

Impact of COVID-19 policy measures on food insecurity among urban residents in Blantyre City, Malawi

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Abstract

Malawi, a vulnerable country in Sub Saharan Africa is at the helm of experiencing food insecure amidst COVID-19 as the vast majority survives on the hand-to-mouth economy. However, knowledge about how COVID-19 policy measures leads to food insecurity among the urban residents in Malawi is limited or scanty. Understanding this link is crucial for designing the interventions that can help reduce the risk of being food insecure while containing further spread of the virus. Our study explores the nexus between COVID-19 policy measures and food insecurity as experienced by Blantyre residents in Malawi. We interviewed fifteen participants composed of private secondary school teachers and informal workers to understand their experiences of food insecurity linked to COVID-19 policy measures in place by the Malawi government. Our results show that participants face difficulties to access adequate food and have also changed their eating habits by skipping meals in some days as a result of closing night clubs, bars, and schools, restricting public gatherings, and reducing passengers boarding minibus. Therefore, we argue that the COVID-19 policies in place by the Malawi government aggravates the severe challenges to access enough food rendering urban residents vulnerable to food insecurity.

Introduction

As the world continues battling with COVID-19 started in Wuhan late 2019, which has seriously disrupted the global economy as well as the food supply chain, several countries are at risk of being food insecure including Malawi (World Bank, 2021; Munthali & Xuelian, 2020b; WHO, 2020; Xuelian, 2020). Food insecurity is defined as inability or deficiencies to access adequate quantity, nutritious safe food as well as feeling not being satisfied with the food being consumed (Schroeder, 2015). A recent report by the World Food Program (WFP) shows that in the year 2020, nearly 137 million people worldwide faced acute food shortages, and this figure is significantly higher as compared to the initial estimates before the inception of COVID-19 (World Bank, 2021). The United Nations Sustainable Development Goals came up with a very ambitious goal—to end hunger by 2030 (Otegunrin, Otegunrin, Sawicka, & Ayinde, 2020), unfortunately, the pandemic has disrupted this goal as over 150 million people globally today are trapped into extreme poverty (Varanasi, 2020). Scientists predicted that poverty would persist until 2050 as millions of households in Sub-Saharan African (SSA) countries such as Ghana, Senegal, and Zimbabwe are food insecure (Varanasi, 2020; Otegunrin et al., 2020). Since the geography of SSA is well known for its multiple problems such as extreme poverty, hunger, water insecurity as well as disease burdens, there is no doubt that COVID-19 has posed a serious socio-economic dilemma, which has disproportionately affected food security.

Malawi, a country in SSA remains the poorest in the world with over half of its population living below the poverty line and 25% are extremely poor (Economic Development Report for Malawi (EDRM), 2017). There has been an increased level of poverty exacerbated by the worst floods and drought of 2015 and 2016 which resulted in widespread food insecurity (EDRM, 2017). The perception and concept of Food security in Malawi generally centers around maize production, distribution, and utilization. While Malawi produces a variety of food crops, maize accounts for 90% of the produce. It is the staple food in the country, consumed by almost the entire population. Other crops such as rice, cassava and potatoes only supplement maize consumption. In Malawi's framework or context, the availability of and access to sufficient maize defines food security. (Makombe et al., 2010).

Given the pre-existing challenges, COVID-19 accelerates the burden of urban residents living on a hand to mouth economy. In Malawi as of February 2021, out of 21, 660 Covid-19 confirmed cases, 13, 646 are active cases, and nearly 555 people have died, including the demise of the top government officials such as ministers (Pensulo, 2021). With alarming, confirmed cases and associated deaths, the government gazetted strong preventative and

control measures such as reducing the number of minibus and taxi passengers and closing bars and marketplaces at eight o'clock in the evening time (Pensulo, 2021). These measures have been deemed to be extremely harsh by the urban dwellers as they pose threat to their livelihoods (Munthali & Xuelian, 2020a).

