Multidimensional Poverty in Zimbabwe: A Gender Perspective

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ABSTRACT

This study investigates whether male-headed households (MHHs) and female-headed households (FHHs) in Zimbabwe experience multidimensional poverty differently using data for 2011/12 and 2017. Results do not present evidence of a gender gap in 2011, but in 2017 FHHs had a higher multidimensional poverty incidence than MHHs. This outcome was more pronounced among rural than urban households. De jure FHHs were however poorer than de facto FHHs. Generally, households headed by widowed/divorced men and women were poorer than those headed by their married/single counterparts. They also incurred a temporal increase in poverty while others had a decline. In both periods, low asset base, lack of access to electricity, unclean sources of fuel for cooking and low per capita consumption expenditure were key contributors to poverty for both MHHs and FHHs. Therefore strategies to address multidimensional poverty in Zimbabwe should be gender sensitive and consider the diversity among FHHs as well as among rural and urban households. The policy actions can benefit from incorporating the distinguished contributory factors.

KEY WORDS:

Multidimensional poverty; recovery period; Zimbabwe Gender Household

1. Introduction

Zimbabwe has historically been grappling with non-trivial levels of poverty. The problem has been closely following the country's socio-economic developments where three unique economic phases have be identified: a stable period (1980-1997), a crisis period (1999-2008) and a subsequent recovery period (Stoeffler et al. 2016). Regardless of the recovery period, extreme money-metric poverty remains high at both individual and household levels. In 2011, 22.5% of individuals in Zimbabwe were extremely poor which worsened to 29.3% in 2017. This also applied to 16.2% of households in 2011 which increased to 21.9% in 2017 (Zimstat 2019).

When considered by sex of the household head, male-headed households (MHHs) were generally poorer than female-headed households (FHHs) in 2017 (Zimstat 2019, Rogan 2016, Liu et al. 2017). However, this conclusion is based on a unidimensional assessment of well-being which necessitates complementary studies that view well-being from a gender sensitised multidimensional perspective. This is important as the foremost sustainable development goal (SDG) has a set target for countries to at least halve the proportion of men, women and children that suffer from multidimensional poverty (UNDP 2019). In line with SDG 5, achieving this would serve to promote gender equity which is a prerequisite for economic development (Klasen and Lamanna 2009, FAO 2017).

Currently, there is a dearth of recent Zimbabwean literature that measures the multidimensional gender gap in poverty, especially in the economic recovery period, to check progress. Yet such studies are useful for designing relevant social assistance policies. Available studies on multidimensional poverty include Stoeffler et al. (2016) and Bérenger (2017) who focussed on temporal changes at the national level, for 2001-2011 and 2005-2015 respectively. Musiwa (2019) investigated multidimensional child poverty considering gender and location. Horrell and Krishnan (2007) compared the situation of de facto and de jure FHHs to that of MHHs using 2001 survey data. More recently, Thobejane and Nyathi (2018) focused on poverty among FHHs in one rural province (Matabeleland South Province). While these studies enlighten us on the existence of multidimensional poverty in Zimbabwe, they do not educate us on a more recent picture of the situation by sex of the household head, across all provinces and over time. Hence, this study fills this gap in the literature, which is important for informing poverty eradication policies.

It is noteworthy that there is no universally accepted definition of household headship. However, Brown and van de Walle (2020) note that MHHs constitute the majority and culturally expected household type in sub-Saharan Africa, while FHHs are mostly an aftermath of marital shocks such as widowhood or divorce. As such, headship can be useful for identifying poor households in African countries such as Zimbabwe, regardless of recent calls to abandon this dimension of welfare comparisons. Standard welfare comparisons for MHHs and FHHs, nonetheless, require a consideration of two confounding factors which

are particularly correlated to poverty in FHHs: marital status and household characteristics (ibid.).

In light of the above, our study has three objectives. First, we investigate whether there were differences in experiences of multidimensional poverty between FHHs and MHHs in Zimbabwe during 2011-2017, and whether this changed over time. Second, we analyse whether there were heterogeneities in gendered household poverty experiences by geographic area and marital status of the household head. Specifically, we explore multidimensional poverty experiences of MHHs and FHHs within rural/urban areas. We also separately compare the situation of de facto and de jure FHHs to that of MHHs, given that MHHs are the 'norm' in sub-Saharan Africa. We subsequently compare the situation of MHHs and FHHs by type of marital status, to account for heterogeneity within household type. The results assist with information on whether poverty reduction policies in Zimbabwe should be sensitive to gender and marital status of the householder. The third objective is to explore the most important contributors to poverty for MHHs and FHHs and inform targeted counter-policies. We achieve the objectives using the Multidimensional Poverty Index and Poverty Income Consumption and Expenditure Survey data for 2011/12 and 2017, produced by Zimstat.

The rest of the study is structured as follows. Section 2 presents the contextual background, Section 3 discusses the methodology and describes the data used for analysis. Results are presented and discussed in Section 4, and the conclusion is in Section 5.

2. Background

2.1 National Picture

Zimbabwe gained political independence from minority white rule in 1980. The Government of Zimbabwe (GoZ) followed a socialist ideology with redistributive policies that required a large public expenditure on the social sector (UNDP 2010). This saw the period 1980-1990 registering some progress towards poverty reduction among the previously marginalised black majority (Sibanda and Makwata, 2017). Living standards also improved due to minimum wages and policies that promoted job security (Zhou and Masunungure, 2006). However, the introduction of the Economic Structural Adjustment Program in 1991 saw a reduction in social sector spending. This reversed most gains the country had made towards poverty reduction. The economy plunged into a crisis during 1997-2008. This partly stemmed from unbudgeted program such as payments to veterans of the nation's liberation war. These triggered unsustainable budget deficits, and high levels of inflation and interest rates (RBZ 2009, Sibanda and Makwata, 2017). The country also embarked on the chaotic Fast Track Land Reform Program (FTLRP) in early 2000s which had devastating effects on the economy and well-being of many households (Stoeffler et al. 2016).

In 2008, the Global Political Agreement (GPA) was signed and it aimed to redress the socio-

economic challenges. A number of pro-poor policy measures were implemented through the 2009 national budget. These include resource allocations in support of restoring public service delivery in health and education and improving social protection for vulnerable groups. Regardless of these gains, the country faced challenges which include serious power shortages and inadequate supply of treated water to industry (Sibanda and Makwata 2017). This increased unemployment due to company closures – at least 4,610 companies closed between 2011 and 2014, forcing 55,443 people into joblessness (GoZ 2014). Capacity utilisation in the formal sector was low at 36.4% which led at least 80% of the employed population into informal employment (Sibanda and Makwata 2017, Confederation of Zimbabwe Industries 2021).

In 2013, following the GPA, the country was still facing economic challenges including poor service delivery by local authorities, water shortages, power shortages, foreign currency shortages, market distortions and rising inflation. These were aggravated by a severe 2018/19 drought which caused food insecurity. A humanitarian crisis also ensued from cyclone Idai and left about 270,000 people in urgent need of assistance (GoZ 2019). This saw the economy registering a negative economic growth rate of -6.5% in 2019.

