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DO COPING STRATEGIES IMPROVE HOUSEHOLD WELFARE? EVIDENCE FROM THE COVID-19 ERA IN LAGOS STATE, NIGERIA

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ABSTRACT

The COVID-19, a pandemic which affected millions of lives caused a decline in the living standards of many households. Households who were economically secured before became poor or risked becoming poor, and those who were initially poor were further pushed down the poverty trap. Different households in a bid to improve their standard of living during this period relied on different strategies. This study therefore investigated the effect of these coping strategies on household welfare in Lagos State, Nigeria with emphasis on the COVID-19 era. Multistage sampling technique was employed to select 400 households for this study. The data collected were presented with descriptive statistics and analyzed using coping strategy index and a two-stage probit regression model. The result revealed that there were more non-poor households than poor households, and that the coping strategies mostly adopted by household heads during the COVID-19 era were: relying on less preferred and less expensive foods, limiting portion size at mealtimes, reducing the number of meals, rationing the money they had and buying prepared food, and purchasing food on credit. The result revealed that coping strategies such as: relying on less preferred and less expensive food, purchasing food on credit, sending household members to eat elsewhere, and rationing the money households have at hand were significant to influence households' welfare. The study therefore recommends that vulnerable households should be assisted through different mechanisms as this study had shown that the different coping strategies adopted by households had mostly being not enough to increase their welfare.

Keywords: Household welfare, Coping strategies, COVID-19 Pandemic

INTRODUCTION

The COVID-19 pandemic which began as a local health challenge from Wuhan, China metamorphosed into a monumental economic crisis affecting almost every country in the world. The disease is an acronym for Corona Virus Disease of 2019. The virus which is primarily spread amongst people through close contact is associated with symptoms which include fever, cough, shortness of breath, and loss of smell. However, the complications are of greater degree than the symptoms as it could lead to pneumonia, viral sepsis, acute respiratory distress syndrome, kidney failure, etc. (Cortegiani, 2020; Luo *et al*., 2020; Sohrabi, 2020). The virus which had quickly developed into a global health challenge was first confirmed in Nigeria on the 27th February, 2020 (Nigeria Centre for Disease Control (NCDC), 2020).

The Federal Government and particularly, the Lagos State Government, in a bid to cushion the spread and drastic effect of the virus embarked on certain policy measures. Some of which include the closure of all non-essential services (businesses and industries), restrictions on movement and social gatherings, among others (Onyekwena and Ekeruche, 2020). The implementation of these measures led to a lockdown or shutdown of activities which resulted in the closure of workplaces, educational and financial institutions. This further led to a flexible working from home and/or online meetings arrangement (Nicola *et al*., 2020; Food and Agriculture Organization (FAO) and World Health Organization (WHO), 2020). While these measures were necessary to reduce the transmission of the virus, the ripple effects however detrimentally affected different aspects of different individuals' lives – including their social,

physiological and physical wellbeing as well as their levels of physical activity (Cellini *et al*., 2020; Cheval *et al*., 2020; Galea *et al*., 2020; Pfefferbaum and North, 2020).

In addition, the life-changing impacts of the pandemic and policy measures were so sudden that many households had little time to plan for them, thus weakening their welfare status (Iddi *et al*., 2021). Many households who were previously economically secured either became poor or risked becoming poor, while those who were economically unsecured before, further fell down the trap of economic insecurity. This was because many of these households were either out of jobs or earned less because of the pandemic (National Bureau of Statistics (NBS), 2020). Furthermore, the increasing prices of commodities (food and non-food) coupled with the fall in the living standard of most households during this period of crisis led them to be unable to purchase their basic consumption needs (Ojekunle, 2020). This further led to a reduction in the standard of living and welfare of the people, thus adversely affecting the actualization of the Sustainable Development Goals (SDGs) on no poverty, zero hunger, good wellbeing.

