EFFECTS OF INCOME SHOCK ON HEALTH STATUS OF URBAN FARM HOUSEHOLDS IN ILARO, OGUN STATE, NIGERIA.

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Abstract
The study examined how income shocks affected urban farm households' health in Ilaro, Ogun State. The 120 respondents that were selected through a multistage sampling process provided primary data through the use of a structured questionnaire. A logit regression model and descriptive statistics were used to analyze the data. The socioeconomic characteristics of the respondents, their varied sources of income, the pattern and severity of their income shocks, and the health of urban farm households were all described using descriptive statistics. The pattern of income diversification was evaluated using the Herfihdahl index, and the effects of income shock on the health status of urban farm households in the study area were determined using a logit regression model. The results showed that, at 48.33%, most respondents were between the ages of 41 and 50, while 29.17% of urban farm households included adults over 50. 56.67% of urban farm households were moderately diversified (relying on two income streams), 19.17% were highly varied (relying on more than two income sources), and 24.17% were not diversified (relying on artisanship as their only source of income). Based on the average income diversification which is 1.89, most urban farm households in the study area had two or more sources of income. It was discovered that 21.67% of urban farm households experience low levels of income shock, 45.83% experience moderate levels of income shock, and 32.50% experience high levels of income shock. 65% indicated a poor self-reported health status, with 47.50% having high blood pressure. The results of the Logit regression on the effects of income shock on the health status of urban households revealed that income shocks have a substantial positive association with the health status of the household head. This suggests that the greater the income shock suffered by urban farm households, the greater the chance of poor health.
Keywords: Income shock, Health status, urban farm household.

Introduction

Income shocks can have a major influence on the health of households, particularly in urban regions where the cost of living is high. Income shocks are any unexpected changes in income, such as a sudden job loss, wage reduction, the death of a sponsor, or unforeseen expenses. These shocks can cause financial stress, restricted access to healthcare, and lifestyle changes that have a severe influence on health. The health repercussions of income shocks are especially concerning in metropolitan regions, where households frequently confront higher living expenditures, less social support networks, and increased exposure to environmental health concerns. Income shock is an issue that has been occurring for long in Nigeria especially in the last few years when the nation was faced with challenges of economic meltdown and Covid-19, the whole society are affected in one way or the other. Just like everyone, many urban farm households in Ilaro face the risk of experiencing sudden income shocks, such as job loss, reduced wages, or unexpected financial burdens. These income shocks can have profound implications for the overall well of households, particularly in terms of their health status. It is imperative for policymakers and healthcare providers to comprehend the distinct impacts of income shocks on the well-being of urban households in Ilaro in order to devise suitable interventions and support mechanisms.

The impact of income shocks on the health of Nigerian urban households has been the subject of many studies. The effects of income shocks on the health status of urban farm households in Ilaro, Ogun State have been heightened by the current economic problems in Nigeria, which include high rates of unemployment, inflation, Naira redesign, poverty and removal of fuel subsidy. Individuals' health endowments may be impacted by recessions in a variety of ways. As the primary route, it has an impact on household wealth and incomes. Lower incomes may translate into less nutritional access or health-care affordability. According to a study undertaken by the National Bureau of Economic Research, income shock, or unexpected income losses, is related with a higher chance of depression, anxiety, and other mental health disorders. (Doherty et al., 2019). A study by Fagbamigbe et al. (2019) looked at how income shocks affected urban households' self-rated health. The study found that households experiencing income shocks had a higher likelihood of reporting poor health and that there was a relationship between income shocks and low self-rated health. In a different study, Olagoke et al. (2017) examined how income shocks affected the use of health services by urban Nigerian

households. According to the study, households were less able to access healthcare services as a result of income shocks, which led to hospitalizations and delayed or skipped medical consultations.

