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# Multidimensional Poverty among Urban Refugees in Kenya during the COVID-19 Pandemic

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**Abstract:** Poverty is a major problem among refugees and a proper understanding of its correlates is a fundamental requirement for policy interventions. This paper adds to existing body of knowledge by using the multidimensional poverty framework to analyse correlates of multiple deprivations among urban refugees in Kenya during the COVID-19 pandemic. The data were collected with telephone interviews from refugees from Mombasa, Nairobi and Nakuru. The Alkire-Foster approach to multidimensional poverty indicator (MPI) computation was used with twenty-eight welfare attributes. The correlates of the MPIs were further analysed with Tobit regression. The results showed that among housing characteristics, refugees showed the highest deprivations in ran out of water, cooking fuel and number of rooms, while the least among assets were smart phone and mattress ownership. Average MPI for all respondents was 0.5487, while Nairobi had the highest MPI (0.5597). The significant correlates of MPI ($p<0.05$) were memberships of Community-Based Organizations (CBOs) (-0.010283), residence in Nairobi (0.0244818), bank savings (0.0797315), MPESA savings (-0.036748), pillow savings (-0.034977), residence of foster child (-0.0216316), physical disability (0.0256857), serious medical problem (-0.0193773), formal borrowing (-0.0210615) and sold more animals (0.052714). The findings have underscored the magnitude of multidimensional poverty among urban refugees during the COVID-19 pandemic with emphases on promotion of membership in CBOs, savings, effective safety net to absorb income shocks and preferential poverty reducing interventions among disabled refugees.

**Keywords**: Multidimensional Poverty Indicator; Alkire-Foster; COVID-19; Refugees; Kenya

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## 1. Introduction

Poverty eradication is the first and one of the foremost development agendas in the Sustainable Development Goals (SDGs) (United Nations Development Programme, undated). Although the number of people living in extreme poverty was declining before 2020 (Moyer et al., 2022), a twist of economic development event that was promoted by unforeseen global health crisis – COVID-19 – changed the direction of progress and magnitude of the current poverty reduction narratives. It has been projected that by 2030, only about one-third of the world's countries would have reduced their poverty incidences by 50% while about 575 million people would be living in poverty (United Nations, n.d.). The implication is that the substantive impacts of several development initiatives on poverty alleviation remain ephemeral, and growing incidence of poverty still constitutes the foremost economic development constraint the world currently faces. It can therefore be emphasized that the challenge of poverty eradication in all its ramifications across the world by 2030 remains a herculean task which only few developing countries currently bother about (Hagen-Zanker et al., 2022).

Although the COVID-19 pandemic had been implicated in the current economic stagnation and development dooms in many developing countries, the growing problem of insecurity due to political crises and insurgencies is also contributing to growing poverty. Recently, the tale of human displacement in Africa had been aggravated by political violence, religious conflicts, climate change and hunger (Perdersen, 2002; Welzer, 2015). The impacts of these factors on human displacement have been aggravated by the COVID-19 pandemic, which distorted the social fabrics of our collective responsibility and brotherhood through rising cost of living standard (Vieira et al., 2021). It should be noted that as of May 2022, some statistics have placed the number of globally forcibly displaced people (FDP) at more than 100 million (Łukasiewicz, 2022; Minasyan et al., 2023). The burden of FDP is resting more on sub-Saharan Africa (SSA), where the total affected people stood at 38.3 million and 44 million in 2021 and 2023, respectively (Mlambo, 2024). It should also be noted that about 60% of these people are internally displaced (Mlambo, 2024), who often lack access to nutritious food and basic social services in their temporary immediate camps of lodgement.

The role of peace in the promotion of human development and poverty alleviation cannot be overemphasized (Abubakar, 2019; Garga 2015). African policy makers have emphasised the structural position of peace promotion among the strands of policy instruments being directed towards post-COVID economic recovery and poverty alleviation strategies. Specifically, while internally displaced people due to

some perennial communal conflicts are bound to face significant economic hardships, conflict affected people who seek asylum in nearby countries often suffer significant deplorable welfare losses due to prevailing uncertainties in securing employment and restrictions in utilizing their previously acquired education and skills for formal or informal labour market integration in their host countries.

