western region. At the sub-regional level, Karamoja, Acholi, Lango, West Nile, Kigezi, Bunyoro and Tooro registered the highest incidence and intensity and the highest MPI. The least incidence of poverty was reported in Kampala, Buganda South and Buganda North. The poor in these sub-regions are also highly deprived in toilet facilities, clean energy and housing materials.

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APPENDICES

TABLE A.1: UNCENSORED HEADCOUNT RATIOS BY SUB-REGIONS, UNHS 2016/2017

Sub-region	Years of schooling	School attendance	Access to health services	Improved water	Improved toilet facility	Over-crowding	Electricity	Housing material	Asset ownership	Child labour	Productive employment	Financial services
Kampala	0.039	0.166	0.066	0.054	0.692	0.559	0.132	0.070	0.207	0.005	0.004	0.175
Buganda South	0.107	0.179	0.156	0.352	0.550	0.464	0.357	0.251	0.219	0.122	0.136	0.193
Buganda North	0.139	0.219	0.202	0.380	0.606	0.552	0.499	0.417	0.343	0.166	0.122	0.242
Busoga	0.231	0.214	0.133	0.174	0.805	0.612	0.669	0.673	0.421	0.339	0.528	0.365
Bukedi	0.265	0.215	0.300	0.229	0.896	0.679	0.804	0.789	0.596	0.512	0.214	0.427
Bugishu	0.193	0.238	0.103	0.225	0.848	0.567	0.733	0.790	0.647	0.459	0.245	0.445
Teso	0.137	0.339	0.227	0.312	0.925	0.406	0.848	0.790	0.406	0.385	0.157	0.505
Karamoja	0.729	0.694	0.235	0.308	0.976	0.682	0.945	0.957	0.829	0.340	0.140	0.862
Lango	0.192	0.333	0.226	0.264	0.865	0.437	0.759	0.788	0.315	0.417	0.250	0.589
Acholi	0.210	0.335	0.476	0.464	0.931	0.532	0.824	0.909	0.557	0.333	0.237	0.673
West Nile	0.359	0.340	0.168	0.298	0.866	0.531	0.786	0.868	0.579	0.281	0.178	0.650
Bunyoro	0.267	0.251	0.142	0.400	0.797	0.400	0.478	0.770	0.467	0.332	0.079	0.404
Tooro	0.264	0.317	0.233	0.494	0.836	0.384	0.575	0.816	0.387	0.308	0.090	0.382
Ankole	0.215	0.179	0.135	0.546	0.804	0.315	0.570	0.731	0.313	0.349	0.057	0.405
Kigezi	0.226	0.188	0.091	0.534	0.675	0.192	0.704	0.787	0.421	0.357	0.051	0.405
National	0.216	0.258	0.186	0.339	0.776	0.487	0.613	0.651	0.413	0.296	0.178	0.408

Notes: Figures in the table refer to the proportion of the population deprived in each indicator.

Source: UBOS computation based on UNHS 2016/217.

TABLE A.2: UNCENSORED HEADCOUNT RATIOS BY SUB-REGIONS, UNHS 2019/2020

Sub-region	Years of schooling	School attendance	Access to health services	Improved water	Improved toilet facility	Over-crowding	Electricity	Housing material	Asset ownership	Child labour	Productive employment	Financial services
Kampala	0.041	0.110	0.053	0.018	0.671	0.508	0.067	0.145	0.167	0.012	0.028	0.021
Buganda South	0.124	0.151	0.091	0.338	0.653	0.383	0.402	0.305	0.315	0.222	0.107	0.071
Buganda North	0.173	0.200	0.157	0.363	0.687	0.446	0.507	0.475	0.410	0.251	0.172	0.159
Busoga	0.231	0.195	0.146	0.190	0.669	0.576	0.676	0.630	0.472	0.549	0.359	0.226
Bukedi	0.226	0.230	0.141	0.127	0.634	0.615	0.831	0.676	0.483	0.403	0.264	0.271
Elgon	0.119	0.137	0.189	0.201	0.824	0.432	0.760	0.807	0.497	0.447	0.187	0.198
Teso	0.167	0.292	0.286	0.241	0.902	0.552	0.878	0.796	0.371	0.565	0.263	0.302
Karamoja	0.688	0.592	0.241	0.392	0.972	0.661	0.886	0.933	0.870	0.173	0.126	0.759
Lango	0.171	0.301	0.195	0.205	0.880	0.474	0.857	0.745	0.427	0.565	0.238	0.463
Acholi	0.220	0.347	0.147	0.291	0.927	0.502	0.819	0.917	0.777	0.341	0.119	0.551
West Nile	0.325	0.282	0.220	0.229	0.926	0.513	0.849	0.845	0.536	0.360	0.188	0.416
Bunyoro	0.235	0.231	0.133	0.410	0.659	0.399	0.636	0.729	0.435	0.518	0.178	0.259
Toro	0.229	0.290	0.079	0.483	0.666	0.314	0.683	0.790	0.518	0.388	0.160	0.302
Ankole	0.172	0.209	0.082	0.614	0.904	0.337	0.550	0.737	0.466	0.453	0.143	0.204
Kigezi	0.229	0.204	0.040	0.589	0.869	0.205	0.719	0.810	0.588	0.377	0.088	0.338
Total	0.205	0.232	0.142	0.319	0.765	0.452	0.647	0.649	0.461	0.379	0.182	0.263