The causes and long-term effects of income shocks on household healthcare use were evaluated by Komolafe and Oluseyeibukun (2015). When comparing those who experienced any kind of income shock to those who did not, the binary logistic regression revealed significantly lower odds of healthcare use (using the healthcare facility used, amount spent, and number of visits). The findings indicated that while age of the household head, health insurance, education, and total household income are some of the main factors that have a long-term impact on a household's use of healthcare in the study area, income shocks have a decreasing effect on healthcare use. On the other hand, Afeju (2017) used data from the Nigerian Household Panel Survey for the years 2010–2011 and 2012–2013 to investigate the impact of income shocks on household real consumption expenditure. The findings imply that idiosyncratic shocks have an impact on household consumption expenditures and that informal insurance strategies are only partially effective in giving households the necessary insurance when shocks occur.

Abdulaleem, Fakayode, and Adio (2023) looked into how civil servants perceived their health and consumption to be affected by income shocks, as well as the coping mechanisms they used to lessen the impact. The study's conclusions showed that the perceived effects of income shock on the civil servants in the research area included declining health, less food, an inability to cover medical expenses, frequent illness, depression, malnourishment, and the death of family members. Income shocks can have a major effect on one's health. Income shocks have been linked to higher levels of stress, anxiety, and depression, according to research (Burgard et al., 2012; Kim, 2015). These conditions can result in a number of health issues, such as obesity, diabetes, and cardiovascular disease.

Therefore, income shocks can influence health behaviors in addition to having an effect on the physical and mental health of urban households. When creating programs to assist households in times of economic instability, policymakers should take these effects into account. Policymakers and healthcare professionals need to understand how income shocks affect health outcomes because, by figuring out the underlying mechanisms that connect income shocks to health outcomes, targeted interventions can be created to lessen their negative effects and enhance households' general health.

Methodology

Study Area

Ilaro town is located in Ogun State. There are about 57,850 people residing in Ilaro. The Yewa South Local Government, now known as YEWALAND, has its headquarters in Ilaro. It formerly served as the Egbado division of the Western State before merging with Ogun State in Nigeria. The distance between Ilaro town and the capitals of Ogun State, Abeokuta and Ikeja, respectively, is roughly 50 and 100 kilometers, respectively. It is located at longitude 30 01' 20" and latitude 60 53' 24". Colonial urbanization, the Federal Polytechnic's founding, and the Dangote cement factory in Ibese have all had an impact on Ilaro's development. The town has expanded quickly in both size and population. Between 1990 and 2018, the area of developed land increased by 20 km2. (Adewara et al., 2019).

Sampling procedure and sample size

The target population for this study was urban farm household in Ilaro, Ogun State. The study used a multistage sampling technique to choose the respondents. Using simple random sampling, three wards in Ilaro town were chosen in the first stage, Four (4) communities were chosen at random from each ward in the second stage giving a total of twelve (12) communities and in the final stage, 10 households were selected at random from each of the communities that were chosen. A total of 120 respondents were sampled for the study.

Types of Data and Data Collection

Primary data was used in the study. A structured questionnaire was given to the heads of urban farm households in the study area in order to gather the primary data. The questionnaire gathered data on respondents' socioeconomic characteristics, income sources, income diversification, self-reported health status etc.

Method of Analysis

Both descriptive and inferential statistics were used to analyze the study's data. The socioeconomic characteristics of the respondents, various income sources, pattern and level of income shocks, and health status of urban farm households were all described using descriptive statistics.

The pattern of income diversification was evaluated using the Herfindahl Index. The Herfindahl Index calculates the squared proportion of income from each source for each urban household and measures the concentration of income sources within a household. .

$$H.I = \Sigma P_i^2 \quad (1)$$

Where;

H.I= Herfindahl Index

Pi= the share of each income activity in total household income

ΣP_i^2= sum of the squared proportions of income from each source for each household.