In a bid to reduce the shock felt by households, the Federal Government in collaboration with some States' Government introduced some short-term interventions. Some of which include cash transfer programs to the poorest and most vulnerable households, electricity tariff reduction, provision of credit facilities, tax relief, and food provision to vulnerable households (Obiakor *et al.,* 2021). However, despite these interventions, majority of the households did not benefit from them (Adeiza *et al.,* 2021). In addition, considering the efforts of the Lagos State Government at improving the welfare status of the people, indicators still show welfare among households as a serious issue (Nwogu, 2021).

Households, by experiencing these pandemic shocks adopted several strategies in order to improve their welfare. Some of which include reducing the number of meals consumed per day, spending their savings, taking on debt, limiting adults' intake for children to eat, limiting portions at mealtime, relying on help from friends and relative, and sending children to beg (United Nations High Commissioner for Refugees (UNHCR), 2020; Maniriho *et al*., 2022). Though households adopted different coping mechanisms, it was however unknown if the adopted mechanisms were enough to improve or maintain their standard of living during the pandemic (Samuel *et al*, 2020).

Furthermore, different studies on welfare and the COVID-19 pandemic had been on examining the effects of COVID-19 on household food security status and coping strategies adopted during lockdown period in Kano, Nigeria (Mukhtar, 2021), COVID-19 and welfare in Nigeria (World Bank Poverty Team, 2020), food consumption and coping strategies of urban-households in Nigeria during the COVID-19 pandemic lockdown (Iheme *et al*, 2020), the effects of COVID-19 policies on livelihoods (Balana *et al*, 2020), effect of COVID-19 lockdown on households in South East, Nigeria (Ogunji *et al*, 2021). However, many of these studies did not report on the improvement on household welfare and, the influence the coping strategies had on household welfare which is necessary if the policies aimed at fighting poverty and hunger in Lagos State is to be accomplished, most especially during periods of economic crisis.

It is against this background that this study described the socio-economic characteristics of households, identified the coping strategies adopted by households, and determined the influence of different coping strategies on household welfare.

METHODOLOGY

Study area: This study was carried out in Lagos State, Nigeria. The State, which consists of 20 Local Government Areas (LGAs), with 57 Local Council Development Areas (LCDAs), has an estimated population of 15,388,000 (Macrotrends, 2022). It lies in the southwestern geopolitical zone of the country and it is located between the latitude 60 22'N and 60 2'N and longitude 20 42'N and 32 2'E of the equator. It is bounded on the north and east by Ogun State. In the west, it shares boundaries with the Republic of Benin and stretches over 180 kilometers along the Guinea Coast of the Bight of Benin on the Atlantic Ocean. Its southern borders are with the Atlantic Ocean. It covers an area of 358,862 hectares or 3,577 square kilometers (sq. km).

Data collection: A multi-stage sampling technique was used to obtain data for this study. The first stage involved a simple random sampling of four LGAs

from the twenty LGAs in the State. The four LGAs randomly selected were Ikorodu, Surulere, Badagry and Mushin. In the second stage, two (2) LCDAs were randomly selected from each LGA. In the third stage, 50 houses were systematically selected from each LCDA, while the fourth stage involved a random sampling of one household from each house to arrive at a sample size of 400 households. Primary data was collected using a well-structured questionnaire. The questionnaires which were administered between December, 2021 and January, 2022 followed the 30-day recall period approach. The data collected include information on socio-economic characteristics of household head (such as: age of household head, sex of household head, primary occupation of household head), coping strategies adopted, and expenditures on all items (both food and non-food) within the household.

Analytical technique: A two-stage probit regression model was used to determine the influence of coping strategies on household welfare status. This model is necessary as it ensures that variables of interest which can simultaneously determine each other are well-addressed. In such a scenario, the variable of interest can be both continuous and dichotomous. Therefore, this model allows the ability to fit a continuous endogenous variable in the first stage and a dichotomous endogenous variable in the second stage, while also accounting for endogeneity (Keshk, 2003). This model is thus necessary as options for estimating such relationships in other packages proves to be constrained by limitations which is due to a lack of procedures to fit such models. The equations 1 and 2 below presents an implicit two-equation model:

$$y_i^* = \gamma_1 y_2^* + \beta_1' X_1 + \varepsilon_1 \qquad (1)$$

$$y_2^* = \gamma_2 y_1^* + \beta_2' X_2 + \varepsilon_2 \qquad (2)$$

In this study, the first stage (that is, equation (1)) is the determination of the factors that influenced the adoption of the different coping strategies. The dependent variable in this case is continuous, that is, the coping strategy scores. The results of the first stage though, not presented in the results and discussion section of this paper, is available on request. The second stage (that is, equation (2)) determined the influence of coping strategies on household welfare status. Here, the dependent variable is dichotomous and as such is estimated using the probit model. The probit model uses a binary dependent variable, that is, it is a probability model with two categories in the dependent variable. It presents the best approach to find the probability of being non-poor (Gujarati, 2004). It is based on the cumulative normal probability distribution. The model assumes that the outcomes of the dependent variable (which takes the value of zero and one) are mutually exclusive and exhaustive (Aldrich and Nelson, 1984). It is noteworthy that the variable that was introduced to account for endogeneity (that is, total household income) was chosen after two variables – total household income and total expenditure had been correlated with the coping strategy score, which was the dependent variable in the first stage. The dichotomous dependent variable is the welfare status of household (1 if the household is non-poor and 0 if poor), x_i is vector of explanatory variables and ε_i is the error term, which is assumed to have a standard normal distribution. The following explanatory variables were included in the model:

x_1 = age of household head (years);
x_2 = sex of household head (dummy 1= male and 0= female);
x_3 = years of household head education (years);
x_4 = primary occupation of household head (dummy 1= salaried employment and 0= otherwise);
x_5 = marital status of household head (dummy 1= married and 0 = single);
x_6 = household size (number);
x_7 = Rely on less preferred and less expensive foods (dummy 1= yes and 0= no);
x_8 = Borrow cash, or rely on help from a friend or relative (dummy 1= yes and 0= no);
x_9 = Purchase basic essentials on credit (dummy 1= yes and 0= no);
x_{10} = Send household members to eat elsewhere (dummy 1= yes and 0= no);
x_{11} = Send household members to beg (dummy 1= yes and 0= no);
x_{12} = Limit portion size at mealtime (dummy 1= yes and 0= no);
x_{13} = Restrict consumption of adults in order for small children to eat (dummy 1= yes and 0= no);
x_{14} = Feed working members of household at the expense of non-working members (dummy 1= yes and 0= no);
x_{15} = Ration the money you have at hand (dummy 1= yes and 0= no);

x_{16} = Reduce number of meals (dummy 1= yes and 0= no);
x_{17} = Total household monthly income (₦).

RESULTS AND DISCUSSION

Socio-economic characteristics of household heads: The results of the socio-economic characteristics of the household heads are presented on Table 1. It showed that majority (86.8%) of household heads were males with an average age of approximately 47 ± 10 years. This, according to Ojedokun and Yesufu (2021), is a true picture of most African societies, where males head the homes and are the breadwinner of their family. The result also showed that almost all (99.0%) household heads in the study area were literate, who had spent an average of 14 ± 4 years in attaining formal education. Households who are literate have a better chance of improving their welfare. This is because, the years an individual spent in attaining formal education can shapen his/her food and livelihood choices which are essential to improved quality of life. The result further revealed that majority (85.0%) of household heads were married and had an average household size of approximately 5 ± 2 members. This implies that these households will naturally spend more on both food and non-food items, which can negatively affect their welfare, especially during periods of crisis. This corresponds to the results of Stephen and Samuel (2013), and Muche *et al*. (2014) who argued that bigger household size tends to exert more pressure on household consumption. It was also revealed that majority (93.1%) of household heads were either civil servants, artisans, private salary workers or traders. The type of job by household heads can have an impact on their status within the society and consequently, their family's welfare.