It should be noted that before the emergence of COVID-19 as a global pandemic of significant health and economic development impacts, the poverty alleviation development initiatives of many African countries placed very little emphases on the role of social protection (Abay et al., 2023). Therefore, although the poorest of the poor in every society have the fundamental right to social assistance for covering their basic needs, functioning social protection programmes exist in just few African countries (Department of Social Development, 2002). This, coupled with other development challenges hinders the drive towards effective poverty alleviation in Africa. Conventional wisdom also dictates that the highest impact of the pandemic would be felt among FDP comprising of IDP, refugees and asylum seekers. The impact of COVID-19 among African refugees was amplified by diversion of humanitarian assistances from migration related problems to restoration of general environmental safety in every country through a quick overturn of the mortality and morbidity trends of the COVID-19 pandemic, especially in some developed European and Asian countries (Mbiyozo, 2024).

In Kenya, 293200 people were internally displaced between March and May, 2024 due to flooding (Peace and Security Council, 2024). On the other side of the coin, due to the severity and prevalence of drought, about 6.4 million people needed humanitarian assistances in 2023, while 5.3 million people were confronted with acute hunger and food insecurity (SIDA, 2024). The economic challenges of climate change in some regions of Kenya, coupled with prevailing post-COVID economic development challenges placed significant demands on social and humanitarian assistances for the affected people. Specifically, Kenya is among the countries with the highest number of refugees in Africa and has over the past few decades borne the economic and social burdens of hosting more than 700,000 displaced people largely from Somalia and South Sudan. Although the Kenyan government recently signed a new policy framework which is targeting the promotion of economic integration and welfare of refugees in Kenya into law, prevailing post-COVID economic challenges such as growing unemployment rate and fiscal deficits are the major hinderances to effective poverty reduction.

More importantly, the fact that Kenyan refugees have always come last in some human development indicators warrants a closer understanding of their welfare status during the COVID-19 pandemic. This study focused on multidimensional poverty status among urban refugees in Kenya because poverty is now being viewed from the multidimensional concept (Alkire & Foster, 2009; Alkire & Foster, 2011;

Alkire & Santos, 2014; Alkire et al., 2020). We constructed the multidimensional poverty indicator (MPI) following the Alkire and Foster approach (Alkire & Foster, 2009; Alkire & Foster, 2011; Alkire & Santos, 2014). The MPI is a highly decomposable flexible indicator which has been adopted by the UNDP to ensure poverty comparison across the world (UNDP, 2019a; 2019b).

In some previous studies, Lyons et al. (2023) used the multidimensional frameworks to assess vulnerability to poverty among refugees in Syria. It was concluded that vulnerability is best measured with the multidimensional framework, while poverty is essentially dynamic. Admasu et al. (2023) computed the MPI for refugees in Sudan, South Sudan, Ethiopia, Nigeria, and Somalia, and concluded that it was only in Nigeria where MPIs of refugees and host communities were not significantly different. Furthermore, it was found that female headed households in Sudan, South Sudan and Ethiopia had higher MPIs, while male headed households from Somalia were multidimensionally poorer. Naseh et al. (2024) analysed the MPI of refugees in the USA and found that more than half were multidimensionally poor, while lack of English language proficiency was associated with higher MPIs. Robson et al. (2024) analysed the effect of Emergency Social Safety Net (ESSN) on multidimensional poverty among refugees in Turkey. It was found that access to ESSN reduced multidimensional poverty incidence and severity.

A proper understanding of the determinants of multidimensional poverty among refugees is important for some policy reorientation and humanitarian assistances. Therefore, besides adding to existing body of knowledge, such information can facilitate policy interventions to address some specific form of deprivations being currently suffered by refugees. In the context of Kenya, information on the magnitude and correlates of MPI among refuges is lacking within the landscapes of academic and scholar literature. However, such information is important for complete reintegration of refugees into the sphere of the country's economic activities and development planning. Therefore, in this article, we computed the MPIs for urban refugees using the data that were collected during the COVID-19 pandemic and decomposed their correlates. In the remaining parts of the paper, we have presented the materials and methods, results and discussion and conclusion.