Understanding the nexus between COVID-19 measures and food security in the Malawian context is crucial for effective implementation of interventions that can help reduce the risk of being food insecure while preventing further spread of the virus. Food insecurity is linked to child stunting and this is a big problem in Malawi as evidenced in the central region (Chilanga, 2020). However, there is a gap in knowledge of how COVID-19 policy measures have led to urban food insecurity among urban residents in Malawi. Our study contributes to the existing literature by examining the emerging geographies of household food insecurity linked to the newly COVID-19 policy measures in Malawi's secondary city of Blantyre.

Conceptual framework

We used Urie Bronfenbrenner's ecological theory to better understand the determinants of household food insecurity amidst COVID-19 among informal workers in Blantyre, Malawi. Bronfenbrenner's ecological theory unfolds the interconnectedness between the environment and the people it nurtures. Thus, external factors can influence the individual's capacity to do certain actions, and at the same time, the environment can be altered by the individual's activities (Cistrunk, Oliver, Kerr, Trinh, Kobia, Hossfeld, Johnson, and Jones, 2019). External factors include the interpersonal, societal, community, organizational, State, and or National levels (Cistrunk et al., 2019). These are nested within the broader context of culture and policies that reinforce specific values and behaviors. Other studies have used ecological theory to understand how food pantries are managed and its relationship to food insecurity in the rural communities of Mississippi, USA (Cistrunk et al., 2019). By using ecological approach, we examine how the societal systems and structures such as government policies on COVID-19 have rendered household food insecure by influencing changes in their daily meal consumption as well as limiting people's capacity to access basic food and or reducing the availability of food supply.

The history of food insecurity in Malawi

Malawi's economy is entirely agricultural. The country feeds its population with primary produce, grown on the fertile soil with the aid of seasonal rainfall (Giertz, Caballero, Dileva, Galperin, 2015). Changes in the rainfall patterns alternates harvest on the farm, affecting the nation's food security. Historically, Malawi suffered extreme food shortages that eventually led to the most notable famines in living memory. The Nyasaland famine of 1949 severely hit the southern region, extending to the central province (Hajdu, Ansell, Robson, van Blerk and Chipeta, 2009). It commenced in 1948 and lasted until March 1949. While many factors accounted for the 1949 catastrophe, it was the drought of December 1948 that greatly resulted into this famine (Hajdu et al., 2009). The country received half rainfall in 1948 and witnessed no rains in the same year, leading to severe droughts (Hajdu et al., 2009). The drought hindered germination and growth of food crops, causing a significant loss in farm produce. Food crop failures downsized the country's food security, making the largest population suffer a severe hunger. The death of people to famine accelerated even when the phenomena ceased. Fortunately, the colonial government, in response, encouraged root cropping to diversify sources of food and reduce dependency on maize products. Such governmental efforts accompanied by labor migrations and consumption of wild plants mitigated the impacts of the Nyasaland famine of 1949 (Hajdu et al., 2009).

Malawi at independence in 1964 launched new agricultural policies that intensified food production to ensure national food security. Late Dr. Hastings Kamuzu Banda, the president of the time, subsidized household farming

with free inputs such as fertilizers, and seeds. The country in the years between 1960 and 1970 secured enough food for its population from successful farming (Harrigan, 2008). However, towards the closure of the 1980s and the onset of 1990s, food insecurities resurfaced. The Southern African droughts dropped maize harvest by 50%, limiting the people's access to the food resources. Reduction in maize production impacted its marketing price which doubled in 1992 and 1993, making the poor Malawians suffer extreme hunger (Harrigan 2008).

The Malawi government reduced hunger intensity with the provision of food aid, free maize seeds, and fertilizers as part of the Drought Recovery Inputs Program (DRIP). Nearly 1.3 million of Malawi's population benefited from this program (Harrigan, 2008). In 1996, the government also embarked on the Starter Park Program (SPP) to ensure food security and alleviate poverty in the country. Through the SPP, the government allocated hybridized maize seeds and legume seeds to household farmers. It was estimated that the country would double maize production and even register extra yields. Nevertheless, such successes in achieving food security lapsed in 2001 with another living memory of famine. Flooding and inadequate rainfalls reduced harvest of maize by 30%, causing food insecurities. The 2002 famine was so devastating as it claimed over 1000 lives of the people (Hajdu et al., 2009). During all the events of famine and food insecurity in the country, it was mostly one single crop of maize that disappeared.