Furthermore, the result showed that only few (27.8%) household heads had other occupation asides their main occupation. The implication of this is that, household heads with secondary occupations are expected to have more disposable income thereby increasing their household expenditures. This result is similar to that of Ojedokun and Yesufu (2020) who also reported that some household heads had other occupation asides their primary occupation. Finally, the result showed that the incidence of poverty, which is the share of the households whose *per capita* household expenditure is below the poverty line, was 40.3%. It is the share of the population that cannot afford to buy a basic basket of goods and as such were classified as poor. The remaining 59.7% were classified as non-poor; this is because they had a *per capita* household expenditure that is greater than the poverty line. The disparity witnessed in the division is unexpectedly due on one hand to the effect of idiosyncratic shocks, which prevents some households from purchasing some items and on the other hand, to the fact that some households did not purchase some goods at the time of survey, because those goods are already available to them. Also, the disparity could be due to dynamics in poverty which could be the result of some unobservable factors. This result is quite similar to that of Ojedokun and Yesufu (2021), who also reported that there were more non-poor households than poor households in their study on demand for cowpea varieties in Oyo State, Nigeria.

Coping strategies adopted by households: The results on Table 2 revealed that the coping strategies mostly adopted by household heads during the COVID-19 era are relying on less preferred and less expensive foods (77.3%), limiting portion size at mealtimes (68.5%), reducing the number of meals (60.8%), rationing the money they have at hand (47.3%), and purchasing essentials on credit (43.0%). The result however showed that the least adopted coping strategy by households was sending household members to beg (8.3%). These results correspond to that of Maniriho *et al*. (2022), who observed similar findings in their study on food security and coping strategies in Rwanda. It is however noteworthy that some of these strategies adopted by households have negative consequences. For instance, relying on less preferred and less expensive foods, limiting portion size at mealtimes, and reducing the number of meals consumed would aggravate the rate of malnutrition already observed among households, most especially, in SSA countries. This could further affect the actualization of the SDGs and also in the long-run affect households' welfare. Also, purchasing basic essentials on credit would make these households not only indebted, but they would also in the face of inflation and falling value of money pay relatively higher amounts when paying back their debt.

Influence of coping strategies on household welfare: The result of the two-stage probit regression model as presented on Table 3 revealed that the log-likelihood function was -230.93743, the LR Chi^2

was 77.33 and that the Prob>Chi^2 was 0.0000 indicating that the entire model was significant at the 1% level of significance. These diagnostic variables and the significant level reveal the fitness of the entire model. The result revealed that out of the variables examined, the coefficient of seven variables significantly influenced household welfare. The seven variables are: years of household head education, household size, relying on less preferred and less expensive food, purchasing essentials on credit, sending household members to eat elsewhere, rationing the money households have at hand and total income.

The result on Table 3 revealed that the coefficient of years of household head education was negatively significant. This implies that household heads with more years of education will be less likely to improve their welfare, as compared to those who spent less years in attaining formal education. This implies that spending more years in attaining formal education does not translate to increased welfare and improved standard of living. Though, this is odd, it had however been observed in recent times in the country that the search for white-collar job had reduced the creativity of many individuals, and this had consequently placed many households beneath the poverty line. The search for white-collar jobs had led to increasing rate of unemployment in the country, which according to Torruam and Abur (2014) and Njoku and Ihugba (2011), poses a great challenge on the economy, and consequently reduces the overall welfare of individuals in the country. In addition, according to Afolayan *et al*. (2019), unemployment is known to cause high level of poverty, inequality and low level of living. The result also showed that the coefficient of household size was negatively significant, implying that households with larger members will be less likely to improve their welfare. This is because larger households will naturally require more food than smaller households. Moreover, according to Stephen and Samuel (2013) and Muche *et al*. (2014), households with more members tend to exert more pressure on household consumption.

Furthermore, the result revealed that the coefficient of relying on less preferred and less expensive food was positively significant. This implies that households who switch to less preferred and cheaper food items are more likely to improve their welfare as compared to their counterparts who spend on expensive food items. This is true as it had been noted that when households are faced with price volatility, they tend to switch to cheaper foods, just to maintain their consumption (Ojedokun and Yesufu, 2021). According to Sassi (2021), whilst this strategy is mainly adopted to fill the stomach and reduce hunger sense, it however aggravates a diet that is far from being nutritious. The result further revealed that the coefficient of purchasing basic essentials on credit was negatively significant. This suggests that households who purchase basic essentials on credit in the COVID-19 era will be less likely to improve their welfare as compared to households who pay for the basic things they purchase. This is because these households, who according to NBS (2020), are either out of jobs or receiving half their pay, already have their income reduced. In addition, these households who are already constrained by higher food and non-food prices, and high inflation rate will have to pay up their debts which will not only exert more pressure on their already depleted income but will further push them down the poverty trap. The increased food and non-food prices, according to Shafque *et al*. (2017), deprives and affects individual welfare.