2.2 Gender perspective of poverty in Zimbabwe

Evidence from other developing countries shows that MHHs and FHHs experience multidimensional poverty differently (Buvnic and Gupta 1997, Klasen et al. 2015, Rogan 2016, Liu et al. 2017). This stems from differences in power dynamics, economic opportunities, and cultural norms. On the one hand, some studies which include African countries find FHHs to be the poorest of the poor (Buvinic and Gupta 1997, Milazzo and van de Walle 2017. Agbodji et al. 2013. Rogan 2016). Others find that FHHs are not poorer than MHHs. For instance, Quisumbing et al. (2001) using survey data for Africa, Asia, and Central America, found that FHHs were poorer than MHHs in only 2 of 10 countries. Due to these empirical irregularities, results from existing literature cannot be generalised.

There are several factors that may place FHHs at high risk of poverty compared to MHHs in Zimbabwe. Informal employment is generally a large source of employment for women, who constitute 54% of the workforce (Zimstat 2019). In 2017, the money-metric poverty rate among households without salaried workers was 89% higher than that for households with a salaried worker. This may expose FHHs to poverty, given that most of them do not have adult male members. However, with the considerable labour market informality in Zimbabwe, many men are also suffering from underemployment and low salaries. The welfare impact could even be worse for MHHs who lost their meaningful source of survival in the formal sector.

Female householders can be classified as de jure or de facto. De facto female headship occurs when a woman is head because her husband is temporarily absent. De jure female heads are identified by marital status such as never married, divorced/separated or

widowed (Zimstat 2019, Horrell and Krishnan 2007). This distinction has implications for the prevalence of poverty. FHHs who receive transfers from a male member are presumably are better-off in terms of consumption or income than others (Horrell and Krishnan 2007). In Africa, some widow-headed households have been identified as significantly impoverished (Appleton 1996, van de Walle 2013). This could be partly due to lack of spousal support and expenditure of resources during illness and death (Kennedy and Haddad 1994). However, in 2017 MHHs were economically poorer than FHHs, but de jure FHHs were poorer than de facto FHHs.

Women in Zimbabwe comprise 54.6% of the workforce in the agriculture, fishery and forestry sector, which is the mainstay of the economy. The contribution of women in the sector is largely unpriced as they disproportionately work as unpaid family workers, and they comprise 70% of household and family labour in rural areas (FAO 2017, Zimstat 2016). Agricultural resource ownership is also skewed towards men. For instance, of the 96% agricultural land acquired under the FTLRP, only 16% was allocated to women (GoZ 2013). This compromises rural FHHs' participation and productivity in agriculture.

In Zimbabwe, 69.2% of all households are situated in rural areas which are disproportionately affected by climate change factors: frequent droughts, floods, erratic rainfall and extreme temperatures. Rural areas also have lower access to basic services than urban areas. This has a disproportionate effect on women's livelihoods by increasing the time-use burden and reducing economic opportunities, with negative effects on FHHs. Against this background, a temporal and gendered analysis of multidimensional poverty in Zimbabwe is pertinent.

3. Methodology and Data

3.1 Methodology

We utilise the Alkire and Foster (AF) (2011a and 2011b) Multidimensional Poverty Index (MPI) based on the 'counting' method to achieve our objectives. The AF method measures poverty at household level and allows aggregation across MHHs and FHHs. It is sufficiently flexible to include several dimensions of welfare, and applies to ordinal data. The MPI is decomposable to show the relative contribution of deprivations in different welfare dimensions to poverty, by sex of the householder. This is fruitful for identifying any differences in poverty dimensions that FHHs and MHHs are deprived.

Implementation of the AF method relies on a dual cut-off identification strategy. In the first step, five welfare dimensions d have been identified as discussed below. Each dimension has been assigned weight W^d given its relative importance. J indicators were chosen to capture each dimension and each has been assigned an equal sub-weight of the dimension (W_j^d) Then the first set of deprivation cut-offs $Z_j^d \in Z$ has been applied to each indicator in a dimension. Each cut-off has been set at discretion and presents the minimum achievement

for a household to be classified as not deprived in that dimension. A household is deprived in the J^{th} indicator if its achievement lies below Z_j^d . For each household, the weights for dimensions that fall below the cut-offs were added Then the second cut-off has been set at one third of the dimensions following Alkire and Santos' (2010) Global Poverty Index (GPI). A household is considered as multidimensional poor if its weighted deprivation count is at least *k* .However, robustness checks are conducted to check sensitivity of the analysis to choice of *k.*

Depending on the relative magnitudes of c_i and k households were then classified as multidimensional poor or non-poor. If for a given household $c_i \geq k$ then it is multidimensional poor. The headcount poverty ratio is calculated as $H = \frac{n}{N}$ where n number of multidimensional poor households and N is the population. In order to account for the depth in severity of multidimensional poverty, intensity (A) is calculated as the average deprivation share across the poor

$$A = \frac{1}{nj}\sum_{i=1}^{N} w_i \, c_i^*$$

where $w_i c_i^*$ is the weighted number of deprivations for poor households. The adjusted head count is given by $Mo = H * A = \mu\left(g^0(k)\right)$. Where $g^0 = \left[g_{ij}^0\right]$ is a matrix whose ij^{th} entry is 1 if household i is deprived in the j^th indicator, and 0 otherwise (Alkire and Foster 2011b,; Rogan 2016). Thus, the adjusted headcount Mo considers both the frequency and intensity of multidimensional poverty. It denotes the total number of weighted deprivations experienced by the poor divided by the total possible number of deprivations that could be experienced by the population.

To analyse whether FHHs and MHHs in Zimbabwe incur different multidimensional poverty experiences, Mo is computed separately by sex of household head, i.e. MPI. Then the ratio of FHHs to MHHs' Mo is calculated to show relative deprivation between these households. If it i's greater than 1, FHHs would be more likely to be poor than MHHs, i.e. a - gender gap (McLanahan et al. 1989 cited in Rogan 2016). To capture changes in the gender gap over time a comparable analysis is carried out for 2011/12 and 2017. These steps are also applied to achieve our second objective.

The third objective is achieved through separately decomposing the MPI for FHHs and MHHs. This helps to show the relative contributions of individual indicators to the overall adjusted headcount (Alkire and Foster 2011a, Alkire and Santos 2010, Rogan 2016). The contribution of each indicator to is derived as: $\frac{W_j^d * CH_J}{M_0}$

where W_j^d and Mo are as previously deÿned and CH is censored headcount: proportion of the population multidimensional poor and simultaneously deprived in the indicator. This is

computed for each indicator as discussed below. Results are analysed in a comparative context, to verify whether MHHs and FHHs suffer from deprivations in similar dimensions, and which dimensions significantly drive their poverty with implications for policy.

Choice of dimensions

Conceptually our study is rationalised by Sen's (1985, 1999) Capability Approach. This captures the diverse, plural, or multidimensional nature of human conditions and development experiences which is not attainable from unidimensional measures. The choice of welfare dimensions for study is based on existing literature on multidimensional poverty (e.g. Alkire and Santos 2010, Stoefler et al. 2016), data and some contextual information about human conditions in Zimbabwe. Five welfare dimensions have been established for the study: Education, Health, Income, Living conditions and Assets. The indicators and weights are shown in Table 1. It is notable that the main analysis of this study has, in line with international literature on multidimensional poverty, applied equal weights to the domains (Alkire and Foster 2011a). Contextualised weights discussed below have been used for sensitivity checks of the results.