## 2. Materials and Methods

### 2.1. The Data

The data for this study were collected by the United Nations High Commissions on Refugees (UNHCR) in 2020. The data were collected to understand the impacts of COVID-19 pandemic on the socioeconomic activities of urban refugees. The sampling frame was the UNHCR ProGres register which was being kept for all the documented refugees residing in urban Kenya. Due to several restrictions on human

movement that were warranted by the pandemic, telephone interviews were conducted for refugees in Nairobi, Kikuyu and Mombasa. It should be noted that the selected cities have similar rates of phone penetration with 93% for Mombasa, 93% for Nairobi and 95% for Nakuru. The targeted sample size was 2500 based on assumption of 95% confidence level, 5% margin of error, and about 50% representation from the entire population of urban refugees. However, 2438 households successfully completed the survey.

The sampling was implemented with the stratified random sampling. Each of the selected cities formed a stratum and samples were allocated based on the estimated population of refugees. The allocated samples for each of the cities were 729 for Mombasa, 409 for Nakuru and 1300 for Nairobi. The interviewers completed the surveys telephonically using Computer Assisted Telephone Interview (CATI). Data entries were made on tablet phones, with the utmost transmission of final entries into the main servers. The representativeness of the data is guaranteed for refugee households who were owing telephone numbers given that sampling weights were generated (UNHCR and World Bank, 2020).

### 2.2. Construction of Multidimensional Poverty Index

We used the Alkire and Foster method (Alkire & Foster, 2009; Alkire & Foster, 2011; Alkire & Santos, 2014) to compute the multidimensional poverty indicator for each of the urban refugees. Each of the selected attributes was equally weighted. As proposed by Alkire and Foster (2011), each of the selected attributes was coded as 1 for the deprived and 0 otherwise (see Table 1). The assigned weight ($w_j$) for each of the attributes is 1/28, and $\sum_{j=1}^{n} w_j = 1$. The sum of the weighted deprivation score ($c_j$) is given as:

$$c_j = w_1 D_1 + w_2 D_2 + w_3 D_3 + \cdots \ldots . w_{28} D_{28} \quad (1)$$

The cut for welfare deprivation a cut-off of one-third of the total attributes, which was then set at nice (9). Therefore, in the computation of the MPI, households with deprivation of 9 ($z$) and above were regarded as poor and coded 1, while the others were coded as 0. Let $c_j(z)$ denote censored deprivation and if $c_j \geq z$, then $c_j\,(z) = c_j$ but when it is $< z$, then $c_j(z) = 0$. Given that *N* denotes the total number of households and $k$ denotes the number of multidimensionally poor households, the head-count ratio (*H*) can be expressed as:

$$H = \frac{k}{N} \quad (2)$$

The poverty intensity is expressed as:

$$A = \frac{\sum_{j=1}^{k} c_j(z)}{k} \quad (3)$$

The MPI is the product of the poverty incidence (*H*) and intensity (*A*).

MEPI = H*A (4)

**Table 1. Selected attributes and their coding formats**

| Attributes | Coding format | Weight |
|---|---|---|
| Number of rooms | More than 1 person per room = 1, 0 otherwise | 1/28 |
| Dwelling type | No home/homeless = 1, 0 otherwise | 1/28 |
| Floor materials | Dung/Wood/Plank/Palm/Bamboo = 1, 0 otherwise | 1/28 |
| Roof materials | Grass/Dung/Tin can = 1, 0 otherwise | 1/28 |
| Wall materials | Bamboo/Iron sheet/Adobe/Mud/No wall/plastic/Plywood/Stones with muds/wood = 1, 0 otherwise | 1/28 |
| Drinking water | Bicycle with bucket/bottled water/Cart with tank or drum/River/Tanker/Unprotected well =1, 0 otherwise | 1/28 |
| Ran out water | At least once = 1, 0 otherwise | 1/28 |
| Improved toilet | Bucket/composting/don't know/pit without slab = 1, 0 otherwise | 1/28 |
| Sharing toilet | Yes = 1, 0 otherwise | 1/28 |
| Lighting energy | Non-improved sources = 1, 0 otherwise | 1/28 |
| Cooking energy | Non-improved sources = 1, 0 otherwise | 1/28 |
| Has no radio | Yes = 1, 0 otherwise | 1/28 |
| Has no television | Yes = 1, 0 otherwise | 1/28 |
| Has no satellite dishes | Yes = 1, 0 otherwise | 1/28 |
| Has no smart phone | Yes = 1, 0 otherwise | 1/28 |
| Has no fridge | Yes = 1, 0 otherwise | 1/28 |
| Has no bed | Yes = 1, 0 otherwise | 1/28 |
| Has no mattress | Yes = 1, 0 otherwise | 1/28 |
| Has no mosquito net | Yes = 1, 0 otherwise | 1/28 |
| Has no electric fan | Yes = 1, 0 otherwise | 1/28 |
| Has no bicycle | Yes = 1, 0 otherwise | 1/28 |
| Has no motorcycle | Yes = 1, 0 otherwise | 1/28 |
| Has no car | Yes = 1, 0 otherwise | 1/28 |
| Has no generator | Yes = 1, 0 otherwise | 1/28 |
| Has no solar device | Yes = 1, 0 otherwise | 1/28 |
| Has no stove (kerosene) | Yes = 1, 0 otherwise | 1/28 |
| Has no charcoal stove | Yes = 1, 0 otherwise | 1/28 |
| Has no wheelbarrow | Yes = 1, 0 otherwise | 1/28 |