The results further revealed that the coefficient of sending household members to eat elsewhere was negatively significant. This implies that households who send their family members to eat in other places, probably friends' or other extended family members' houses will be less likely to improve their welfare as compared to households who eat from the same pot. This is because consuming food items outside the home does not necessarily give the same satisfaction as the food items which are consumed within the home. Furthermore, the result revealed that the coefficient of rationing the money households have at hand was negatively significant. The implication of this result is that households who rationed the money they have at hand will be less likely to improve their welfare as compared to the households who did not ration the money they have at hand. This is because these households would be unable to purchase what they would have otherwise purchased had they not rationed the money they have at hand. This negative strategy is necessary to prevent overspending and thus saving for the future or for uncertainty which is associated with periods of crisis. Households, according to Dunga and Dunga (2017), adopts this strategy as a planning mechanism for future

uncertainty. Finally, the coefficient of total income was positively significant. The introduction of this variable, that is, the total household income as the instrumental variable was necessary as it was statistically significant. This shows that coping strategies are not only very important but are an integral measure that should be considered in improving the welfare of households.

CONCLUSION AND RECOMMENDATIONS

This study was carried out to understand if the coping strategies adopted by households during the COVID-19 period affected their welfare. The result revealed that households mostly adopted negative coping strategies during the COVID-19 era, and that socio-economic characteristics such as: years of household head education and household size; and coping strategies such as: relying on less preferred and less expensive food, purchasing food on credit, sending household members to eat elsewhere, and reducing the number of meals were significant to influence household welfare. The study concluded that though households adopted several coping strategies to improve their welfare during the COVID-19 pandemic, however the coping strategies adopted mostly do not cause an increase in their welfare. It even made them less likely to achieve increased and improved welfare, and consequently improved quality of life which are the focus of the SDGs. The study therefore recommends that households should be made to understand the need to diversify and be involved in other means of employment asides the white-collar job which is generally being sought after. Also, the study recommends that households should be educated on the dangers of using negative strategies to cope during periods of crisis as using them had been shown not to improve welfare. Finally, the study recommends that vulnerable households should be assisted through different mechanisms such as use of food quota and introduction of several social security measures, most especially during periods of crisis.

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REFERENCES

Adeiza A., Adeniran C., Olalere S., Kenechi A.E., Henry G., Fatoye B., Chibuke E., Fadipe O., Irantiola O., Banaru I., Gbadegesin T., Akinyanmi O., Trevor E., Oye Q. E., Omoakhalen O.,Adekunle A., Aliyu H. B., Obidiagha J. and Okorie C. (2021). Assessment of the impact of COVID-19 lockdown on households in Nigeria. *The Nigerian Economic Summit Group*: 2 – 41.

Afolayan O. T., Okodua H., Matthew O. and Osabohien R. (2019). Reducing unemployment malaise in Nigeria: The role of electricity consumption and human capital development. *International Journal of Energy Economics and Policy*. *International Journal of Energy Economics and Policy*, 9(4): 63 – 73. doi:10.32479/ijeep.7590

Aldrich J. H. and F. D. Nelson (1984). *Linear Probability, Logit, and Probit Models*. Sage Publications, Newbury Park, California, USA

Balana B., Oyeyemi M. A., Ogunniyi A.I., Fasoranti A., Edeh H., Aiki J. and Andam K. 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. International Food Policy Research Institute (IFPRI), Washington, DC. https//doi.org/10.2499/p15738coll2.134179

Cellini N., Canale N., Mioni G. and Costa S. (2020). Changes in sleep pattern, sense of time and digital media use during COVID-19 lockdown in Italy. *Journal of Sleep Research*, 29: 1 – 5. doi.org/10.1111/jsr.13074

Cheval S., Adamescu C. M., Georgiadis T., Herrnegger M., Piticar A. and Legates D. R. (2020). Observed and potential impacts of the COVID-19 Pandemic on the Environment. *International Journal of Environmental Research and Public Health*, 17: 1 – 25. doi:10.3390/ijerph17114140

Cortegiani A. (2020). A systematic review on the efficacy and safety of chloroquine for the treatment of COVID-19. *The Journal of Critical Care*: 30390-30397.