Note: The figures in the table represent the proportion of people who are deprived in each indicator, regardless of being deemed multidimensionally poor.

Source: UBOS computations based on UNHS 2019/20.

TABLE A.3: CENSORED HEADCOUNT RATIOS AT INDICATORS LEVEL (= 40%) BY SUB-REGIONS

Sub-regions	Years of schooling	School attendance	Access to health services	Improved water	Improved toilet facility	Over-crowding	Electricity	Housing material	Asset ownership	Child labour	Productive employment	Financial services
Kampala	0.2	0.1	0.0	0.1	0.4	0.2	0.3	0.3	0.4	0.2	0.0	0.1
Buganda South	8.4	6.3	3.6	13.9	16.9	10.1	14.7	13.5	11.5	9.0	5.8	5.1
Buganda North	13.2	11.6	9.1	18.9	27.3	19.4	24.6	27.0	22.1	13.8	10.7	12.4
Busoga	19.4	14.7	9.3	12.4	38.4	32.3	39.2	37.3	31.6	33.7	23.7	18.5
Bukedi	17.6	13.9	9.4	8.3	34.8	32.7	40.2	37.4	32.4	23.1	16.9	21.6
Elgon	9.6	11.0	12.3	12.4	38.3	26.1	37.9	39.1	29.7	23.6	13.0	16.3
Teso	15.7	24.9	19.6	18.5	54.5	39.1	52.3	51.8	29.9	37.9	21.5	24.7
Karamoja	68.2	54.7	22.7	37.2	84.8	60.4	79.9	84.3	80.4	16.2	12.2	74.4
Lango	16.7	25.8	13.6	17.8	54.4	30.8	55.6	53.3	34.6	39.1	18.1	40.4
Acholi	21.2	29.7	12.2	24.5	63.0	37.3	56.3	62.8	58.6	27.6	10.4	47.5
West Nile	30.0	24.1	17.0	18.7	58.5	37.9	55.8	57.4	43.1	28.8	14.8	36.6
Bunyoro	20.2	19.1	10.4	27.4	38.6	25.7	35.7	42.4	30.1	27.7	11.3	21.3
Toro	20.2	22.0	6.4	29.8	36.7	17.3	39.3	43.1	33.4	25.3	11.1	23.0
Ankole	15.1	17.6	5.5	34.0	42.1	21.1	33.0	39.7	29.7	24.8	10.0	16.6
Kigezi	21.1	16.2	2.5	36.3	47.1	14.5	42.3	47.4	37.9	23.9	6.8	25.2

Note: The figures in the table represent the proportion of people who are multidimensionally poor and deprived in each indicator at the same time.

Source: UBOS computations based on UNHS 2019/20.