Income shock was assessed using predicted average montly change in income which is the discrepancy between the expected montly income and and current montly income in Naira (₦)/Month

The effects of income shock on urban farm households' health status were assessed using the logit regression model. Income shock was the main independent variable of interest, while the dependent variable was the health status of urban farm households. The model can be expressed as:

Logit $P(y)= \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 +...+ \beta_6X_6 + \varepsilon$ (2)

Where; P(y)= Probability of respondents being obese/overweight is 1 and 0 otherwise.

β_0= Intercept

β_1-β_6= Regression coefficient

X_1= Age of household head (years)

X_2= Sex of household head

X_3= Education (years)

X_4= Marital status

X_5=Household size

X_6= Income diversification (index)

X_7=Income shock

X_8=Access to extension

X_9=Current smoker

X_{10}=Membership to community-based organizations

X_{11}=Access to credits

X_{12}=Access to health centers

X_{13}=Access to road networks

ε= Error term

Results and Discussion

Description of the socioeconomic characteristics of urban farm households

Table 1 highlights the age distribution of the respondents. From the result, 20.00 percent had an age above 50, while the modal age group was 41 to 50 years old, with a frequency of 48.33 percent. This demonstrates that the majority of farm households were in their prime economic years and could thus actively participate in diversifying their sources of income. In addition, 45.00 percent of the households had completed primary school, 20.00 percent had completed secondary school, 8.33 percent had completed tertiary education, and 26.67 percent had no formal education. It is evident from the table below that farm households in the study area had comparatively low literacy rates.

Furthermore, in order to make ends meet, farm households engaged in a variety of income-generating activities, both on and off the farm. Urban farm households' non-farm livelihood activities have a significant impact on how much they participate in farming. The result revealed that the main occupations of 19.17 percent of the households were farming, 34.17 percent were artisanship, 18.33 percent were trading, 20.00 percent were employed for a salary job, while 8.33 percent had other activities as their primary occupation.

Table 1: socioeconomic characteristics of urban farm households

Variable	Frequency	(%)
Age group(years)		
30andless	4	3.33
31–40	23	19.17
41–50	58	48.33
51–60	30	25.00
Above60	5	4.17
Gender		
Male	87	72.50
Female	33	27.50
Education		
No formal	32	26.67
Primary	54	45.00
Secondary	24	20.00
Tertiary	10	8.33
Marital Status		
Single	17	14.17
Married	81	65.17
Widowed	22	18.33
Household size		
3–4	18	15.00
5–6	68	56.67
Above7	34	28.33
Primary occupation		
Farming	23	19.17
Artisanship	41	34.17
Trading	22	18.33
Paid employment	24	20.00
Others	10	8.33
Religion		
Christian	53	44.17
Muslim	66	55.00
Others	1	0.83

Source: Field Survey, 2023

Pattern of Income Diversification

Table 2 lists the different revenue-generating activities that contribute to the income portfolios of urban farm households. The results of this study indicate that urban farm households manage several sources of income. Most urban farm households diversify in ways that are both farm and non-farm related. The percentage of a household's total income that came from non-farm sources (such as trading, artisanship, salary work, asset income, and other sources) was 68.33%, while farm

income accounted for 31.17%. This suggests that the majority of farm households in the research area are more involved in non-farm pursuits than in agricultural ones. Artisanship accounted for 35.83% of the non-farm income diversification, trading accounted for 25.83%, salary jobs and paid employment accounted for 18.33%, and asset income accounted for 10% of the total farm household income.

Table 2: Income sources to urban farm households income (N/month)

Sources	Frequency	Percentage	Mean	Income share (%)
Farming	41	31.17	112,932.94	19.45
Artisanship	43	35.83	201,387.37	34.68
Trading/Marketing	31	25.83	134,834.83	23.22
Salary jobs/Paid employment	22	18.83	42,849.46	7.38
Asset income	12	10.00	88,726.64	15.28
Total		**100.00**	**580,731.24**	**100**

Source: Field Survey, 2023.