### 2.3. Tobit Regression Model

We used the Tobit regression model to analyse the determinants of MPI and the equation can be specified as:

$$\text{MEPI}_i = \alpha + \beta_j \sum_{j=1}^{22} X_i + e_i \quad (5)$$

Where *i* denotes the households, $\alpha_k$ are the constant terms for *k*th period, $\beta_j$ are the estimated *j*th parameters, $X_i$ are the independent variables and $e_{ik}$ denotes the error terms. The independent variables are: Nairobi (yes =1, 0, otherwise), Nakuru (yes =1, 0, otherwise), bank loan (yes =1, 0, otherwise), informal loan (yes =1, 0, otherwise), friends/relative loan (yes =1, 0, otherwise), village savings (yes =1, 0, otherwise), bank savings (yes =1, 0, otherwise), MPESA savings (yes =1, 0, otherwise), pillow savings (yes =1, 0, otherwise), gender (male =1, 0, otherwise), sold physical assets like radio etc (yes =1, 0, otherwise), reduced spending (yes =1, 0, otherwise), sold productive assets or means of transportation (yes =1, 0, otherwise), spent savings (yes =1, 0, otherwise), borrowed money (yes =1, 0, otherwise), sold house or land (yes =1, 0, otherwise), withdraw kids from school (yes =1, 0, otherwise), sold last female animal (yes =1, 0, otherwise), begged (yes =1, 0, otherwise) and sold more animals (yes =1, 0, otherwise).

## 3. Results and Discussions

### 3.1. Urban Refugees' Housing Characteristics

The nature of houses being occupied by refugees in urban areas will be defined by their income levels. Urban cities in Kenya are segregated into the prime urban centres and slum areas, with urban poor only being able to afford accommodation in the poorly developed slum areas (Birds et al., 2017). Table 2 shows the distribution of refugees' deprivations in some housing characteristics across the selected urban cities. The figure showed that households who resided in unimproved dwelling type were 10.43%, 7.92% and 7.33% for Mombasa, Nairobi and Nakuru, respectively. Most of the households with unimproved floor material resided in Mombasa (6.31%), Nairobi (4.54%) and Nakuru (1.71%). Households that had unimproved wall material were mainly from Nairobi (17.23%), Mombasa (15.50%) and Nakuru (10.51%). However, the low level of housing deprivation may not reflect significant quality in standard living given that broadness in adopted classification for these indicators.

Water is one of the basic needs of every household. However, Kenya is among the water stressed countries in Africa with annual per capita water availability of less than 1000 $m^3$ (Jones, 2014). The results in Table 2 showed that deprivation in improved drinking water was reported by 24.69% of those from Mombasa 7.62% from Nairobi (6.85%) and 2.20% from Nakuru. Majority of the households that ran

out of water were from Mombasa (79.42%), Nakuru (72.86%) and Nairobi (70.23%). These findings are clear reflection of the fact that connectivity to improved sources of water does not imply availability of water. Furthermore, unimproved toilet facilities were mainly found in 13.38%, 9.19% and 7.09% of households from Nairobi, Mombasa and Nakuru, respectively. Households that were sharing toilets were mainly found in Nairobi (69.85%), Mombasa (44.72%) and Nakuru (34.72%). Sharing of toilet with other urban households often depicts congestion (McFarlane, 2019). Moreover, the Table showed that unimproved lighting energy was mainly used by 5.08% of the households from Mombasa, 2.54% from Nairobi and 3.18% from Nakuru, while unimproved cooking energy was mainly used by 73.59% of the households from Nakuru, 63.10% from Mombasa and 25.00% from Nairobi.