TABLE A.4: CENSORED HEADCOUNT RATIOS AT INDICATORS LEVEL (= 40%) BY SUB-REGIONS

Sub-region	Years of schooling	School attendance	Access to health services	Improved water	Improved toilet facility	Over-crowding	Clean energy	Housing material	Asset ownership	Child labour	Productive employment	Financial services
Kampala	1.1	1.5	0.6	0.2	2.5	2.2	1.7	1.4	2.2	0.2	0.2	2.0
Buganda South	7.5	7.6	5.9	15.2	14.7	11.8	14.3	14.2	10.0	7.5	7.1	9.6
Buganda North	11.2	12.7	10.9	18.6	24.2	19.7	22.4	23.5	17.8	10.7	6.9	15.2
Busoga	21.3	16.3	9.2	12.2	47.3	36.9	43.1	45.2	29.9	25.7	33.0	28.1
Bukedi	24.3	18.9	25.4	17.9	63.1	51.5	60.7	61.5	46.7	42.9	17.3	37.4
Bugishu	18.2	19.0	8.1	18.6	52.2	38.9	49.3	53.7	47.9	36.2	18.9	34.9
Teso	13.1	24.7	15.4	22.5	51.5	26.5	51.6	50.8	31.9	28.1	13.4	37.4
Karamoja	72.5	66.9	22.1	30.6	86.5	64.1	85.4	85.5	76.8	33.3	14.0	81.9
Lango	17.8	27.1	18.0	21.1	54.5	31.9	52.7	54.7	27.4	32.4	19.0	43.5
Acholi	20.4	29.4	39.4	41.4	68.7	43.5	66.2	69.5	49.3	30.0	21.6	57.8
West Nile	33.5	27.9	14.2	25.3	59.1	39.3	58.9	60.4	48.3	24.2	14.7	53.7
Bunyoro	22.8	17.8	7.8	23.9	39.2	21.6	31.2	40.6	30.5	23.1	5.5	28.5
Tooro	24.2	22.0	15.8	32.7	44.2	23.2	39.6	47.7	29.2	22.9	7.3	29.4
Ankole	17.8	12.3	7.4	29.9	33.8	14.7	30.0	35.9	21.7	22.7	4.0	22.8
Kigezi	19.4	14.8	5.7	27.6	30.2	9.5	35.7	36.8	26.8	24.4	3.1	27.6
National	19.3	18.6	12.5	21.6	41.1	26.9	38.9	41.5	29.5	22.3	12.6	30.0

Note: The figures in the table represent the proportion of people who are multidimensionally poor and deprived in each indicator at the same time.

Source: UBOS computations based on UNHS 2016/17.

TABLE A.5: OVERLAP AND DIFFERENCES IN MULTIDIMENSIONAL HEADCOUNT (H₄₀ = 40%) AND MONETARY HEADCOUNT, BY DEMOGRAPHIC CHARACTERISTICS

	UNHS 2016/17				UNHS 2019/20				Total
	Group A	Group B	Group C	Group D	Group A	Group B	Group C	Group D	
	Neither monetary nor multidimensional poor	Only monetary poor	Only multidimensional poor	Both multidimensional and monetary poor	Neither monetary nor multidimensional poor	Only monetary poor	Only multidimensional poor	Both multidimensional and monetary poor	
Sex of the household member	***	***	***	***	***	***	***	***	
Female	46.7	3.5	31.7	18.2	47.1	4.0	30.8	18.1	100
Male	52.8	4.9	25.9	16.4	54.4	6.1	26.0	13.4	100
Income quintiles	***	***	***	***	***	***	***	***	
Quintile 1	0.0	19.9	0.1	80.0	0.4	26.2	1.7	71.7	100
Quintile 2	38.5	2.8	54.3	4.4	41.7	1.5	54.7	2.1	100
Quintile 3	57.4	0.0	42.6	0.0	57.2	0.0	42.8	0.0	100
Quintile 4	71.3	0.0	28.7	0.0	72.7	0.0	27.3	0.0	100
Quintile 5	88.6	0.0	11.4	0.0	89.7	0.0	10.4	0.0	100
Marital status of household member	***	***	***	***	***	***	***	***	
Married monogamous	53.9	4.6	25.8	15.6	56.5	5.8	25.7	12.0	100
Married polygamous	44.5	5.5	27.9	22.1	47.5	6.1	27.5	19.0	100
Divorced/Separated	51.1	3.3	29.5	16.1	58.0	3.7	28.3	10.0	100
Widow/Widower	40.0	4.3	36.5	19.2	42.6	4.0	39.5	13.9	100
Never married	69.6	1.5	20.7	8.2	54.3	6.0	25.3	14.4	100
Household size	***	***	***	***	***	***	***	***	
1–3 people	61.7	1.9	30.4	6.0	60.0	2.9	30.2	6.9	100
4–6 people	54.2	3.8	26.4	15.5	54.3	5.4	26.2	14.2	100
7+	42.2	6.8	27.1	24.0	46.6	6.8	27.6	18.9	100
Age in completed years	***	***	***	***	***	***	***	***	
11–19	51.1	1.0	37.5	10.4	47.1	0.2	36.6	16.1	100
20–39	55.5	4.3	25.2	15.0	53.6	5.6	26.1	14.7	100
40–59	47.3	4.6	29.1	19.0	51.2	5.5	27.9	15.4	100
60+	48.4	5.4	29.2	17.0	52.7	5.4	28.6	13.2	100