Methods

Study locality

Malawi is located in southern Africa, bordered by Tanzania to the north, Zambia to the west and Mozambique to the south (**Figure. 1**). The Malawi National Statistical Report of 2017 shows that there were over 17.6 million people in Malawi. More than half of the country's population are living below the poverty line and almost a quarter are trapped into extreme poverty (World Bank., 2018). Malawi has three main secondary cities namely: Mzuzu, Lilongwe, and Blantyre situated in the Northern, Central, and Southern regions, respectively. This study was conducted in Blantyre city, one of the oldest urban centers founded in 1870s by the Scottish missionaries (UN-HABITAT,2011). Blantyre city serves as the second largest commercial city in Malawi with a population of about 1 million people (Riley, 2019). Informal employment forms the main sources of income for the vast majority (>90%) of which most these are engaged in agricultural activities, and others in an unregistered income generating activities (GoM, 2020).

Data Collection and Analysis

We hired a research assistant who was fluent in both English and Malawi's local language to interview minibus drivers, vendors, private school teachers, and sex workers. The interviewer was trained in qualitative research inquiry, research ethics, and all research protocols regarding the sensitivity of the topic under study in relation to the nature of the participants. A total of fifteen participants were recruited in the study drawn from different localities within the city region. The age ranges of the participants were between 19 and 36 years. We determined the sample size and the participants based on the principle of maximum variation to collect diverse data (Palinkas et al., 2013). Interviews were conducted with each participant to capture in-depth information regarding their experiences and worry about being food insecure as a result of COVID-19 policy measures. For each participant, the interview lasted approximately 40-90 minutes. Interviews are usually conducted to a small number or group of people with an aim of capturing individuals' views and understanding about a certain phenomenon (Boyce, 2006).

Interview guides containing modified questions adopted from a Household Food Insecurity Access Scale (HFIAS) were sent to our research assistant in Malawi. A consent to participate in the study was obtained from each participant verbally in either English or Chichewa languages. We preserved the names of all participants by using pseudonyms throughout the manuscript. Data analysis involved verbatim transcription of the data from Chichewa into English language. We used hand-coding to analyze the interview transcripts for rigor of our qualitative data (Miles and Huberman, 1994). All authors read the raw data for several times and drew the themes that were significant to address our research questions (Crabtree and Miller, 1992). For the reliability of the data, the codes derived were compared and subsequently organized into categorized and themes. Direct quotations from the respondents were presented narratively in the form of stories.

Research Ethics Review

Ethical approval to conduct this study was obtained from the University of Livingstonia research ethics committee in Malawi by the second author (protocol number: UNILIA-REC/1/CUP 2/01). We sought written permission from the Lilongwe city Assembly. We also obtained written consent from the participants prior to the interviews.

Results

This report is based on a qualitative study on how COVID-19 preventive measures have seriously impacted on food insecurity among the Blantyre residents in Malawi. We carried out the task of interviewing participants, reviewing the findings, and crafting our work under the framework of ecological theory, reflecting on how the changes in the government's policies have concurrently altered food consumption and access. Our results revealed that residents in Blantyre city are facing significant challenges to access adequate nutritious food as a result of the new preventive measures in place by the Malawi government towards reducing the further spread of the virus. Our findings about the emerging geographies of food access difficulties are categorized into the following themes: people's access to income amidst COVID-19, daily access to food as well as food eating habit adjustments during the second wave of the pandemic.