**Table 2. Distribution of refugees' deprivations in some housing characteristics**

| | Mombasa | | Nairobi | | Nakuru | | All Respondents | |
|---|---|---|---|---|---|---|---|---|
| | Freq | % | Freq | % | Freq | % | Freq | % |
| Number of rooms | 407 | 55.83 | 840 | 64.62 | 288 | 70.42 | 1535 | 62.96 |
| Dwelling type | 76 | 10.43 | 103 | 7.92 | 30 | 7.33 | 209 | 8.57 |
| Floor materials | 46 | 6.31 | 59 | 4.54 | 7 | 1.71 | 112 | 4.59 |
| Roof materials | 10 | 1.37 | 17 | 1.31 | 2 | 0.49 | 29 | 1.19 |
| Wall materials | 113 | 15.50 | 224 | 17.23 | 43 | 10.51 | 380 | 15.59 |
| Improved drinking water | 180 | 24.69 | 99 | 7.62 | 9 | 2.20 | 288 | 11.81 |
| Ran out water | 579 | 79.42 | 913 | 70.23 | 298 | 72.86 | 1790 | 73.42 |
| Unimproved toilet | 67 | 9.19 | 174 | 13.38 | 29 | 7.09 | 270 | 11.07 |
| Sharing toilet | 326 | 44.72 | 908 | 69.85 | 142 | 34.72 | 1376 | 56.44 |
| Unimproved lighting energy | 37 | 5.08 | 33 | 2.54 | 13 | 3.18 | 83 | 3.40 |
| Unimproved cooking energy | 460 | 63.10 | 325 | 25.00 | 301 | 73.59 | 1086 | 44.54 |

Assets are part of the major components of welfare (Prabhakar, 2019). Therefore, their utilization is widely seen as components of the absolute functionality of housing attributes for the utmost satisfaction of every member (Ronald et al., 2017). Table 3 presents the distribution of households' asset deprivations across the cities. The Table shows that among all the refugees, deprivations in radio and television were 81.91% and 60.05%, respectively. Nairobi had the highest radio deprivations at

84.00%, Mombasa and Nairobi had the highest deprivations in television at 60.63 and 60.62%, respectively.

The Table also shows that majority of the households who were deprived in satellite dishes/DSTV subscription were 91.00% for Nairobi, 90.81% for Mombasa and 88.26% for Nakuru. Deprivation in smart phones was 31.21% for all the refugees, with Mombasa having the highest value (36.35%). In the combined respondents, non-ownership of fridge and bed were 88.19% and 30.80%, respectively. Mattress was largely owned by refugees across the three cities with deprivation of 1.97% for the combined respondents. Mosquito nets were not owned by 68.13% of all the households. Also, 98.62% and 90.95% of the refugees from Nairobi and Nakuru did not respectively have electric fans. Majority of the respondents did not have personal means of transportation such as bicycle, motorcycle, and car. In addition, urban refugees were largely deprived in generator and solar panels. Kerosene stoves were not owned by majority of the refugees, although majority were using charcoal stoves. In addition, ownership of wheelbarrow was very low.