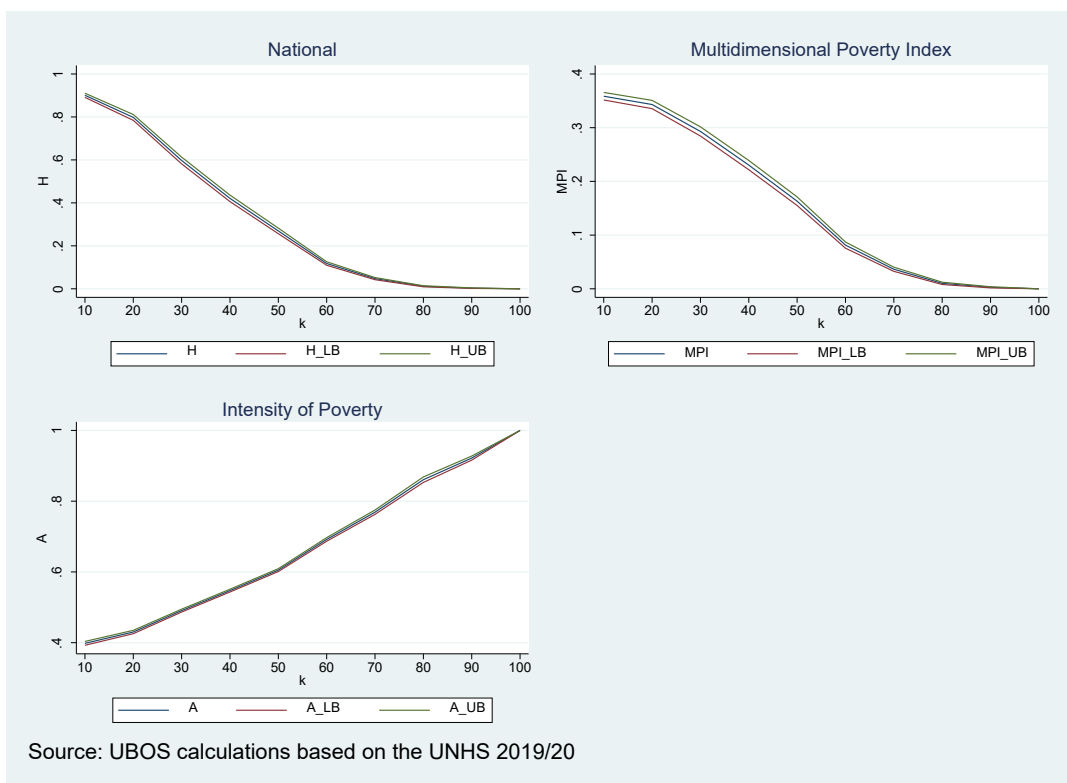
Note: * <0.10 , ** <0.05 ; *** <0.001 , significance level of chi-squared group equality of means.

Source: UBOS calculations based on UNHS 2016/17 and 2019/20.

Robustness analysis for MPI

Although Uganda's MPI is computed using a robust Alkire-Foster method, given its significance, the empirical analysis was deepened by performing robustness tests in order to validate the robustness of the MPI and its component indices, so that it can be justifiably used for policy purposes. The first was to test for the sensitivity of the poverty measures to changes in the value of the poverty cut-off k , to determine the extent to which the conclusions are sensitive to the number of deprivations required for a person to be considered multidimensionally poor. **Figure A.1** confirms that the level, incidence and intensity of multidimensional poverty (MPI, H and A) for various levels of the poverty cut-off, follows the expected pattern. For instance, when $K=30$ percent MPI is 0.31, the incidence is 75 percent, indicating that a large majority of the population is deprived in at least one of the weighted dimensions; and intensity is 50 percent, meaning that 75 percent of the population are, on average, deprived in close to half the dimensions. When k is larger than 70 percent (3 or more dimensions), MPI drastically reduces to 8 percent, implying that a few people are deprived in more than three quarters of the weighted dimensions. Figure A.1 suggest that there are no sharp discontinuities in MPI, H or A , around the chosen K -value of 40 percent.