Education is an important dimension of well-being which has been considered in many studies of multidimensional poverty (Batana 2013, Alkire and Santos 2010). Educational achievement is important in Zimbabwe, where literacy rates are high by developing country standards. This serves as a crucial underlying condition for households' socioeconomic development. Hence, a household is deprived of education if it has one child between 6 and 12 years who is not enrolled in school. This criterion follows the importance of human capital development in early stages of life. In addition, a household is deprived if none of the adult members surpassed grade 7. Normatively, this dimension is given a weight of 1 out of 5.

The Income dimension has been added to capture the fact that currently economic status and human welfare in Zimbabwe cannot be well explained by educational attainment. The labour market has a large precarious informal sector and a lot of hidden unemployment, e.g. some graduates have been reduced to working as vendors. Therefore, the signalling role of education for economic empowerment has largely been weakened. This also brings into question the suitability of reported unemployment as a measure of economic deprivation. The reality is that some households suffer from unemployment but have a better economic status than their employed counterparts as they are sustained by remittances from relatives in the diaspora. Thus, a better indicator of household economic deprivation would be expenditure status. To this effect, we classify deprived households as those with per capita consumption expenditure below the food poverty line (extreme poverty), and those with an unemployed adult member. Given the intricate link between education and income, this dimension has also been given a weight of 1 out of 5.

Living conditions are another significant determinant of household well-being. These include household access to public utilities such as water supply, sanitation, electricity

Table 1: Suggested dimensions, weights and indicators used to calculate the MPI by household headship; equal weighting

Dimension	Dimension Weight	Indicator	Weight - urban	Weight -rural
Education	0.2	The household has one child between 6 and 12 years not enrolled in School	0.1	0.1
		No adult in the household has surpassed grade 7	0.1	0.1
Health	0.2	One member of the household has been ill but did not get healthcare in the previous 30 days	0.1	0.1
		One member of the household is chronically ill	0.1	0.1
Income	0.2	per capita household consumption expenditure is below the food poverty line (extreme poverty)	0.1	0.1
		One member of the household was unemployed as main occupation in last 12 months	0.1	0.1
Living condi tions	0.2	The house does not have electricity	0.05	0.05
		The house does not have toilets (pit, blair, or flush toilets) in rural areas or flush toilets in urban areas	0.05	0.05
		The source of water in rural areas is an unprotected well or (worse) or is located farther than 1km away in rural areas; the source of water is not piped water on premise in urban areas	0.05	0.05
		The household does not cook with electricity gas or paraffin	0.05	0.05
Assets	0.2	The household does not own at least 2 of: TV, Radio, telephone, landline, fridge, bicycle, motorcycle And does not own a vehicle	0.2	0.066
		The household in a rural area has no agricultural equipment: plough tractor scotchcart, cultivator, wheelbarrow	-	0.066
		The household in a rural area does not own land	-	0.066

Source: adapted from existing literature (c.f. Alkire and Santos 2010; Stoeffler et al. 2016). Assets for rural areas has a weight of 0.2 in a combined analysis with urb

and clean sources of fuel for cooking. However, Stoeffler et al. (2016) note that there has been poor service delivery by local authorities in Zimbabwe for over a decade, which has reduced household access to public utilities or resulted in intermittent access. In the contextualised analysis, this dimension is accorded the highest weight (2 out of 5) given that the deterioration of service delivery has brought health risks and a time-use burden for some household members. For instance, long periods of interrupted water supply imply that individuals need to forgo leisure or other productive activities to fetch water, especially females. Where the secondary water sources are unprotected this fuels health conditions such as cholera and typhoid. The same applies to respiratory conditions linked to unclean energy sources, and open defecation due to lack of sanitation. Indicators for this dimension, shown in Table 1, are closely linked to what has been used in generic GPI studies literature (c.f. Alkire and Santos 2010).

Good health status is also required for households to achieve life satisfaction/happiness. For this study, a household is deprived of health if one member has been ill but did not get healthcare in the previous 30 days. The presence of a household member with a chronic disease would be complementary to this indicator. Both indicators could, however, be compromised by under-reporting as they only capture health status in the past 30 days. Besides, they are a limited portrayal of health status since the datasets in use do not have information on more generic indicators such as child nutrition or child mortality. Food sufficiency across households could have been utilised but the information is only available in 2017. Notably, in analyses that do not invoke equal weights health has been allocated a weight of 0.5 out of 5 given that individuals' health in Zimbabwe is intricately linked to living conditions.

Household assets have also been specified as another dimension. In generic MPI studies, assets fall under the living conditions dimension; in this study they have been singled out as they give an indication of deprivation linked to permanent rather than current consumption. Given that income is most often unstable, assets are useful for smoothing consumption (Brandolini et al. 2010). Asset ownership thus provides a better picture of the capacity of households to manage their vulnerability to poverty, and a lack thereof acts as a proxy for extreme poverty (McKay 2013). For this study, a household is deprived if it does not own a vehicle and at least two of the following: television, radio, cell phone, landline telephone, fridge, bicycle, motorcycle. These assets facilitate human mobility, communication, entertainment, and storage of perishable food, which enhances quality of life. For rural areas, a household is also deprived if it does not own land and agricultural equipment which is closely linked to its means of survival (Stoeffler et al. 2016). In the case of land, this study utilises land ownership rather than land size, since in 2017 information on land size is only available for selected households. This dimension is attached a weight of 0.5 given its intertwining with living conditions.

3.2 Data Source and descriptive statistics

The study utilises the 2011/12 and 2017 Poverty Income Consumption and Expenditure Survey (PICES) conducted by Zimstat. To some extent, these nationally representative household surveys allow for a comparative analysis of household well-being over time. Hence, the two cross-sections are used to assess poverty dynamics among MHHs and FHHs during Zimbabwe's recovery period. Only households that had information on our key variables are included in the study. These were 29,222 households in 2011 and 29,330 households in 2017, 62% of households in each period were male-headed. *De jure* FHHs comprised 63% of all FHHs in 2011 and 2017. Urban households were around 20% of all households in both periods.

Table 2 presents headcount ratios of household deprivation across indicators used for the study by selected characteristics in 2011 and 2017. For all households, there has been a slight temporal improvement in living conditions except for access to clean sources of energy for cooking. In 2011, 67.8% were deprived in this indicator and this increased to 93.2% in 2017. Another deterioration occurred for households that had an unemployed adult as they increased from 5.2 % to 9.6%. Similarly, households whose expenditure per capita was below the food poverty line increased from 16.2% to 22.9%. On a positive note, there has been progress in education and health domains. For instance, households with school eligible children aged between 6 and 12 years who were not enrolled in school decreased from 8.1% to 2.6% from 2011 to 2017. For health, households that had a member who suffered from a chronic illness decreased from 16.4% to 9.2%. These changes suggest that multidimensional poverty could have also been slightly reduced from 2011 to 2017.