**Table 3. Distribution of urban refugees' deprivations in some households' assets**

| Assets | Mombasa | | Nairobi | | Nakuru | | All Respondents | |
|---|---|---|---|---|---|---|---|---|
| | Freq | % | Freq | % | Freq | % | Freq | % |
| Radio | 592 | 81.21 | 1092 | 84.00 | 313 | 76.53 | 1997 | 81.91 |
| Television | 442 | 60.63 | 788 | 60.62 | 234 | 57.21 | 1464 | 60.05 |
| Satellite | 662 | 90.81 | 1183 | 91.00 | 361 | 88.26 | 2206 | 90.48 |
| Smart phone | 265 | 36.35 | 383 | 29.46 | 113 | 27.63 | 761 | 31.21 |
| Fridge | 611 | 83.81 | 1183 | 91.00 | 356 | 87.04 | 2150 | 88.19 |
| Bed | 187 | 25.65 | 450 | 34.62 | 114 | 27.87 | 751 | 30.80 |
| Mattress | 14 | 1.92 | 27 | 2.08 | 7 | 1.71 | 48 | 1.97 |
| Mosquito net | 417 | 57.2 | 979 | 75.31 | 265 | 64.79 | 1661 | 68.13 |
| Fan | 517 | 70.92 | 1282 | 98.62 | 372 | 90.95 | 2171 | 89.05 |
| Bicycle | 710 | 97.39 | 1275 | 98.08 | 400 | 97.80 | 2385 | 97.83 |
| Motorcycle | 727 | 99.73 | 1297 | 99.77 | 407 | 99.51 | 2431 | 99.71 |
| Car | 725 | 99.45 | 1295 | 99.62 | 405 | 99.02 | 2425 | 99.47 |
| Generator | 728 | 99.86 | 1299 | 99.92 | 408 | 99.76 | 2435 | 99.88 |
| Solar | 729 | 100.00 | 1298 | 99.85 | 404 | 98.78 | 2431 | 99.71 |
| Stove (kerosene) | 626 | 85.87 | 832 | 64.00 | 288 | 70.42 | 1746 | 71.62 |
| Charcoal stove | 195 | 26.75 | 563 | 43.31 | 140 | 34.23 | 898 | 36.83 |
| Wheelbarrow | 728 | 99.86 | 1296 | 99.69 | 408 | 99.76 | 2432 | 99.75 |

### 3.2. Decomposition of Refugees' MPIs Across Kenyan Cities

The results in Table 4 showed the levels of MPIs across each of the cities. It reveals that in the combined data, 99.47% of the households were multidimensionally poor. This can be matched with 98.90%, 99.77% and 99.51% for Mombasa, Nairobi and Nakuru, respectively. The results further revealed the degree of poverty intensity among the refugees. Specifically, while all the respondents have poverty intensity of 0.5560, among the cities, intensity was highest in Nairobi at 0.5597. The MPI for combined data was 0.5487, while Nairobi refugees had the highest value (0.5584).

**Table 4. MPI Decomposition Across the Cities of Residence**

| City | No. Poor | Incidence (H) | Intensity (A) | MPI |
|---|---|---|---|---|
| Mombasa | 721 | .9890 | .5459 | .5399 |
| Nairobi | 1297 | .9977 | .5597 | .5584 |
| Nakuru | 407 | .9951 | .5358 | .5331 |
| All respondents | 2425 | .9947 | .5560 | .5487 |

### 3.3. Demographic Characteristics of the Refugees

Table 5 shows the percentages of the refugees with selected demographic characteristics. The results showed that 53.32% of the refugees were from Nairobi, while 29.90% were from Mombasa. It also reveals that 7.42% belonged to Community-Based Organizations (CBOs), while bank loan was accessed by 0.90%. Informal loans were accessed by 1.15% and 39.62% obtained loans from friends and other relatives. With respect to savings, 55.66% had access to MPESA savings, while only 2.75% saved with banks. Saving inside pillows was practiced by 17.68%, while 0.98% used village savings. Among the coping methods that were used against financial hardships during the COVID-19 pandemic, sale of physical assets like radio etc. was mostly used (34.78%), while 22.27% and 23.58% respectively borrowed money and sold land or house. In addition, 7.71% sold more animals.

