Extended Abstract
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Paper/Poster Title	Does government or private support matter during crises? Panel data evidence from household responses during the COVID-19 lockdown restrictions.

Abstract prepared for presentation at the 98th Annual Conference of The Agricultural Economics Society will be held at The University of Edinburgh, UK, 18th - 20th March 2024.

Abstract	200 words max

Social protection policies are critical public policy measures to reduce livelihood vulnerability and enhance resilience amidst shocks. In this study, we used the National Longitudinal Phone Survey (NLPS) on COVID-19, to assess the heterogeneous impact of different sources of support on households' response to lockdown restrictions in Nigeria. We employed a Correlated random effect (CRE) model with cluster-robust standard errors to examine the impacts of government support, remittance and private rental income on the probability of stopping work and adhering to government-stipulated lockdown restrictions across different employment categories - agricultural, informal and formal employment sectors. We find mixed results. Chiefly, government support and private rental income are positively associated with the probability of stopping work in the agricultural sector. However, the effect is negative if working in the informal and formal sectors. Contrariwise, remittance appears not to be associated with the responses of households in informal and formal employment. But, in the agricultural sector, household members are less likely to stop working despite accessing remittances. We also found heterogeneous effects depending on whether households are in rural or urban areas. Our findings have important implications for social protection policies that target building resilience amidst shocks and risks to household livelihoods.

Keywords	Government support; Remittance; Private Income; Households; COVID-19; Nigeria
JEL Code	J180; J68; O170; Q12 see: www.aeaweb.org/jel/guide/jel.php?class=Q)

Introduction	100 – 250 words

Globally, the COVID-19 pandemic brought unprecedented changes in households' livelihoods. For example, early analyses of the effects of the pandemic in Nigeria showed that it had a negative impact at the macro- and micro-levels. Nationally, it negatively affected total GDP, and at the micro level, it reduced household incomes, labour market participation and remittance inflows while exacerbating household poverty (Munonye et al., 2022; Amare et al., 2021). With the stringent lockdown

measures imposed by several governments globally, including Nigeria, household livelihood resilience was tested. People had to adapt to new ways of sustaining livelihoods with disruptions in business activities, including but not limited to temporary and permanent closures (Liverpool-Tasie *et al.,* 2022). In addition, anecdotal evidence suggests that the disruptions occasioned by the lockdown measures had an uneven impact on labour market participation and business activities depending on location and business type. At the same time, households' responses to government measures were asynchronously influenced mainly by people's attitudes driven by the need to sustain their livelihoods (Bentkowska, 2021; Gottlieb *et al.,* 2020). Evidence suggests that among small businesses, particularly in the informal sectors, households had to find ways to pivot and stay afloat to meet consumer demands and sustain a living despite government lockdown measures (Liverpool-Tasie *et al.,* 2022; Itanyi and Obuka, 2022). Therefore, in this study, we used the Nigeria National Longitudinal Phone Survey (NLPS) on COVID-19, to assess the heterogeneous impact of different sources of support on households' responses to the lockdown measures imposed during the COVID-19 pandemic.

Methodology	*100 – 250 words*

Our data is from the Nigeria National Longitudinal Phone Survey (NLPS) on COVID-19 collected by the Living Standards Measurement Study (LSMS) team in Nigeria (NBS/WB, 2020). The NLPS is a high-frequency phone survey of households. Some of the information collected during the monthly phone survey, among others, included lockdown-related information, such as household members who stopped working due to the COVID-19 pandemic across different employment sectors. The sources of assistance available to households during the pandemic included support from government (Assistance), remittances (Remittance) and private income from rent (Rent). Our outcome variables measured as binary variables reflect whether or not households stopped working across different employment sectors due to the COVID-19 lockdown measures. Our dependent variable equal to one indicates a positive outcome, whereas zero indicates a negative outcome following the equation below:

$$Y_{it} = A_{it}\delta + X_{it}\beta + \bar{X}_i\gamma + d_t + c_{i1} + \mu_{it}$$

Y_{it} represents the various outcomes of interest. Our covariate of interest is A_{it}; its parameter estimate δ shows the relationship between the type of assistance provided to households and the probability of the various outcomes. d_t is time dummies for time fixed-effects, and c_{i1} is time-invariant unobservables, while X_{it} is a vector of household-level and geo-political location control variables and $\bar{X}_i$ are time averages of all time-varying covariates. μ_{it} is the stochastic error term. Following Lin and Wooldridge (2019) and Wooldridge (2019), we employed a Correlated Random Effect

(CRE) model with cluster-robust standard errors for binary outcomes with panels nested at the household level.

Results	*100 – 250 words*

We estimated the marginal effects of the CRE models for the three main predictors of interest - government assistance, remittance and private income from rent across the three different employment sectors. We find mixed results. Results showed that receiving government assistance increases the likelihood that households working in the agricultural sector will stop work by 10% and are 3% less likely if working in the informal sector. However, this had no significant (though positive) effect among households working in the formal sector. In contrast, remittance was negatively associated with the probability of stopping work in the agricultural sector but did not significantly influence the chance that households would stop working in both the informal and formal sectors (though positive). Finally, and similar to government support, receiving private rental income increases the likelihood of stopping work for households working in the agricultural sector by 22%. If working in the informal and formal sectors, they are 6% and 7%, respectively less likely to stop work. We also found heterogeneous effect of the support sources depending on location (rural or urban). Generally, public support sources appear to have a positive effect if households are living in rural areas compared to those living in urban areas.

Discussion and Conclusion	*100 – 250 words*

In this study, we are interested in examining the impact of the support sources during the COVID-19 lockdown restrictions on households' responses to the lockdown measures measured by the probability of stopping work despite the lockdown restrictions. In particular, our interest lies in the role that government support, remittances and private rental income play in mediating whether or not households adhere to government-stipulated lockdown measures. We estimated the marginal effects of the CRE models for the three main predictors of interest - government assistance, remittance and private rental income across three different employment sectors. We find mixed results but provide evidence that generally affirms the vital role of government support amidst exogenous shocks to household livelihood. Although, we note that this depends on geographical location as well as the specific sector of employment. Our results of the role of available support sources across the different employment sectors and locations, though mixed, provide some indications that measures that are available (or not) to households to mitigate livelihood vulnerability amidst exogenous risks and shocks can hinder or foster the speed of progress towards achieving a global public good where individual actions can have either positive or negative externalities. To be effective, social protection measures during crisis times must recognise the inherently heterogeneous influence of government support and the role that non-government support sources play in enhancing resilience against the shocks and risks that deepen household livelihood vulnerability. Recognising this complexity will support targeted measures that achieve optimal social protection policy outcomes.

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