People's access to income amidst COVID 19

The awareness of the COVID infection has directly lowered people's accessibility to financial resources. Different categories of the people interviewed complained about poor economic performance as a product of the fear for COVID infection. As generally articulated, social gatherings and personal contacts outspread the coronavirus within a split of a second. Such an awareness discouraged people from accessing services from sex workers. Our conversation with a sex worker confirmed the detachment of the existing clients by articulating that:

The nature of our job puts us and our clients at risk of contracting the virus, and due to this, we have lost several valued and potential clients. (Goweko, 24, Sex worker)

Losing clients financially cripple sex workers who solely depend on the provision of services to feed their family. Stories of sex workers resonate with many citizens surviving on undocumented tasks in untamed urbanism.

Vendors shed similar fate as buyers of their items unlikely present themselves in crowded towns, fearing COVID 19 contraction. This bears serious consequences on the outcome of business in town. The vendors profit less than usual from the sales, hence discarding their access to financial wealth.

People's access to food during the COVID-19 pandemic

The measures against a further spread of the COVID 19 suppressed people's accessibility to food. The Malawi government installed preventive measures to keep citizens away from contracting the pandemic. During interviews, participants reported that the government in response to the COVID 19 outbreak officiated a curfew, commencing at 8pm of every single evening. This measure required city dwellers to close businesses and desert the town at the demanded time. However, citizens with total dependence on informal business accumulated more profit during night hours than daytime. In our interviews, another sex worker reported reduced income status as a result of the curfew.

We used to make a lot of money in night clubs and bars just by entertaining or dancing for the clients but now with the government's restrictions, all these entertainment centers are now running for a few hours and it is very hard to make a reasonable amount of money as we used to make before (Chamoka, 27, Sex worker).

These views were also similar to those expressed by another sex worker who overwhelmingly pointed that:

We can't find money that could have been used to buy healthy food because our clients are scared to come out of their houses at night. (Hawaya, 20, Sex worker).

Feeling discontented with this development, sex workers marched in the streets, demanding the government to undo the curfew (Pensulo, 2021). Most vendors enrolled in the untamed business also suffered the consequences of preventive measures, alongside sex workers. With the curfew in towns, business remained open only during unprofitable hours and shut down at the time people are available to purchase food items.

Additionally, the people's purchasing power reduced, worsening profitability at the market. The reduction in purchasing power originated from the closure of schools, which downsized income of the teachers by 50 or even 100 %. Private schools entirely survive on tuition fees collected from students. When the government shut down schools to disperse the students away from each other, a collection of schooling fees to pay teachers also shut down. In the end, teachers only walk home with little or nothing, and this hugely impacted food access and consumption. One private school teacher complimented that:

Some of us do not have enough money to buy proper food due to the closure of schools. The owners of the schools argue that they cannot pay us our usual salaries because we are not working as the schools are closed in compliance with the government policies (Kapadala, 33, Private School Teacher)

Vendors face similar limitations to access food for their daily survival as stated: ,

I am not making as much money as I used to make before, and this has resulted in me failing to afford buying enough relish or maize flour that could last me and my family for the whole month." (Mnatharu, 36, Sex worker)

Changes in eating habits during the pandemic

Residents in Blantyre city have changed eating patterns just to prolong their survival and reduce sufferings resulting from limited access to food resources. During interviews, participants reported that they invented ways of mitigating the effects of food inaccessibility as a result of the pandemic. They opted to eat less than usual. When asked the meaning of this phrase, participants literally referred to skipping one meal on the daily menu as well as preparing only half of the normal size of the food consumed. In Malawi, people usually follow a meal plan of three patterns that commences with breakfast, lunch and then dinner. However, the coming of the COVID 19 has crippled food accessing power, limiting the quantity and quality of the food available for consumption. In response to this

challenge, citizens resonated to skipping meals as a way to extend consumption of the little food available at home. Apart from adjusting to eating only twice a day, they also eat a small-sized portion of the meal. One of the private school teachers(B) enriched our findings by saying these remarks:

During this time while we are waiting to be called back at work, we have to eat less in order to survive since we have little money to buy food in the near future in case you are at home for a longer time without a job. (Dokiso, 32, Private School teacher)

Eating less and skipping meals have become the possible strategies of combating the pressure of food inaccessibility and also the normal eating habits during the pandemic. We note that people also normalize eating less nutritious food as part of the food coping strategy during the reign of the pandemic. Food rich in nutrients generally cost higher than less nutritious ones. In Malawi, meat, chicken, fish, and other stuff are more expensive than vegetables, sweet potatoes, cassava, and soya beans. With shortages of impressive income, diversifying food consumption to ensure maximum utilization of nutrients becomes an obstacle. Another secondary school teacher also reported that:

I am not earning my full salary and due to this I'm not able to buy different kinds of foodstuffs because the money is not just enough, and things are now expensive. (Asamma, 25, Private school teacher).