Extent of income Diversification

The distribution of urban farm households by extent of income diversification is shown in Table 3. Urban farm households were found to be 24.17 percent not diversified (relying on artisanship as their only source of income), 56.67 percent moderately diversified (depending on two income sources), and 19.17 percent highly diversified (having more than two income sources). Given that the study area's urban farm households have an average income diversification of 1.89, the majority likely have two or more sources of income.

Table 3: Distribution of urban farm household by extent of income diversification

Extent	Frequency	Percentage
Not diversified(HI=1)	29	24.17
Moderately diversified(1.0<HI<2.0)	68	56.67
Highly diversified(HI>=2.0)	23	19.17
Total	120	100
Mean 1.89		

Source: Field survey, 2023.

Pattern of Income shocks experienced by the urban farm households

This study captured only the monetary shocks. Table 4 shows that pattern of income shocks experienced by urban farm household from the various income sources. It was found that artisanship accounted for the highest (43.30 percent) income shock, this is followed by trading/marketing (26.02 percent). However, asset income accounted for 15.67 percent of the income shock share, farming accounted for 10.57 percent while salary jobs/paid employment accounted for the lowest income shock share of 4.45 percent. The result showed that salary job/paid employment are important activities which help sustain the urban farm households in the research area. This result indicates that the major income shock experienced by urban farm households in the last production season is the shocks from artisanship.

Table 4: Pattern of Income shocks experienced by the urban farm households

Source	Expected Income	Current Income	Income Shock	% Shock
Farming	134,276.08	112,932.94	21,343.14	10.57
Artisanship	288,836.68	201,387.37	87,449.31	43.30
Trading/marketing	187,376.46	134,834.83	52,541.63	26.02
Salary Jobs/paid employment	51,833.73	42,849.46	8,984.27	4.45
Asset Income	120,365.12	88,726.64	31,638.48	15.67
Total	**782,688.07**	**580,731.24**	**201,956.83**	**100**

Source: Field Survey, 2023 * implies multiple response

Health measures of urban farm households

The descriptive results of the health measures of urban farm households are presented in Table 5. This study presents strong evidence that the lockdown, the removal of fuel subsidies, and the scarcity of currency are the primary causes of the observed changes in health due to

income losses. A self-rated health variable was used in this study to measure each individual's health. The respondents were asked to score their current health as follows: 0 for "poor," 1 for "good." This study evaluated the health indicators of urban farming households, taking into account both objective (high blood pressure, cardiovascular diseases, or respiratory diseases) and subjective (self-assessed health, long-standing illness) factors. In this study, a binary variable is constructed, with a value of one if the respondent is currently taking blood pressure medication or if the measured blood pressure is above 140/90 mmHg (i.e., if the systolic pressure is above 140, the diastolic pressure is above 90, or both). It was discovered that 65.00 percent of people self-reported having poor health, and 47.50 percent of people had high blood pressure. Risk equations are used in the assessment of cardiovascular disease risk, giving a patient's probability of experiencing a cardiovascular disease event (such as a heart attack or stroke) within a specified time frame. It was discovered that incidents of heart attacks or strokes had occurred in 28.33 percent of urban farm households.

Estimate of the prevalence of mental disorders in low- and middle-income settings affected by conflict, with a focus on depression, anxiety disorders, PTSD, bipolar disorders, and schizophrenia in settings where there have been income shocks within the past year. According to this study, 26.67 percent of respondents have severe mental health disorders, which include severe anxiety, severe post-traumatic stress disorder, severe depression, bipolar disorder, and schizophrenia. Of the remaining respondents, 40.00 percent have moderate mental health disorders, which include moderate anxiety, moderate post-traumatic stress disorder, and moderate depression; 18.33 percent have mild mental health disorders, which include mild depression, mild anxiety, and mild post-traumatic stress disorder; and 15.00 percent have disorder without functional impairment or mental health disorder within the last year.