Concerning gender differences, in 2011 FHHs were relatively less deprived in access to electricity, children's lack of school enrolment and unemployment. MHHs suffered less deprivation than FHHs in adult education, chronic health conditions and access to health care. This could be linked to household composition and the fact that women suffer more from chronic diseases than men. There were no significant differences in MHHs and FHHs who faced deprivation in the other indicators; see Table 2. In 2017, there were gender differences in deprivation across all indicators barring children's school enrolment. However, MHHs had lower deprivation headcounts than FHHs in most of the indicators, except for access to protected water and consumption expenditure. The latter could be suggesting that high informality in the labour market has made men worse off since they were more likely to be in formal sector jobs, while many women already had experience participating in the informal sector. Taken together these statistics suggest that MHHs were less likely to be multidimensional deprived in 2017 than FHHs.

Further, Table 2 shows that, in 2017, de facto FHHs were less deprived across indicators than de jure FHHs, except for consumption expenditure and access to decent sanitation. This necessitated an analysis of MPI by marital status of the household

Table 2: Raw Headcount Ratios for the indicators used in 2011 and 2017 by selected characteristics

	2011							2017						
	All	FHH	MHH	DFFH	DJFH	Urban	Rural	All	FHH	MHH	DFFH	DJFH	Urban	Rural
Electricity	0.473	0.457	0.482***	0.457	0.457	0.101	0.678***	0.412	0.451	0.390***	0.416	0.472***	0.102	0.573***
Water	0.348	0.341	0.353	0.342	0.340	0.210	0.424***	0.329	0.312	0.338**	0.327	0.303**	0.260	0.364***
Sanitation	0.300	0.288	0.308	0.284	0.290	0.094	0.414***	0.271	0.276	0.268**	0.285	0.271	0.077	0.372***
Fuel for cooking	0.678	0.673	0.681	0.679	0.670	0.163	0.962***	0.932	0.941	0.926***	0.937	0.944**	0.830	0.985***
Child school enrolment	0.081	0.076	0.084***	0.085	0.071***	0.080	0.081	0.026	0.026	0.026	0.025	0.027**	0.019	0.030***
Adult education	0.209	0.243	0.189***	0.234	0.248***	0.201	0.214	0.164	0.217	0.135***	0.192	0.232***	0.048	0.225***
Chronic conditions	0.164	0.190	0.148***	0.120	0.231***	0.174	0.158	0.092	0.112	0.081***	0.075	0.134***	0.080	0.098***
Access to health care	0.160	0.170	0.154***	0.148	0.183***	0.155	0.162*	0.099	0.103	0.097***	0.087	0.112***	0.086	0.106***
Unemployment	0.052	0.044	0.056***	0.031	0.051***	0.049	0.053	0.096	0.101	0.093**	0.089	0.108***	0.245	0.018***
Extreme poverty	0.162	0.162	0.165	0.150	0.158	0.040	0.229***	0.229	0.208	0.242***	0.228	0.195**	0.025	0.335***
Assets	0.417	0.414	0.419	0.413	0.415	0.119	0.582***	0.416	0.529	0.352***	0.453	0.575	0.155	0.552***
Equipment		-	-	-	-	-	0.440	-	-	-	-	-	-	0.530
Land		-	-	-	-	-	0.161	-	-	-	-	-	-	0.321
Observations	29225	10969	18256	4039	6930	5780	23445	29330	11004	18326	4094	6910	5307	24023

Notes: FH= female-headed households, MH= male headed households, DFFH= de facto female-headed households; DJFH= de jure female-headed households
*significantly different at 10%, ** different at 5%, and *** significantly different at 1% from a statistical test of significance.

head. Another notable disparity is that urban households were generally less deprived than their rural counterparts, which requires a spatial analysis of MPI.

4. Discussion of Results

Results for MPI are estimated for the multidimensional poverty cut-off of k=33% of the weighted deprivations which sum to 1. Different cut-off points are used to assess the sensitivity of the results. Households are classified as multidimensional poor if their weighted deprivation count is at least k. The discussion below focusses on the overall picture, rural and urban households, and by marital status of the household head.

4.1 Overall picture and by sex of the household head

MPI results for the country as a whole are presented in Table 3. The national multidimensional adjusted poverty headcount ratio (M_0) was 0.170 in 2011 and 0.153 in 2017. This multidimensional poverty incidence decreased by 0.017 percentage points, i.e. (9.8%) between the two periods, which is statistically significant at 1%. While multidimensional poverty is still evident, this result suggests that the incidence is slowly decreasing within the country's economic recovery period. Notably, our result for 2011 is of the same order as Stoeffler et al. (2016), who reported M_0 of 0.193, although their study had a national rather than a gender perspective.

Concerning gender differentials, results for M_0 show that show that 17.3% of FHHs and 16.8% of MHHs were multidimensional poor in 2011. However, these percentages are statistically similar at the 5% level. This follows, as both poor FHHs and MHHs were deprived in about 45% of the weighted indicators, measured by the intensity (A) of multidimensional poverty. The multidimensional poverty head counts (H) for both household types almost converged at a poverty incidence of 37%. The picture changed in 2017 as FHHs faced higher multidimensional deprivation than MHHs. The M_0 for MHHs was 0.133 while that for FHHs was 0.19 suggesting a gender gap of 43%. The disparity was entirely driven by the gender difference in observed poverty incidence (43%). Further, the M_0 for FHHs increased by 9.9% from 2011 to 2017 while that for MHHs decreased by 21.3%. These results show that although both household types suffered from multidimensional deprivation in 2011, the situation for FHHs deteriorated in 2017 while that for MHHs improved. The inference can be made that gender parity could be achieved by lowering poverty incidence among FHHs.

4.2 Rural/urban households

MPI results for rural and urban households are shown in Table 4. In 2011 the M_0 for FHHs in urban areas was 0.072 compared to 0.085 for MHHs. However, these poverty experiences are statistically similar, which dismisses evidence of a gender gap. The situation was different for rural households, as the gender gap in M_0 showed that FHHs

Table 4: Multidimensional Poverty for Rural and Urban areas, 2011 and 2017

	Urban - Female			Urban - Male			Rural - Female			Rural - Male			Urban gender gap				Rural gender gap			
	Coef.	SE.		Coef.	SE.		Coef.	SE.		Coef.	SE.		Coef.	SE.		Ratio	Coef.	SE.		Ratio
2011																				
H	0.072	(0.008)	***	0.085	(0.008)	***	0.403	(0.006)	***	0.371	(0.005)	***	-0.013	(0.011)		0.8499	0.032	(0.008)	***	1.0872
M0	0.031	(0.004)	***	0.037	(0.003)	***	0.170	(0.003)	***	0.155	(0.002)	***	-0.006	(0.005)		0.8447	0.015	(0.003)	***	1.0935
A	0.435	(0.010)	***	0.437	(0.008)	***	0.422	(0.002)	***	0.419	(0.001)	***	-0.003	(0.013)		0.9937	0.002	(0.002)		1.0057
2017																				
H	0.111	(0.010)	***	0.088	(0.008)	***	0.428	(0.006)	***	0.351	(0.005)	***	0.023	(0.012)	*	1.2592	0.076	(0.008)	***	1.2176
M0	0.046	(0.004)	***	0.036	(0.003)	***	0.181	(0.003)	***	0.147	(0.002)	***	0.010	(0.005)	*	1.2718	0.034	(0.003)	***	1.2289
A	0.417	(0.009)	***	0.413	(0.007)	***	0.423	(0.001)	***	0.420	(0.001)	***	0.004	(0.011)		1.0098	0.004	(0.002)	**	1.0093
Change over time																				
H	0.039	(0.013)	***	0.003	(0.011)		0.025	(0.009)	***	-0.019	(0.007)	***								
	[53.7]			[3.5]			[6.1]			[-5.2]										
M0	0.015	(0.006)	**	-0.001	(0.005)		0.011	(0.004)	***	-0.008	(0.003)	***								
	[48.3]			[-2.7]			[6.6]			[-5.2]										
A	-0.017	(0.013)		-0.024	(0.010)	**	0.002	(0.002)		0.000	(0.002)									
	[-4.0]			[-5.5]			[0.4]			[0.1]										

Notes: All estimates are bootstrapped (500 replications). Significance level: ***=1%, **=5%, *=10%. For changes over time percentage points and standard errors are shown on top while percentage changes are in square brackets.