FIGURE A.1: HEADCOUNT, INTENSITY AND MPI FOR DIFFERENT VALUES OF THE POVERTY CUT-OFF



The second robustness check was with respect to dominance checks for regions and sub-regional indices. **Figure A.2** and **Figure A.3** plot the incidence of poverty by region and sub-regions

for various levels of the poverty cut-off, K . Unlike the case of regions, **Figure A.3** shows that for all poverty cut-offs, there is not a clear ranking in terms of poverty between most sub-regions. However, the incidence of multidimensional poverty is always higher for Karamoja compared with other sub-regions. Further, Kampala has the lowest levels of incidence of multidimensional poverty until a poverty cut-off equal to 80 percent.

FIGURE A.2: REGIONAL POVERTY RATES (H) FOR DIFFERENT VALUES OF THE POVERTY CUT-OFF

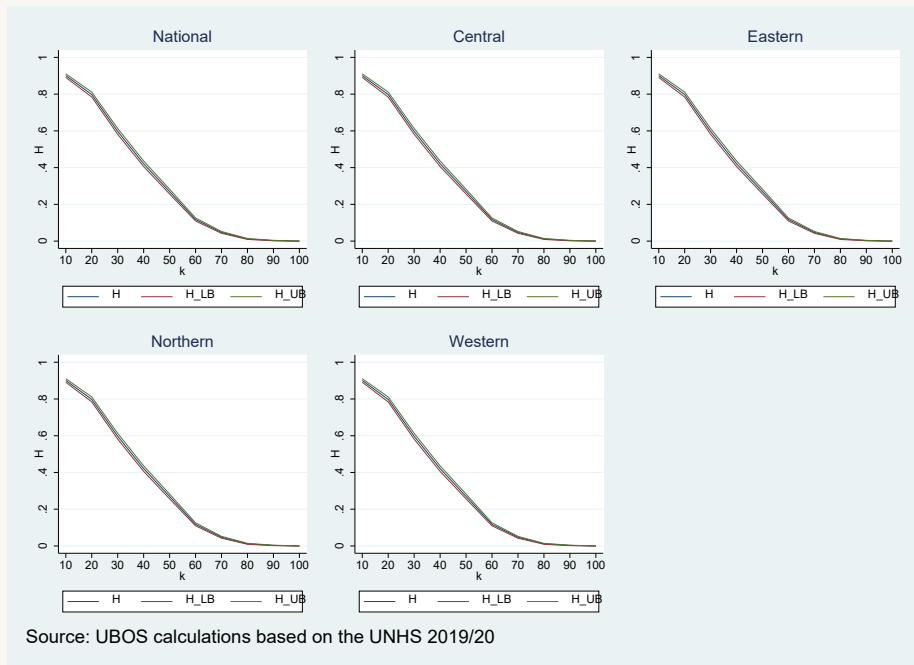


FIGURE A.3: SUB-REGIONAL POVERTY RATES (H) FOR DIFFERENT VALUES OF THE POVERTY CUT-OFF,

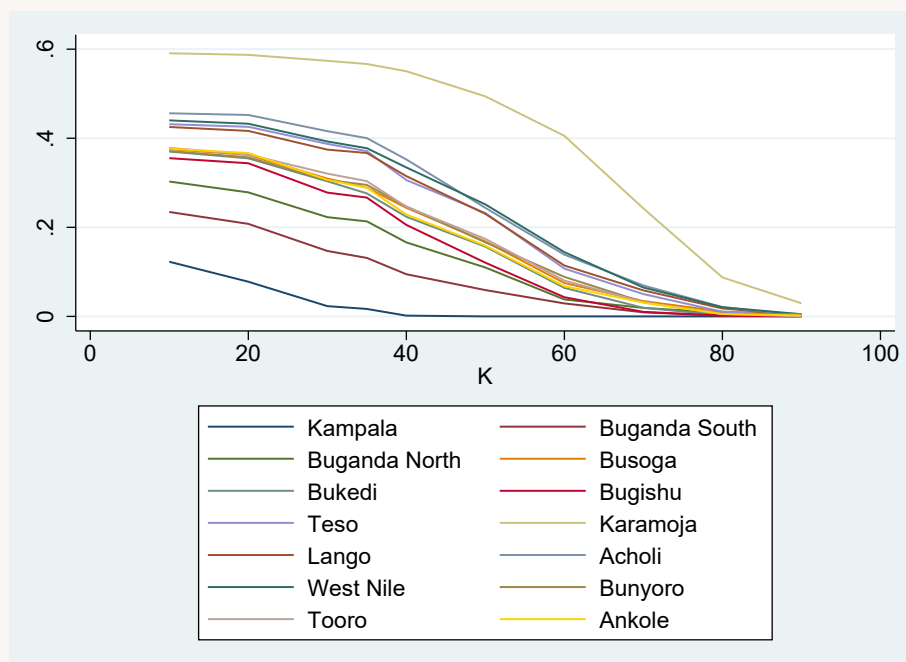


Figure A.4 and **Figure A.5** illustrate dominance checks of the regional and sub-regional *MPIs* for various levels of the poverty cut-off, *K*. Since the lines barely intersect between *K*-values of 10 to 70 percent, it means that the adjusted headcount (*MPI*) is robust to changes in the poverty cut-off from 10 percent to about 70 percent. This implies that the same broad diagnosis of poverty level by regions and sub-regions holds, and so does the ranking between the sub-regions.

FIGURE A.4: DOMINANCE OF REGIONAL MPI FOR DIFFERENT VALUES OF THE POVERTY CUT-OFF

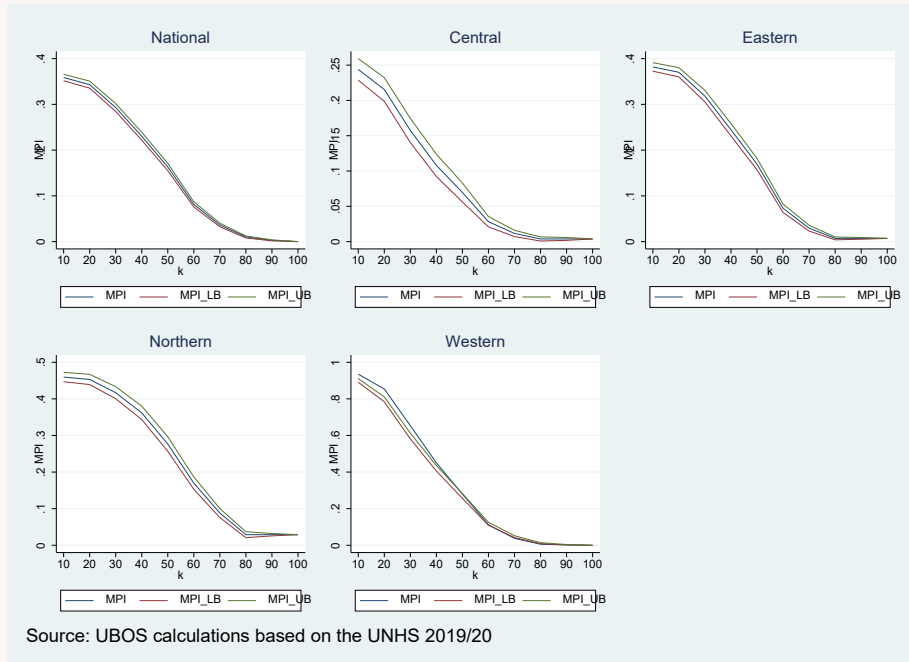
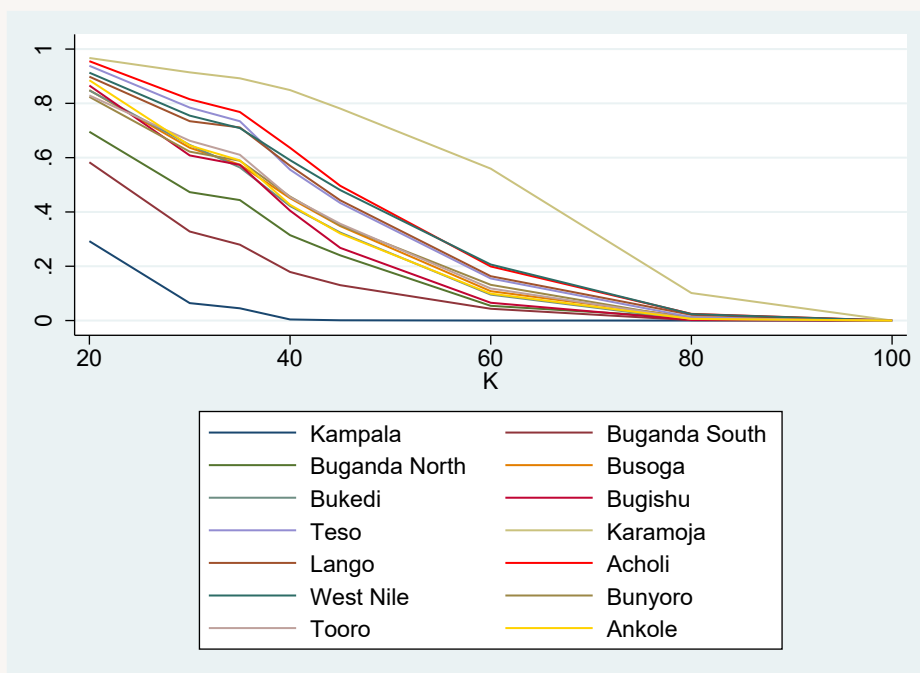