Therefore, people eat what their tender pockets affords, usually cheap, and less nutritious. In accordance with the perspectives from the above teacher, another sex worker made the following remarks:

"Due to little or no money, I have been finding problems buying and eating healthy food. I mainly resort to anything that is extremely cheap" (Habidu, 23, sex worker)

Discussion

This study employed a purely qualitative inquiry approach by conducting in-depth interviews to better understand and explore how COVID-19 policy measures have impacted on food insecurity among urban residents in Blantyre city, southern Malawi. Our study findings are consistent with recent studies conducted in Nigeria (Balana et al.,2020), Kenya and Uganda (Centre for Agriculture and Biosciences International [CABI] 2020), and Ethiopia (Abay, Berhane, Hoddinott and Tafere et al., 2020).

Drawing evidence from Nigeria, many households with low-income status worried about being food insecure as a result of COVID-19 policies such as lockdowns instituted by the Government (Balana et al., 2020). In accordance with this, one of the critical themes emerged in our study was that participants expressed worry about having no or little access to income and other resources following the COVID 19 policy measures. Residents engaged in informal activities in the city are unable to work, trade, and do any other business as usual due to the government's policies such as banning public gatherings, shutting down schools, reducing the number of passengers hiring minibuses, and closing the nightclubs and bars. This has resulted in disrupting business/market thereby increasing their vulnerability to food insecurity among the informal workers (Riley, 2019). Given that urban life depends on income, lack of financial and other resources has resulted in severe complications for the informal workers to afford buying adequate nutritious food for health as well as deteriorating their livelihoods. Our finding agrees with a study conducted in Ethiopia on COVID-19 and food security, which revealed that market closure, income loss, and increased in food prices during this pandemic period has negatively impacted the general livelihoods of people in the country (Abay et al.,2020). Furthermore, our findings are in consistence with other studies conducted in Africa

that revealed that many people access to income and other social economic activities has been negatively affected due to COVID-19 (Martin, Markhvida, Hallegatte, & Walsh, 2020; Owori, 2020).

The findings of our study have further showed that people developed coping strategies to accommodate food consumption and access challenges in the midst of the COVID-19 pandemic. People have altered the normal eating sequences from three times to two or once per day. The coping strategies also include consumption of less nutritious food. These findings concur with recent studies in Kenya and Uganda on the impact of COVID-19 on food security, revealing that households adjusted their dietary pattern by consuming less diversified food, and reducing the usual amount of the food consumed, and skipping meals (CABI, 2020).

While the coping strategies seemingly contain the challenges of food consumption and access, they have devastating impacts on people's nutritional health. Skipping meals, eating less than the normal size and consuming less nutritious food can apparently result in malnutrition, which increases risk for illness. A study conducted in Kaplan Harzfield Medical center found that poor dietary intake accounted for the hospitalization of many patients (Kagansky, Berner, Koren-Morag, Perelman, Knobler, and Levy, 2005). The patients displayed signs of deficiency diseases that negatively impacted their health, leading to the death of 22.9% of them (Kagansky et al., 2005). Thus, advancement in such coping strategies puts the lives of the Blantyre residents at high risk of suffering from deficiency diseases, stunted growth, and increased deaths. Our projection aligns with the study on Early Food Insecurity Impacts of COVID 19 conducted in Vermont, United States, which predicts increased healthy-related diseases if the people continue consuming poor dietary food as coping strategies to food shortages during this pandemic period (Niles, et al., 2020). The COVID-19 outbreak, apart from suffocating the public health safety, has also exacerbated food insecurities among the urban dwellers in Blantyre city.