Table 3: Overall Multidimensional Poverty, 2011 and 2017

	Overall			Female			Male			Female - Male gap			
	Coef.	SE.		Coef.	SE.		Coef.	SE.		Coef.	SE.		Ratio
2011													
H	0.375	(0.004)	***	0.380	(0.006)	***	0.372	(0.005)	***	0.008	(0.008)		1.021
M0	0.170	(0.002)	***	0.173	(0.003)	***	0.168	(0.002)	***	0.005	(0.004)		1.028
A	0.454	(0.001)	***	0.456	(0.002)	***	0.453	(0.001)	***	0.003	(0.002)		1.007
2017													
H	0.344	(0.004)	***	0.425	(0.006)	***	0.297	(0.004)	***	0.128	(0.008)	***	1.431
M0	0.153	(0.002)	***	0.190	(0.003)	***	0.133	(0.002)	***	0.058	(0.003)	***	1.435
A	0.447	(0.001)	***	0.447	(0.001)	***	0.446	(0.001)	***	0.001	(0.002)		1.003
Change over time													
H	-0.031	(0.006)	***	0.046	(0.009)	***	-0.075	(0.006)	***				
	[-8.3]			[12]			[-20.0]						
M0	-0.017	(0.003)	***	0.017	(0.004)	***	-0.036	(0.003)	***				
	[-9.8]			[9.9]			[-21.4]						
A	0.007	(0.001)	***	-0.009	(0.002)	***	-0.007	(0.002)	***				
	[1.6]			[-1.9]			[-1.5]						

N zotes: All estimates are bootstrapped (500 replications). Significance level: ***=1%, **=5%, *=10%. For changes over time percentage points and standard errors are shown on top while percentage changes are in square brackets.

were more deprived by 9%, due to their relatively higher poverty incidence (H) than MHHs (8% gender gap). In 2017, 4.6% percent of FHHs and 3.6% of MHHs in urban areas were multidimensional poor, again due to a high poverty incidence rather than poverty intensity (A). This yielded a statistically significant gender gap of 27%. The result also extended to rural areas as FHHs were 22% multidimensional poorer than MHHs. Thus, FHHs in rural areas were consistently poorer than their male-headed counterparts, and the gender gap increased over time.

A temporal analysis of the multidimensional poverty experiences by sex of the householder reveals that FHHs experienced a poverty increase from 2011 to 2017 regardless of geographic area, while a decrease was registered for MHHs. The highest deterioration in poverty experience was encountered by FHHs in urban areas (48.3% increase in M_0) whist the highest improvement accrued to MHHs in rural areas (5.2% decrease in M_0). When considered alongside the national picture, this outcome links Zimbabwe's decline in multidimensional poverty over the given period more to MHHs than FHHs.

4.3 Marital status

In light of existing literature suggesting that household welfare may vary by the head's marital status, we analyse multidimensional poverty by marital status of the household head. In the preceding discussion, FHHs were shown to have a higher extent of deprivation than MHHs. Hence, we first compare M_0 of MHHs to that for de facto and de jure FHHs and then proceed to examine M_0 by gender of household head and type of marital status. Table 5 shows that in 2011, 17.8% of de jure and 16.5% of de facto FHHs were multidimensional poor compared to 16.8% of MHHs. These figures were, however, statistically similar which dispels the existence of a gender gap.

In contrast, there were gender gaps in adjusted poverty headcount in 2017. De jure FHHs had an M_0 of 0.206, while this was 0.164 for de facto FHHs and 0.133 for MHHs. This shows that de jure FHHs' deprivation score was 25.6% higher than de facto FHHs'. Based on these figures, statistically significant gender differences in multidimensional deprivation emerged. De jure FHHs were 55% more deprived than MHHs, while this relative deprivation was 23% for de facto FHHs. Thus, de jure FHHs were relatively worse off than de facto FHHs when compared to MHHs. Results for changes in poverty over time show that de jure FHHs incurred a 16.3% increase in multidimensional poverty from 2011 and 2017, while de facto FHHs incurred a negligible decrease of 0.3%.

Table 6 presents outcomes of never married (single), married and widowed/ divorced FHHs and their MHHs counterparts.

Never married (single) heads: In 2011, the adjusted poverty headcount was marginally higher among single FHHs (M_0 of 0.161) than single MHHs (M_0 of 0.156). The opposite was observed in 2017 as FHHs' M_0 was 0.098 compared to 0.109 for MHHs. Both single FHHs and MHHs experienced a decrease in multidimensional poverty from 2011 and 2017, with

Table 5: Multidimensional poverty for De jure and De facto FHHs and MHHs

	Male		De jure Female		De facto Female		De jure Female - Male Gap			De facto Female - Male Gap		
	Coef.	SE.	Coef.	SE.	Coef.	SE.	Coef.	SE.	Ratio	Coef.	SE.	Ratio
2011												
H	0.372***	(0.005)	0.384***	(0.008)	0.371***	(0.011)	0.012	(0.024)	1.032	-0.001	(0.023)	0.997
M0	0.168***	(0.002)	0.178***	(0.004)	0.165***	(0.005)	0.009	(0.012)	1.059	-0.004	(0.011)	0.982
A	0.453***	(0.001)	0.463***	(0.002)	0.444***	(0.002)	0.010	(0.023)	1.022	-0.009	(0.022)	0.980
2017												
H	0.297***	(0.004)	0.461***	(0.008)	0.367***	(0.010)	0.164***	(0.029)	1.552	0.070***	(0.024)	1.236
M0	0.133***	(0.002)	0.206***	(0.004)	0.164***	(0.005)	0.074***	(0.014)	1.549	0.032***	(0.012)	1.233
A	0.446***	(0.001)	0.477***	(0.002)	0.447***	(0.003)	0.001	(0.023)	1.069	0.001	(0.023)	1.002
Change over time												
H	-0.075***	(0.006)	0.077***	(0.012)	-0.004***	(0.014)						
	[-20]		[20]		[-1.1]							
M0	-0.036***	(0.003)	0.029***	(0.006)	-0.0005*	(0.0003)						
	[-21.4]		[16.3]		[-0.30]							
A	-0.007	(0.002)	-0.015***	(0.003)	0.003***	(0.0002)						
	[-1.5]		[-1.8]		[0.68]							