**Table 5. Selected demographic characteristics of urban refugees in Kenya households**

| Variables | Percentage (%) |
|---|---|
| Location | |
| Mombasa | 29.90 |
| Nairobi | 53.32 |
| Nakuru | 16.78 |
| Member of Community-Based Organization | 7.42 |
| Bank loan | 0.90 |
| Informal loan | 1.15 |
| Friend/relation loan | 39.62 |
| Village savings | 0.98 |
| Bank savings | 2.75 |
| MPESA | 55.66 |

| | |
|---|---|
| Pillow savings | 17.68 |
| Coping mechanisms against financial hardship | |
| Sold physical assets | 34.78 |
| Reduced spending | 12.06 |
| Sold productive assets | 10.30 |
| Spent savings | 0.53 |
| Borrowed money | 22.27 |
| Sold house/land | 23.58 |
| Withdraw kids from school | 0.04 |
| Sold last female animal | 1.80 |
| Begged | 0.08 |
| Sold more animals | 7.71 |

### 3.4. Determinants of Multidimensional Poverty

Table 6 presents the Tobit regression results on the determinants of Alkire-Foster multidimensional poverty indicators among Kenyan refugees. According to Walker et al. (2010), refugees' opportunities as well as their impactful participation in communities are brought about community-based organizations. The results showed that the parameter for member of community-based organisation was negative and statistically significant at 1%. These results imply that when holding all other variables constant, refugees who were members of CBOs had their Alkire-Foster MPI decreased by 0.010283. These results are contrary to those of Yang and Xu (2024) who noted that even though the living conditions of poverty-stricken Chinese residents are improved by CBOs, the case of refugees was contrary. Although Odunola ((2012) emphasized that membership of CBOs contributes to development, the results, however, did not show statistical significance on the relationship between CBO membership and poverty alleviation. However, the results are consistent with those of Park and Wang (2010) who found out that CBOs benefitted the poorest of the poor in China, playing an important role in rural poverty.

The results also revealed that the parameters of Nairobi were positive and statistically significant at 1%. This implies that holding other factors constant, Kenyan refugees who resided in Nairobi had their MPI increased by 0.0244818, when compared with those who resided in Mombasa. These results may be associated with those of Nafula et al. (2020) who revealed that 50% of the households residing in Nairobi experienced a loss in their income during the COVID-19 pandemic, mainly the lower and middle class. They further mentioned that Nairobi was the city where lockdowns were largely enforced and implemented. This result is contrary to those of Shifa and Leibbrandt (2017) who found that Nairobi and Nakuru households had relatively lower levels of deprivations.

The parameters of bank, pillow and MPESA savings show statistical significance at 1% level. Specifically, MPI reduced by 0.0797315, 0.036748 and 0.034977 among

refugees who were saving with banks, MPESA and pillows, respectively. These findings are buttressed by those of Shan (2010), Kiiti and Mutinda (2018), and Djahini-Afawoubo and Couchoro (2023) who also found mobile money to have a statistically significant contribution on multidimensional poverty reduction and enhancement of overall living conditions. Specifically, ability to save money can promote welfare and it may as well indicate some level of wealth (Dynan et al., 2004). In some previous studies, the role of savings in reducing multidimensional poverty had been emphasized (Wang et al., 2021; Tran et al., 2022).

Among the variables that capture some level of inherent vulnerability of the households, the parameter of presence of separated child in the household has negative sign and statistically significant ($p<0.05$). The result implies that households that had a separated child had their MPI being lower by 0.0216316. This finding reflects the fact that poor households would not be in position to house abandoned children. It also reflects the fact that integrating an abandoned child with some foster parents follow some conventional requirements with ability to take care of such child being fundamental. A study by Bachan (2014) concluded that foster children do not deplete the wealth of the host families. In addition, the parameter of physical disability showed statistical significance ($p<0.01$) and with positive sign. This result reveals that MPI increased by 0.0256857 among refugees with disabled members, when compared with their counterparts without disability. Several studies have amplified the role of disability in the promotion of multidimensional poverty with unanimous conclusion on existence of positive correlation (Yeob et al., 2023; Banks et al., 2021; Pinilla-Roncancio et al., 2020). However, contrary to expectation, MPI significantly reduced ($p<0.01$) among households with a member with serious medical problem. In a study by Callander et al. (2013), poverty was associated with presence of chronic diseases. However, the influence of chronic diseases on MPI may depend on the nature of interventions needed to address the health problem. Specifically, households in urgent need of some medical interventions that warrant quick sale of productive assets may be deeply entrapped in multidimensional poverty in the long run.