Conclusion

The present study revealed food insecurity among the urban residents especially private school teachers and the informal workers is worsening in Blantyre city. When the respondents were asked about food security, they overwhelmingly expressed worry about having no or little income as well as resources that would enable them to afford buying adequate food blaming the existing COVID-19 policy measures. As such, most participants resorted to eating less nutritious food as well as skipping meals, thus risking their health safety and well-being. Despite Malawi's historical record of being vulnerable to food insecurity, we validate our understanding that COVID-19 policy measures in place by the Government of Malawi have aggravated food insecurity. We therefore recommend the Malawi government to design immediate interventions such as provision of relief funds as well as reversing some of the policies to rescue the vulnerable groups from the effects of food insecurity while containing the pandemic. Food assistance programs such as free food distribution in reducing the vulnerability to food insecurity among the residents in the study area.

Declarations

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Author's contribution

Mastano Dzimbiri: Conceptualization and writing of the first draft

Patrick Mwanjawala: Data analysis and interpretation

George N. Chidimbah Munthali: Editing

Emmanuel Chilanga: Final review and editing

Consent for publication

All authors gave consent for the publication

Availability of data and materials

All data is provided by the authors

Competing interest

The authors declare no competing interest

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References

Åsa Giertz, Jorge Caballero, Margareta Dileva, Diana Galperin, and T. J. (2015). Manging Agriculture Risks for growth and food security in Malawi. In *WBG* (Vol. 69). Retrieved from <https://linkinghub.elsevier.com/retrieve/pii/S0306919217302695>

Balana, Bedru B.; Oyeyemi, Motunrayo A.; Ogunniyi, Adebayo I.; Fazoranti, Adetunji;

Edeh, Hyacinth; Aiki, Joel; and Andam, Kwaw S. (2020). The effects of COVID-19 policies on livelihoods and food security of smallholder farm households in Nigeria: Descriptive results from a phone survey. IFPRI Discussion Paper 1979. Washington, DC: International Food Policy Research Institute (IFPRI). <https://doi.org/10.2499/p15738coll2.134179>

Boyce, C., & Neale, P. (2006). *CONDUCTING IN-DEPTH INTERVIEWS*: 16.

Chilanga, E., Collin-Vézina, D., MacIntosh, H., Mitchell, C., & Cherney, K. (2020).

Prevalence and determinants of malaria infection among children of local farmers in Central Malawi. *Malaria Journal*, 19(1), 308. <https://doi.org/10.1186/s12936-020-03382-7>

Cistrunk, K. M., Oliver, B., Kerr, L. J., Trinh, M., Kobia, C., Hossfeld, L., Johnson, K. R.,

& Jones, C. (n.d.). *An Ecological Approach to Understanding Program Management Practices for Food Pantries in Rural Communities*. 12.