Dunga H. M. and Dunga S. H. (2017). Coping strategies among the food-insecure household in Malawi. *International Journal of Social Sciences and Humanity Studies*, 9(1): 91 – 107

Food and Agriculture Organization of the United Nations (FAO) and World Health Organization (WHO) (2020). COVID-19 and food safety: Guidance for food businesses: Interim guidance [Online]. http://www.fao.org/3/ca8660en/CA8660EN.pdf Accessed on Apr. 17, 2020.

Galea S., Merchant R. M. and Lurie N. (2020). The mental health consequences of COVID-19 and physical distancing: The need for prevention and early intervention. *JAMA Internal Medicine*, 180(6): 817 – 818

Gujarati D. (2004). *Basic Econometrics* (4th Ed.). New York, NY: The McGraw-Hill Company

Iddi S, Obiri-Yeboah D, Aboh IK, Quansah R, Owusu SA, Enyan NIE, Kodom R. V., Nsabimana E., Jansen S., Ekumah B., Boamah S. A., Boateng G. O., Doku D. T. and Armah F. A. (2021). Coping strategies adapted by Ghanaians during the COVID-19 crisis and lockdown: A population-based study. *PLoS ONE*, 16(6): 1 – 21. doi.org/10.1371/journal.pone.0253800

Iheme G. O., Jagun A. O., Egechizuorom I. M., Ogbonna O. C., Edafioghor L. O., Adeleke F. A., Asouzu N. C., Mebude A. S., Enuka H. C., Kupoluyi O. E., Ontekwere C. C., Okwu U. P. and Olah L. E. (2020). Food consumption and coping strategies of urban-households in Nigeria during the COVID-19 pandemic lockdown. *World Nutrition*, 11(3): 35 – 50

Keshk O. M. G. (2003). CDSIMEQ: A program to implement two-stage probit least squares. *The Stata Journal*, 3(2): 157 – 167.

Luo M., Guo L., Jiang W. and Wang H. (2020). The psychological and mental impact of coronavirus disease 2019 (COVID-19) on medical staff and general public – A systematic review and meta-analysis. *Psychiatric Research*, 291: 1 – 9. https://doi.org/10.1016/j.psychres.2020.113190

Macrotrends (2022). Lagos, Nigeria Metro Area Population 1950 – 2022. Available online at: https://www.macrotrends.net/cities/22007/lagos/population#:~:text=The%20current%20metro%20population,a%203.34%25%20increase%20from%202019 (Accessed 4 May, 2022)

Maniriho A., Musabanganji E. and Lebaily P. (2022). Security status and coping strategies among small-scale crop farmers in Volcanic Highlands in Rwanda. *Journal of Central European Agriculture*, 23(1): 165 – 178.

Muche M., Birara E. and Tesfalem K. (2014). Determinants of food security among Southwest Ethiopia rural households. *Food Sci*ence and *Technol*ogy, 2(7): 93 – 100.

Mukhtar M. (2021). Examining the Effects of COVID-19 on Household Food Security Status and Coping Strategies Adopted During Lockdown Period in Kano, Nigeria. *Lapai International Journal of Management and Social Sciences*, 12(2): 1 – 22

National Bureau of Statistics (NBS) (2020). Nigeria's Consumer Price Index (CPI) March 2020 Available online at https://nigerianstat.gov.ng/elibrary (Accessed 22 April 2020)

Nicola M., Alsafi Z., Sohrabi C., Kerwan A., Al-Jabir A., Iosifidis C., Agha M. and Agha R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery*, 78: 185–193.