Notes: All estimates are bootstrapped (500 replications). Significance level: ***=1%, **=5%, *=10%. For changes over time percentage points and standard errors are shown on top while percentage changes are in square brackets

Table 6: Multidimensional poverty by marital status and gender of household head (2011 – 2017)

	Single			Married			Widow/divorced		
	Female	**Male**	**Diff.**	**Female**	**Male**	**Diff.**	**Female**	**Male**	**Diff.**
2011									
H	0.365	0.360	0.005***	0.371	0.372	-0.001**	0.386	0.372	0.014***
	(0.001)	(0.001)	(0.002)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)
A	0.442	0.434	0.009***	0.444	0.453	-0.009***	0.464	0.465	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
M0	0.161	0.156	0.005***	0.165	0.169	-0.004***	0.179	0.173	0.006***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
2017									
H	0.231	0.267	-0.036***	0.367	0.292	0.075***	0.480	0.424	0.055***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
A	0.426	0.410	0.017***	0.447	0.449	-0.002***	0.448	0.430	0.019***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
M0	0.098	0.109	-0.011***	0.164	0.131	0.033***	0.215	0.182	0.033***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Changes over time									
H	-0.134***	-0.093***		-0.004***	-0.080***		0.093***	0.052***	
	(0.002)	(0.001)		(0.001)	(0.000)		(0.001)	(0.001)	
	[-36.7]	[-25.8]		[-1.08]	[-21.5]		[24.1]	[14]	
A	-0.016***	-0.024***		0.003***	-0.004***		-0.016***	-0.035***	
	(0.000)	(0.000)		(0.0002)	(0.000)		(0.000)	(0.000)	
	[-3.61]	[-5.53]		[0.68]	[-0.88]		[-3.45]	[-7.53]	
M0	-0.063***	-0.047***		-0.0005*	-0.037***		0.036***	0.009***	
	(0.016)	(0.001)		(0.0003)	(0.0002)		(0.000)	(0.001)	
	[-39.1]	[-30.1]		[-0.30]	[-21.9]		[20.1]	[5.20]	

Notes: All estimates are bootstrapped (500 replications). Significance level: ***=1%, **=5%, *=10%. For changes over time percentage points and standard errors are shown on top while percentage changes are in square brackets

higher decreases registered among the single FHHs (39.1% compared to 30.1%).

Married heads: In 2011, the incidence of multidimensional poverty was marginally lower among married FHHs than married MHHs (16.5% against 16.9%). This position was reversed in 2017 as 16.4% of married FHHs were multidimensional poor compared to 13.1% of their male-headed counterparts. From 2011-2017, MHHs experienced a considerable decrease in multidimensional poverty (21.9%) while a trivial decrease was observed (0.30%) among FHHs. Thus, married FHHs were worse off over time compared to married MHHs.

Widow/divorced heads: In both periods, multidimensional poverty was higher among households with widow/divorced female heads compared to their counterpart MHHs. For instance, 21.5% of the FHHs were multidimensional poor in 2017 compared to 18.2% for the MHHs. Generally, both widowed/divorced MHHs and FHHs experienced an increase in multidimensional poverty from 2011 to 2017. The poverty increase was much higher among FHHs (20.1%) than MHHs (5.20%). When considered across marital status groups, multidimensional poverty was higher among households headed by the widowed/divorced, in both 2011 and 2017. Worse still, these households experienced a temporal increase in poverty while other groups had a decrease. Accordingly, poverty eradication among FHHs in Zimbabwe should be sensitive to the householder's marital status; widows and divorcees are worse off compared to their married and single counterparts.

4.4 Decomposing multidimensional poverty

The multidimensional poverty index M_0 can be decomposed to assess the contribution of each dimension to poverty, which is important for policy purposes. Figure 1 shows results for MHHs and FHHs in 2011 and 2017. In both periods, a low asset base, lack of access to electricity and clean sources of fuel for cooking, and extreme poverty, were the greatest contributors to multidimensional deprivation. These dimensions indiscriminately affected all households regardless of the heads' sex and time period. However, in 2011 poor adult education also had a significant influence on FHHs' deprivation, while it affected both household types in 2017. Notably, low household asset base and unclean sources of fuel for cooking contributed 51% to overall poverty in 2011 and 2017.

Table 7 presents results for rural and urban households. For urban areas, in 2011, a low asset base explained almost 35% of deprivation faced by both household types; chronic diseases, no access to health care, poor adult education, unclean sources of fuel for cooking and low access to electricity were also notable contributors. Extreme poverty also contributed to deprivation in MHHs while poor adult education had a slightly larger contribution to poverty for FHHs than MHHs. In 2017, health and education were low contributors, whereas unemployment and unclean sources of cooking fuel became greater sources of deprivation for both household types, although less than assets.

Similar to urban households, a low asset base and unclean sources of fuel for cooking were also significant sources of deprivation in rural households in 2011, regardless

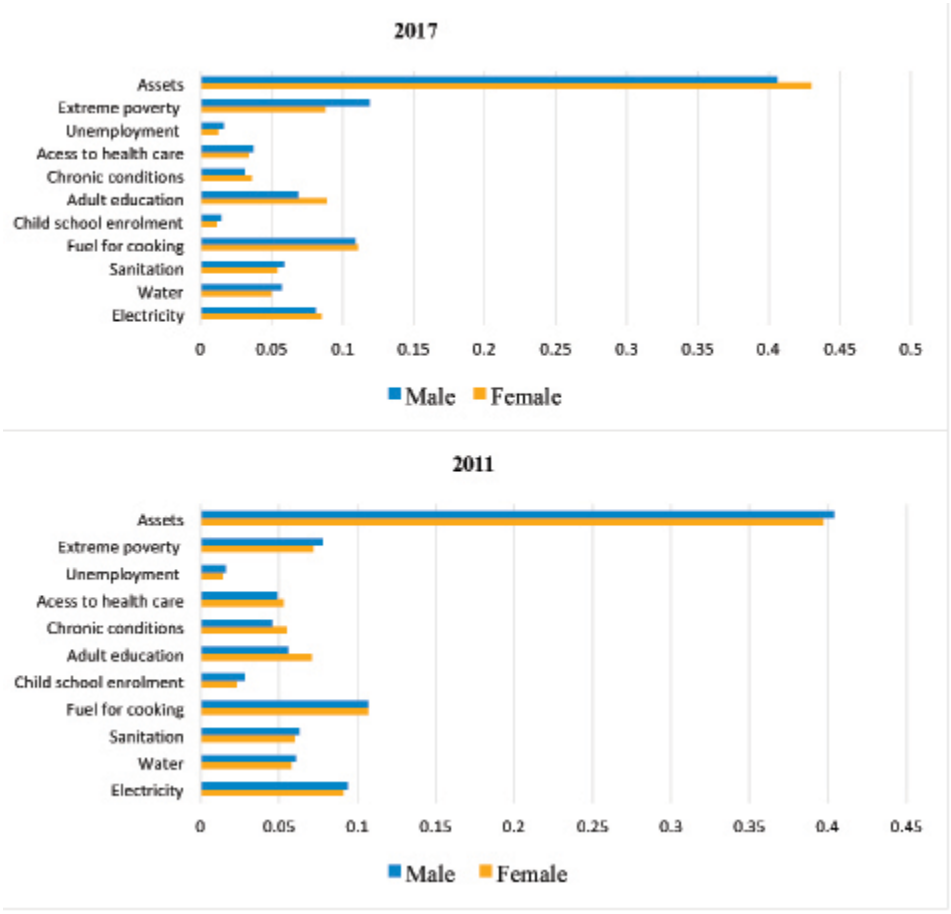
Table 7: Percentage Contribution of Each Dimension to Multidimensional Poverty in Rural and Urban areas for k=33%, 2011 - 2017