FIGURE A.5: DOMINANCE OF SUB-REGIONAL MPI FOR DIFFERENT VALUES OF POVERTY CUT-OFF



The third robustness test was with respect to correlation among sub-regions' rankings for different poverty cut-offs. **Table A.6** presents the Spearman and Kendall rank correlation coefficients between the sub-regions' rankings using the selected poverty cut-off of 40 percent, and the ranking for alternative poverty cut-offs around 40 percent. It can be seen that the Spearman coefficient is around 0.75 and 0.90 for $k=25$ percent and $k=60$ percent. The Kendall coefficient is around 0.89 and 0.96 for values between $k=25$ percent and $k=60$ percent, implying that around 90 percent of the comparisons are concordant in each case.

TABLE A.6: CORRELATION AMONG SUB-REGIONS' RANKINGS FOR DIFFERENT POVERTY CUT-OFFS

		k = 40
k = 25	Spearman	0.7524
	Kendall Tau-b	0.8929
k = 30	Spearman	0.8286
	Kendall Tau-b	0.9393
k = 35	Spearman	0.8667
	Kendall Tau-b	0.9643
k = 45	Spearman	0.9238
	Kendall Tau-b	0.9821
k = 50	Spearman	0.8857
	Kendall Tau-b	0.9714
k = 55	Spearman	0.8476
	Kendall Tau-b	0.9571
k = 60	Spearman	0.9048
	Kendall Tau-b	0.9607

Source: UBOS computations based on UNHS 2019/20.

When the rank correlation for the Spearman and Kendall Tau-b coefficients were calculated for different combinations of weights (each dimension taking the weight of 40 percent and the other three 20 percent each), the analysis revealed that for the five structures the Spearman coefficient is higher than 0.92 and the Kendall Tau-b coefficient is higher than 0.90, thus, more than 90 percent of the comparisons are concordant in each case (**Table A.7**), establishing the robustness of the MPI to a range of plausible weights from 20 percent to 40 percent per dimension.

TABLE A.7: CORRELATION AMONG SUB-REGION'S RANKINGS FOR DIFFERENT WEIGHT STRUCTURES, 2019/2020

			MPI Weights 1	MPI Weights 2	MPI Weights 3	MPI Weights 4	MPI Weights 5
MPI Weights 1	Equal weights: 25% each dimension		1				
MPI Weights 2	40% Health 20% Education 20% Living standards 20% Employment and financial inclusion	Spearman	0.8857	1			
		Kendall	0.9679				
MPI Weights 3	20% Health 40% Education 20% Living standards 20% Employment and financial inclusion	Spearman	0.9048	0.8286	1		
		Kendall	0.9786	0.9321			
MPI Weights 4	40% Employment and financial inclusion 20% Education 20% Health 20% Living standards	Spearman	0.8476	0.7333	0.8667	1	
		Kendall	0.9536	0.8893	0.9607		
MPI Weights 5	40% Living standards 20% Education 20% Health 20% Employment and financial inclusion	Spearman	0.8667	0.8286	0.8476	0.7905	1
		Kendall	0.9536	0.9214	0.9571	0.9179	

Source: UBOS computations based on UNHS 2019/20.



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