Nigeria Centre for Disease Control (NCDC) (2020). COVID-19 guidance for safe mass gatherings in Nigeria. www.covid19.ncdc.gov.ng

Nigeria Centre for Disease Control (NCDC) (2020). *First Case of Corona Virus Disease Confirmed in Nigeria*, Nigeria Centre for Disease Control, Abuja. Retrieved from https://ncdc.gov.ng/news/227/first-case-of-corona-virus-diseaseconfirmed-in-nigeria

Njoku A. and Ihugba O. A. (2011). Unemployment and Nigerian Economic Growth (1985-2009). Proceedings of the 2011 Conference on Teaching, Learning and Change: International Association for Teaching and Learning (IATEL). p1-11.

Nwogu P. (2021). A report on poverty rates in Lagos State. Available at: https://twentytendaily.com/a-report-on-poverty-rates-in-lagos-state (Accessed on 29/06/2022)

Obiakor T., Iheonu C. and Ihezie E. (2021). COVID-19 in Nigeria. *Center for the Study of Economies of Africa*: 1– 44

Ogunji J., Iheanacho S., Ogunji C. V., Olaolu M., Oleforuh-Okoleh V., Amaechi N., David E., Ndukauba O., Ikegwu T. M., Biamba C. and Chinonyerem D. (2021). Counting the Cost: The Effect of COVID-19 Lockdown on

Households in South East Nigeria. *Sustainability*, 13, 12417. https://doi.org/10.3390/su132212417

Ojedokun A. O. and Yesufu O. A. (2020). Households' Preference for Some Selected Cowpea Varieties in Oyo State, Nigeria. *Journal on Processing and Energy in Agriculture*, 24(3 – 4): 108 – 114

Ojedokun A. O. and Yesufu O. A. (2021). Demand for cowpea varieties among non-poor and poor households in Oyo State: Implications for food and nutritional security. *Agricultura*, 1–2 (117 – 118): 77 – 93

Ojekunle A. (2020). COVID-19: Nigeria needs to tackle rising food prices and the time is now. Available at: https://www.google.cm/amp/s/www.dataphyte.com/latest-reports/economy/covid-19-nigeria-needs-to-tackle-rising-food-prices-and-the-time-is-now%3famp_markup=1 (Accessed on 03/07/2021)

Onyekwena C. and Ekeruche M. A. (2020). Understanding the impact of the Covid-19 Outbreak on the Nigerian economy. *Brookings*, 8 April 2020. https//www.brookings.edu/blog/Africa-in-ocus/2020/04/08/understanding (Accessed 21, August, 2021)

Pfefferbaum B. and North C. S. (2020). Mental health and the Covid-19 pandemic. *N. Engl. J. Med*., 383: 510 – 512. doi:10.1056/NEJMp2008017

Samuel F. O., Otitoju I. O., and Okekunle A. P. (2020). Household food insecurity, coping strategies and child dietary diversity (24-59 months) in Ibadan, Nigeria. *World Nutrition* 11 **(**1): 129 – 144. https://doi.org/10.26596/wn.2020111129-144

Sassi M. (2021). Coping strategies of food insecure households in conflict areas: The case of South Sudan. *Sustainability*, 13: 1 – 15. https://doi.org/10.3390/su13158615

Shafque A., Muhammad R. Y. and Sofia A. (2017). Impact of rising food prices on consumer welfare in the most populous countries of South Asia. *International Journal of Social Economics*, 44(8):1062 – 1077. https://doi.org/10.1108/IJSE-01-2016-0016

Sohrabi C., Alsafi Z., O'Neill N., Khan M., Kerwa A., Al-Jabir A., Iosifidis C. and Agha R. (2020). World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *International Journal of Surgery*, 76: 71 – 76. https://doi.org/10.1016/j.ijsu.2020.02.034

Stephen F. and Samuel A. (2013). Comparative study of determinants of food security in rural and urban households of Ashanti region, Ghana. *Int*ernational *Journal of Economic* and *Management Sci*ence, 2(10): 29 – 42

Torruam J. T. and Abur C. C. (2014). The relationship between unemployment, inflation and crime: An application of co-integration and causality analysis in Nigeria. *Journal of Economics and Sustainable Development*, 5(4): 131 – 137

United Nations High Commissioner for Refugees (UNHCR) (2020). UNHCR Global Report 2020. www.unhcr.org

World Bank Poverty Team (2020). COVID-19 and welfare in Nigeria: New evidence for policy. World Bank Report, 2020.