		2011				2017			
		Urban		Rural		Urban		Rural	
		Male	Female	Male	Female	Male	Female	Male	Female
	M_0	0.037	0.031	0.155	0.17	0.036	0.046	0.147	0.181
% Contribution of subgroup to M_0 (%)									
Domain 1	Electricity	0.072	0.061	0.103	0.1	0.048	0.049	0.091	0.098
	Water	0.077	0.072	0.067	0.065	0.069	0.047	0.06	0.056
	Sanitation	0.058	0.058	0.07	0.067	0.035	0.023	0.067	0.062
	Fuel for cooking	0.073	0.076	0.118	0.117	0.093	0.108	0.119	0.118
Domain 2	Child school enrolment	0.052	0.040	0.038	0.03	0.030	0.021	0.017	0.014
	Adult education	0.072	0.100	0.076	0.093	0.046	0.057	0.089	0.112
Domain 3	Chronic conditions	0.073	0.102	0.065	0.074	0.037	0.054	0.04	0.046
	Access to health care	0.086	0.093	0.068	0.073	0.056	0.062	0.048	0.045

Domain 4	Unemployment	0.017	0.015	0.022	0.018	0.113	0.122	0.009	0.005
	Extreme poverty	0.071	0.051	0.105	0.096	0.05	0.034	0.153	0.117
Domain 5	Assets	0.349	0.333	0.129	0.129	0.423	0.423	0.121	0.142
	Agriculture Equipment			0.105	0.106			0.118	0.127
	Land			0.034	0.032			0.07	0.058

household type. Other sizeable contributors were agriculture equipment deprivation, low access to electricity, extreme poverty and poor adult education. While these indicators were also significant in 2017, extreme poverty overtook assets to become the largest contributor to deprivation in MHHs (15% versus 12%). Notably, extreme poverty had a relatively larger contribution to deprivation in MHHs (15.3%) than FHHs (11.7%). The relative contribution of agriculture equipment deprivation, poor adult schooling and extreme poverty to multidimensional poverty in FHHs also increased from 2011 to 2017. More importantly, a meticulous analysis of the results shows that, overall, asset deprivation and having no adult who surpassed grade 7 in the household were the key contributors to the increase in the gender gap from 2011 to 2017. This discussion largely shows that MHHs and

Figure 1: Percentage Contribution of Each Dimension to Multidimensional Poverty for k=33%



FHHs in Zimbabwe were deprived in similar dimensions. Also rural households faced more contributors to their poverty than urban households.

4.5 Sensitivity checks

To assess robustness of our results we carry out two types of sensitivity checks that are linked to indicator weights and cut-off points given normative choices surrounding their specification in the AF method. Poverty domains in the main analysis were equally weighted. In this section, context specific weights were applied to the variables as discussed earlier. The five domains were weighted as follows: Education (20%), Health (10%), Income (20%), Living conditions (40%) and Assets (10%).

Results in Table 8 in the appendix confirm that nation-wide poverty decreased (by 12.1% from 2011-2017). Also in 2011, there was no statistically significant gender bias in the occurrence of multidimensional poverty. In 2017 FHHs were generally more deprived than MHHs, a gender gap of 24.9% (M_0 of 20.6 compared to 16.5). The results also confirm that multidimensional poverty decreased among MHHs by 19.5% while it increased among FHHs by 1%, although the latter is statistically insignificant.

To assess sensitivity of the results to different cut-offs, multidimensional poverty was estimated using equal weights and cut-off points of 10%, 20%, 30%, 40% and 50%. The results are presented in Figure 2 in the appendix. These are qualitatively in congruence with those obtained at cut-off of 33%, which shows less sensitivity to choice of cut-off point. Taken together, these robustness checks show that our main results can be relied on.

5. Conclusion and Policy Recommendations

Multidimensional poverty incidence in Zimbabwe did not discriminate households by sex of the householder in 2011. This could be due to a lagged effect of the economic crisis that generally eroded household welfare. However, in 2017 FHHs faced higher deprivation than MHHs. This suggests that the relative position of FHHs became worse while that for MHHs improved during the economic recovery period. Our outcome for MHHs builds onto the declining trend uncovered by Stoeffler et al. (2016) at national level, during 2001-2011.

We also found heterogeneous poverty experiences by marital status of the household head. De jure FHHs were poorer than de facto FHHs and MHHs. Also, FHHs and MHHs with widow/divorced heads experienced higher poverty than those with single or married heads. The former experienced a temporal increase in poverty while the others had a decline. Further, an analysis of the gendered household poverty gap by geographic location showed that only rural areas were affected since they faced more contributors to their deprivation than urban households.

Other results show that FHHs and MHHs had similar sources of deprivation regardless of time period. The key contributors were deprivations in the asset, living conditions and income dimensions. Therefore, sources of deprivation in MHHs and FHHs affected both households alike. We also noted that asset deprivation and having no adult who surpassed grade 7 in the household were the key contributors to the increase in the gender gap from

2011 to 2017.

Our results suggest a need for policies that relax constraints on asset ownership and strengthen poor households' welfare and economic empowerment. Low household income/expenditure can be improved by promoting the creation of decent jobs and bolstering small-to-medium enterprises. Concerted efforts to improve living conditions and particularly household access to electricity and clean sources of fuel for cooking are also essential. Lastly, donor programmes and the GoZ's targeting of social safety nets should be sensitive to de jure FHHs being more deprived than de facto FHHs. The same applies to strategies to reduce the gender gap as it is more of a rural than urban problem.

This study is not without limitations. First, due to data constraints, our analysis excludes other important indicators of poverty such as food security and nutrition. Second, the analysis is focused on FHHs and MHHs and does not explicitly consider the position of women within these households. Hence, some of our policy recommendations may not directly apply to women who live in MHHs as they may face different constraints. This can be addressed by future studies which focus on the situation of female- and male-dominated households.