Edward A. Frongillo, Nusrat Chowdhury, Eva-Charlotte Ekström, Ruchira T. Naved

- (2003), Understanding the Experience of Household Food Insecurity in Rural Bangladesh Leads to a Measure Different from That Used in Other Countries, *The Journal of Nutrition*, Volume 133, Issue 12, Pages 4158–4162, <https://doi.org/10.1093/jn/133.12.4158>
- Frongillo, E. A. & Nanama, S. (2003) *Development and validation of a questionnaire-based tool to measure rural household food insecurity in Burkina Faso*. Proceedings of International Scientific Symposium on Measurement and Assessment of Food Deprivation and Undernutrition, 26–28 June 2002. Food and Agriculture Organization of the United Nations, Rome, pp. 309–310
- Hajdu, F., Ansell, N., Robson, E., van Blerk, L., & Chipeta, L. (2009). *Socio-Economic Causes of Food Insecurity in Malawi*
- Harrigan, J. (2008). Food insecurity, poverty and the Malawian Starter Pack: Fresh start or false start? *Food Policy*, 33(3), 237–249. <https://doi.org/10.1016/j.foodpol.2007.09.001>
- Hirvonen, K., de Brauw, A., & Abate, G. T. (2021). Food Consumption and Food Security during the COVID-19 Pandemic in Addis Ababa. *American Journal of Agricultural Economics*, ajae.12206. <https://doi.org/10.1111/ajae.12206>
- International Monetary Fund. (2017). Malawi: Economic Development Document. *IMF Staff Country Reports*, 17(184), 1. <https://doi.org/10.5089/9781484307311.002>
- Kagansky, N., Berner, Y., Koren-Morag, N., Perelman, L., Knobler, H., & Levy, S. (2005). Poor nutritional habits are predictors of poor outcome in very old hospitalized patients. *The American Journal of Clinical Nutrition*, 82(4), 784–791. <https://doi.org/10.1093/ajcn/82.4.784>
- Makombe, T., Lewin, P., & Fisher, M. (2010). *The Determinants of Food Insecurity in Rural Malawi: Implications for Agricultural Policy*. 4. *Malawi-scd-final-board-12-7-2018-12122018-636804216425880639.pdf*. (n.d.). *Milesandhuberman1994.pdf*. (n.d.).
- Morgan, E. (n.d.). *The Early Food Insecurity Impacts of COVID-19*. 14.
- Martin, A., Markhvida, M., Hallegatte, S., & Walsh, B. (2020). Socio-Economic Impacts of COVID-19 on Household Consumption and Poverty. *Economics of Disasters and Climate Change*. <https://doi.org/10.1007/s41885-020-00070-3>
- Munthali, G. N. C., & Xuelian, W. (2020a). COVID-19 Lockdown Measures on Least Developing Economies in Africa—a case of Malawi Economy. *Technium Social Sciences Journal*, 7, 295–301. <https://doi.org/10.47577/tssj.v7i1.394>
- Munthali, G. N. C., & Xuelian, W. (2020b). Covid-19 Outbreak on Malawi Perspective. *Electronic Journal of General Medicine*, 17(4), em210. <https://doi.org/10.29333/ejgm/7871>
- Naderifar et al. (2017). Snowball Sampling: A Purposeful Method of Sampling in

Qualitative Research: Strides in Development of Medical Education In Progress (In Press). DOI: 10.5812/sdme.67670.

Otegunrin, O. A., Otegunrin, O. A., Sawicka, B., & Ayinde, I. A. (2020). Three decades of fighting against hunger in Africa: Progress, challenges and opportunities. *World Nutrition*, 11(3), 86–111. <https://doi.org/10.26596/wn.202011386-111>

Owori, M. O. (2020). *Socioeconomic impact of Covid-19 in Uganda. How has government allocated public expenditure for FY2020/2021.*

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K.

(2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>

Riley, L. (2019). Malawian urbanism and urban poverty: Geographies of food access in

Blantyre. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 13(1), 38–52. <https://doi.org/10.1080/17549175.2019.1647275>

Schroeder, K., & Smaldone, A. (2015). Food Insecurity: A Concept Analysis: Food

Insecurity. *Nursing Forum*, 50(4), 274–284. <https://doi.org/10.1111/nuf.12118>

Webb, P., Coates, J. & Houser, R. (2003) *Challenges in defining direct measures of hunger*

and food insecurity in Bangladesh: findings from ongoing fieldwork. Proceedings of International Scientific Symposium on Measurement and Assessment of Food Deprivation and Undernutrition, 26–28 June 2002. Food and Agriculture Organization of the United Nations, Rome, pp.301–303.