Table 1: Socio-economic characteristics of household heads

Socio-economic characteristics	Frequency	Percentage	Mean (Standard Deviation)
Age of household head			
20 – 39	102	25.5	
40 – 59	257	64.3	
60 – 79	40	10.0	**46.64 (10.262)**
80 – 99	1	0.3	
Sex of household head			
Male	347	86.8	
Female	53	13.3	
Education of household head			
No formal education	4	1.0	
Primary education	31	7.8	
Secondary education	119	29.8	
Tertiary education	246	61.5	
Years of household head education			
0	4	1.0	
6 – 10	33	8.3	**14.11 (3.695)**
11 – 15	151	37.8	
16 – 20	206	51.5	
21 – 25	6	1.5	
Marital status of household head			
Single	13	3.3	
Married	340	85.0	
Widowed	24	6.0	
Divorced	8	2.0	
Separated	15	3.8	
Household size			
1 – 6	355	88.8	**4.77 (1.576)**
7 – 12	45	11.3	
Primary occupation of household head			
Civil servant	102	25.5	
Artisan	82	20.5	
Private salary worker	123	30.8	
Trader	65	16.3	
Pensioner/Retired	11	2.8	
Transporter	11	2.8	
Clergy	3	0.8	
Fisherman	3	0.8	
Secondary occupation of household head			
Artisan	22	5.5	
Private salary worker	16	4.0	
Trader	71	17.8	
Businessman	2	0.5	
Status			
Poor	161	40.3	
Non-poor	239	59.7	

Source: Field Survey, 2022

Table 2: Coping strategies adopted by households

Coping Strategy*	Frequency	Percentage
Rely on less preferred and less expensive foods	309	77.3
Borrow cash or rely on help from a friend or relative	102	25.5
Purchase essentials on credit	172	43.0
Send household members to eat elsewhere	48	12.0
Send household members to beg	33	8.3
Limit portion size at mealtime	274	68.5
Restrict consumption of adults for small children to eat	163	40.8
Feed working members of household at the expense of non-working members	84	21.0
Ration the money you have at hand	189	47.3
Reduce number of meals	243	60.8
Skip meals for the whole day	93	23.3

Source: Data Analysis, 2022 **Note:** * signifies multiple response

Table 3: Influence of coping strategies on household welfare

Variable	Coefficient	z	P>|z|
Total coping strategy	0.0034	0.34	0.737
Age of household head	-0.0015	-0.20	0.842
Sex of household head	-0.2267	-0.85	0.398
Years of education of household head	-0.0699***	-2.89	0.004
Primary occupation of household head	0.2769	1.50	0.133
Marital status of household head	0.0383	0.15	0.883
Household size	-0.2573***	-4.90	0.000
Rely on less preferred and less expensive foods	0.5853**	2.42	0.015
Borrow cash or rely on help from a friend or relative	0.2793	1.38	0.169
Purchase basic essentials on credit	-0.2699**	-2.22	0.027
Send household members to eat elsewhere	-0.6490**	-2.06	0.040
Send household members to beg	0.0967	0.25	0.800
Limit portion size at mealtimes	0.2409	0.93	0.353
Restrict consumption of adults for small children to eat	0.2056	0.81	0.416
Feed working members of household at the expense of non-working members	-0.1868	-0.95	0.341
Ration the money you have at hand	-0.3089*	-1.69	0.091
Reduce number of meals	-0.3755	-1.38	0.168
Total monthly income	3.57e-06***	3.81	0.000
Constant	1.7344	2.74	0.006
LR Chi-Square (18)	77.33		
Prob > Chi-square	0.0000		
Pseudo R-square	0.1434		
Log likelihood	-230.93743		

Source: Data Analysis, 2022