top while percentage changes are in square brackets

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Appendix

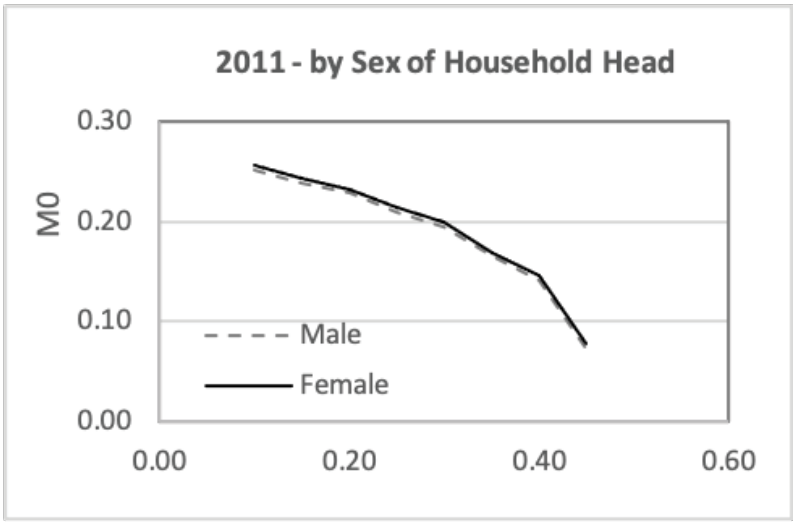
Results for sensitivity checks:

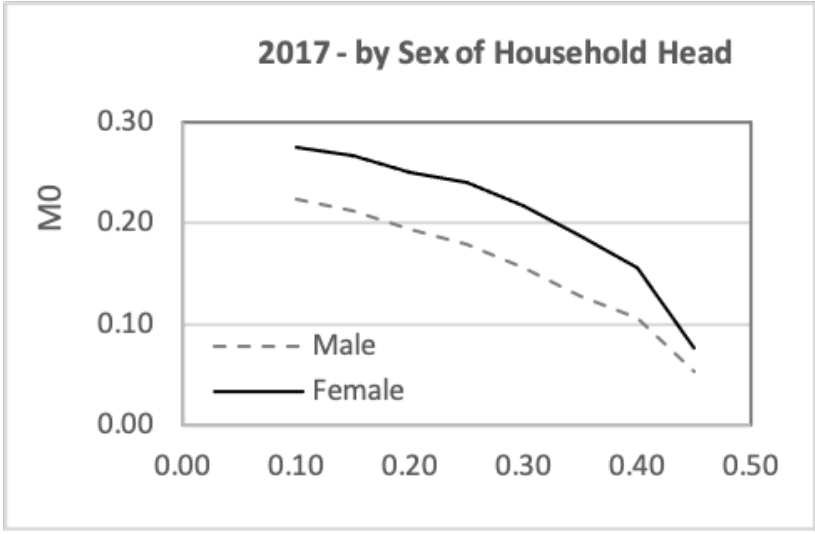
Table 8: Robustness check to context specific weights, Overall results and by sex of the household head, k=33%

	Overall			Female			Male			Female - Male gap			Ratio
	Coef.	SE.		Coef.	SE.		Coef.	SE.		Coef.	SE		
2011													
H	0.425	(0.004)	***	0.424	(0.007)	***	0.425	(0.005)	***	-0.001	(0.008)		0.9976
M0	0.204	(0.002)	***	0.204	(0.003)	***	0.204	(0.003)	***	-0.001	(0.004)		1.0000
A	0.481	(0.001)	***	0.481	(0.002)	***	0.481	(0.001)	***	0.000	(0.002)		1.0000
2017													
H	0.377	(0.004)	***	0.431	(0.006)	***	0.347	(0.005)	***	0.084	(0.008)	***	1.2421
M0	0.179	(0.002)	***	0.206	(0.003)	***	0.165	(0.002)	***	0.041	(0.004)	***	1.2485
A	0.476	(0.001)	***	0.478	(0.002)	***	0.474	(0.001)	***	0.004	(0.002)	*	1.0084
Change over time													
H	-0.048	(0.006)	***	0.006	(0.009)		-0.078	(0.007)	***				
	[-12.7]			[1.5]			[-18.4]						
M0	-0.025	(0.003)	***	0.002	(0.004)		-0.040	(0.004)	***				
	[-12.1]			[1.0]			[-19.6]						
A	-0.005	(0.002)	***	-0.002	(0.002)		-0.007	(0.002)	***				
	[-1.0]			[-0.4]			[-1.4]						

Notes: All estimates are bootstrapped (500 replications). Significance level: ***=1%, **=5%, *=10%. For changes over time percentage points and standard errors are shown on top while percentage changes are in square brackets.

Figure 2: Results based on different cut off points by Sex of the Household Head, k=33%





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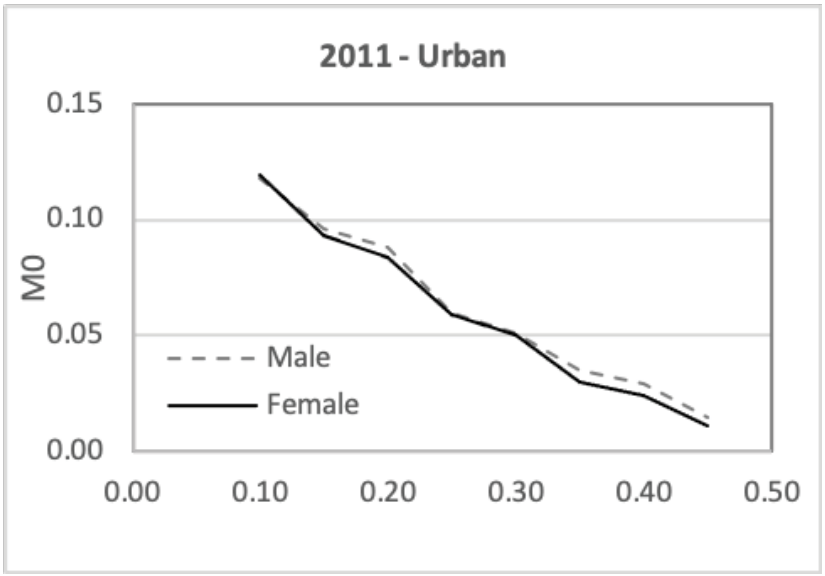

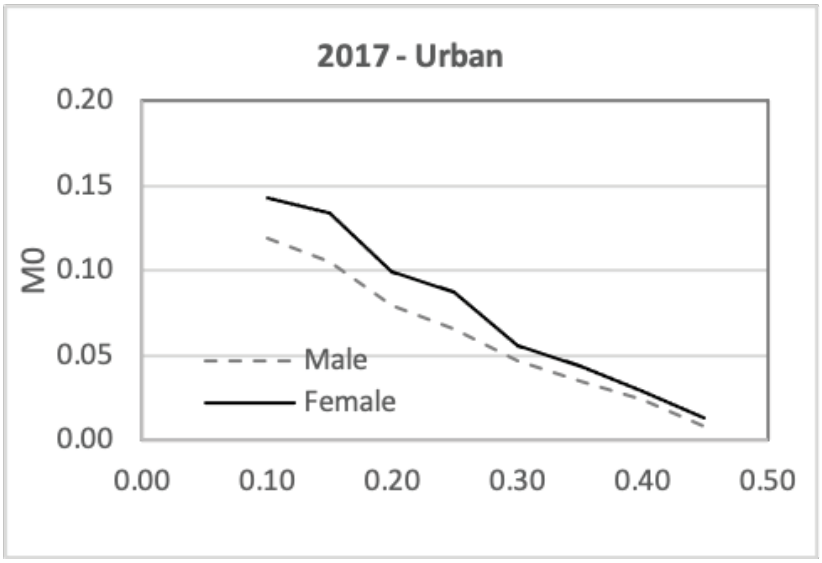

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