WHO. (2020). Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). *Who*, 2019(February), 16–24. Retrieved from https://www.google.com/url?sa=t&source=web&rct=j&url=https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf&ved=2ahUKEwiFr5KrrpToAhWFdn0KHbRWABIQFjAAegQIBxAC&usg=AOvVaw1gO_RTfalWQuEkjdvq_07i

Xuelian, W. (2020). The Future of Tobacco Industry Amidst of COVID-19 -A Case of Malawi Producing Country. *Biomedical Journal of Scientific & Technical Research*, 27(5), 21104–21109. <https://doi.org/10.26717/BJSTR.2020.27.004566>

Figures

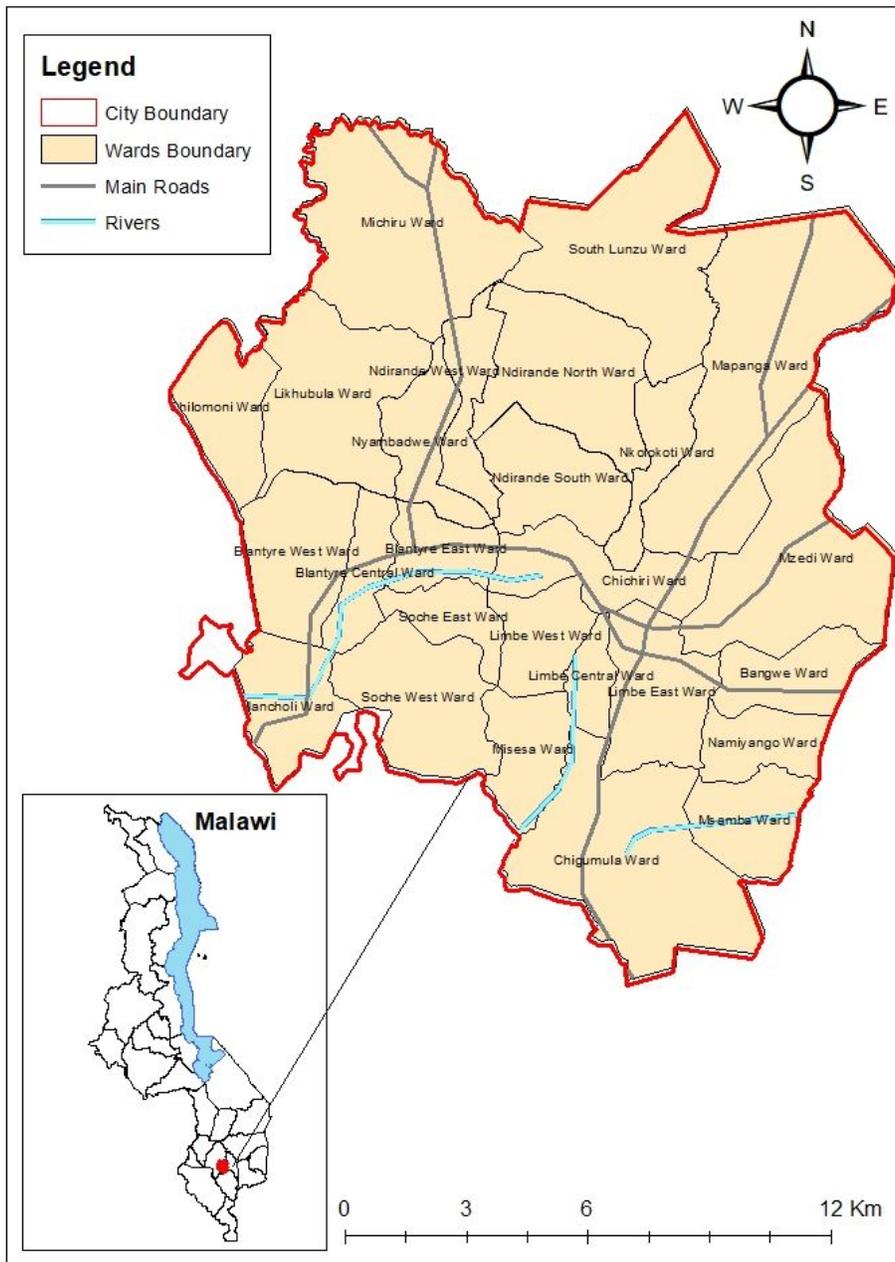


Figure 1

Location of Blantyre city within Malawi. Note: The designations employed and the presentation of the material on this map do not imply the expression of any opinion whatsoever on the part of Research Square concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. This map has been provided by the authors.