The results further revealed that parameters for sold more animals is positive and statistically significant at 1%. These results show that holding all other variables constant, refugees who sold more animals had their MPI increased by 0.052714. These results are contrary to those of Kamal (2014) who found a positive and statistically significant relationship between asset income and poverty reduction. Finally, the parameter of formal borrowing is statistically significant ($p<0.01$) with negative sign. This implies that refugees who engaged in formal borrowing has their MPI being lower by 0.0210615. This reflects the fundamental linkage between ability to borrow formally and wealth. More importantly, our finding can be buttressed by that of Ntsalaze and Ikhide (2017) who emphasized the role of borrowing as a coping strategy against shock exposure.

**Table 6. Determinants of Alkire-Foster Multidimensional Poverty Index (MPI)**

| | Coeff | Std. err. | t-stat |
|---|---|---|---|
| Community-based organization member | -.010283*** | .0074645 | -4.16 |
| Household size | -.0011596 | .0007296 | -1.59 |
| *Location* | | | |
| Nairobi | .0244818*** | .0043147 | 5.67 |
| Nakuru | .0011583 | .0057709 | 0.20 |
| *Loan and savings* | | | |
| Bank loan | .0198247 | .0196218 | 1.01 |
| Informal loan | .0202481 | .0174951 | 1.16 |
| Friend/relation loan | .0060627 | .0040177 | 1.51 |
| Village/community/association savings | .0013275 | .0194613 | 0.07 |
| Bank savings | -.0797315*** | .0114846 | -6.94 |
| Mpesa/Mshwari Saving/Digital banking | -.036748*** | .0042649 | -8.62 |
| Pillow savings | -.034977*** | .0052334 | -6.68 |
| *Vulnerability* | | | |
| Separated child | -.0216316** | .0103119 | -2.10 |
| Physical disability | .0256857** | .0106689 | 2.41 |
| Cognitive disability | .0172362 | .0162329 | 1.06 |
| Sensory disability | .0070122 | .012198 | 0.57 |
| Serious medical problem | -.0193773*** | .0070353 | -2.75 |
| *Coping mechanisms* | | | |
| Sold assets/goods | -.0196652*** | .0067596 | -2.91 |
| Reduced spending on health or education | .0054882 | .0064255 | 0.85 |
| Sold productive assets | -.0111603 | .0075796 | -1.47 |
| Spent savings | -.0008388 | .0254773 | -0.03 |
| Formal borrowing | -.0210615*** | .0061344 | -3.43 |
| Sold house or land | .0047919 | .0062983 | 0.76 |
| Withdraw kids from school | .0633381 | .0909513 | 0.70 |
| Sold last female animal | .016427 | .0148634 | 1.11 |
| Begged | -.0361722 | .0649818 | -0.56 |
| Sold more animals | .052714*** | .0082522 | 6.39 |
| Constant | .5724602*** | .0075609 | 75.71 |
| var(e.mpi2) | .0082249*** | .0002368 | |
| | | | |
| Number of observations | 2438 | | |
| LR chi2(26) | 370.15*** | | |

*Note: *** - Significant at 1% level; ** - Significant at 5% level*

## 4. Conclusion

It has been acknowledged that poverty is not only based on the lack of income but multiple deprivations that adversely affect lives, especially when one is a refugee. This study revealed the magnitude of different form of deprivations affecting urban

refugees in Kenya. The findings have underscored high incidence and intensity of multidimensional poverty among refugees resident in urban cities in Kenya. The results have also revealed the complex nature of poverty with emphases on some significant socioeconomic and demographic correlates. Specifically, our findings have revealed the need to promote refugees' participation in some CBO activities for collective poverty alleviation. Such engagement will facilitate the cognitive responsibility of refugees towards some development interventions for accessing some formal and informal savings. In addition, government's support for CBO activities would promote their ultimate impacts as primary mediator in the advancement of refugees' welfare. There should also be facilitation of access to mobile banking and formal borrowing through adequate education, awareness creation and safety enhancement. The government and other interested stakeholders should put in place some alternative safety net programmes to reduce distress sale of assets among refugees in times of income shock to ensure stability of their living conditions. Such intervention should prioritize households with disabled members. Finally, addressing multidimensional poverty among Kenyan refugees requires interventions that consider the spatial differences in their levels of welfare with peculiar focus on those residing in Nairobi.

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