Table 5: Health measures of urban farm households

Health indicators	Frequency	Percentage
Self-reported good health	36	30.00
Self-reported poor health	78	65.00
High blood pressure	57	47.50
Cardiovascular condition	34	28.33
Respiratory condition	26	21.67
BMI values (obesity is classified as BMI 30 units or higher)	36	30.00
Mental health condition	112	93.33
Severe disorder (severe anxiety, severe post-traumatic stress disorder, severe depression, schizophrenia, and bipolar disorder)	32	26.67
Moderate disorder (moderate anxiety, moderate post-traumatic stress disorder, and moderate depression)	48	40.00
Mild disorder (mild anxiety, mild post-traumatic stress disorder, and mild depression)	22	18.33
Disorder without functional impairment	18	15.00

Source: Field Survey, 2023 * implies multiple response

Effects of income shock on health poverty status of the urban farm households.

Table 6 shows the results of the logit regression analysis determining how income shock affects urban households' health. It was found that eleven (11) of the thirteen (13) were significant at various level. These were age, sex, education, household size, income diversification, income shocks, and current smokers, Membership to community-based organizations, access to credit, health centers, and road network.

The household head's state of health is positively correlated with income shocks. This suggests that the likelihood of urban farm households experiencing poor health increases with the amount of income shock they experience.

Table 6. Logit regression results of the effects of income shock on health status of the urban farm households.

Explanatory variables	Coefficient	Standard error	Z	P >/Z/
Age of the household head	0.354***	0.124	2.855	0.001
Sex of the household head	0.224*	0.137	1.912	0.703
Education of the household head	-0.563***	0.202	-2.787	0.003
Marital status	0.023	0.019	1.211	1.302
Household size	0.331***	0.122	2.713	0.002
Income diversification	-0.465***	0.112	-4.152	0.001
Income shocks	0.163**	0.069	2.362	0.038
Access to extension	0.119	0.193	0.616	0.263
Current smoker	2.623**	1.122	2.338	0.018
Membership to community-based organizations	-3.842***	1.224	-3.139	0.004
Access to credit	0.354***	0.111	3.189	0.000
Access to health centers	-0.542**	0.216	-2.509	0.021
Access to road network	-1.345***	0.403	-3.337	0.010
Constant	2.254**	1.003	2.247	0.036
Number of observations = 120 LR *Chi*2 (19) = 473.92 Prob>*Chi*2 = 0.007 Pseudo R2 = 0.7845 Log likelihood = -811.067				

***,**,* implies significant at 1%, 5%, 10% respectively.

Conclusion and Recommendation

Income shocks play significant role in the health status of the urban farm households, any decrease in income is probably going to have an impact on the wellbeing of the household as well as economic activity and consumption. The populace has experienced income shocks more frequently than ever before, and the lack of appropriate coping strategies has made households more susceptible to poverty, ill health, and reduced food intake.

It was found that artisanship accounted for the highest income shock while salary jobs/paid employment accounted for the lowest income shock. The study revealed that the highest source of income shock experienced by the urban farm households was from unforeseen disaster/conflicts/civil unrest followed by spikes in commodity/Naira design policy, loss of jobs/slash in salary, shortfall in production output price and death/illness of primary income earner.

Furthermore, it was shown that the urban farm household experience high level of income shock. Their self-reported health was also found to be poor; many of them reported having high blood pressure and mental health conditions like insomnia, depression, anxiety, and post-traumatic stress disorder, among others. It is concluded that the level of income shocks experienced by urban farm households is high, and income shock is a crucial factor influencing the health poverty status of urban farm households.

Therefore, In order to improve the health status of urban farm households in the study area, it is recommended that policy initiatives should concentrate more on ways to lessen the income shocks brought on by different income portfolios. Additionally, there is a high prevalence of mental disorders among urban farm household populations; therefore, scalable mental health interventions are urgently needed to address this burden given the large number of individuals in need and the humanitarian imperative to reduce suffering.

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