Original Research

# Effects of Exposure to Risks on Household Vulnerability in Developing Countries: A New Evidence From Urban and Rural Areas of Nigeria

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## Abstract

Exposure to risk may be seen as one of the many dimensions of poverty. Household exposure to risk consequent upon different types of shocks often leads to undesirable welfare outcomes. A shock can push an already income-poor household further into poverty or drive a non-poor household below the income poverty line. Risk appears to be one of the major challenges many households face in developing economies especially in the Sub-Saharan Africa. As a result, these issues have become central in the policy agenda not only in these countries but also in the international multilateral institutions. This study examines the exposure to risks in urban and rural areas and its effect on household vulnerability to poverty in Nigeria. The study applied the framework that computes vulnerability as expected poverty on the Nigeria General Household Survey for 2015 and the cross-sectional data and three-stage feasible generalized least squares analysis were employed. Findings show that exposure to risks such as job loss, business failure, harvest failure, livestock death, dwelling demolition, increase and decrease in input and output prices, and other similar risks significantly drive households into poverty but differ across households in rural and urban areas, both in characteristics and regions. These findings suggest that social safety nets should be designed to take care of not only the current poor households but also the non-poor households who are likely to be vulnerable in the future.



### Keywords

risk, vulnerability, covariate shock, idiosyncratic shock, poverty


## Introduction

Exposure to risk may be viewed as one of the numerous components of poverty. Household exposure to risk consequent upon different types of shocks often leads to undesirable welfare outcomes (Hoogeveen et al., 2004). Shocks can push an income-poor family unit more into poverty or force a non-poor family beneath the income poverty line (Koomson et al., 2020). Risk is part of the several obstacles many households encounter in developing countries particularly in the Sub-Saharan Africa. Thus, these issues have turned out to be central in the policy agenda in these nations as well as in the international multilateral institutions.

Dercon (2005) showed that the most common cause of risk in the third world is related to the rainfall and climate pattern, which results in drought and flood, and these are mostly faced by rural agricultural households. Satterthwaite et al. (2007) posited that the level of damage to urban populations and economies caused by severe weather events in some years highlights their vulnerabilities. They argued that urban areas often suffer from risk of flooding when rainfall occurs. This, according to them, is because buildings, roads, infrastructure, and other paved areas impede rainfall from penetrating into the soil and consequently produce more run-off. In most cases, heavy and prolonged rainfall can easily overcome drainage systems and destroy homes leaving thousands of households homeless and vulnerable. This is not restricted to developing countries alone. The devastation of New Orleans by Hurricane Katrina in 2005 is one example of how vulnerable households could be when they are exposed

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to certain types of covariate shocks in high-, middle-, and low-income countries.

Evidence has pointed to the geological and topography disasters and their threat to rural areas. Xu et al. (2017) has shown that sudden occurrence of geological and topographical disasters are capable of depleting the wealth of farming household that may have been accumulated over decades. Although exposure to risk and vulnerability may not depend on the effect of climate change alone but because the poor have not many resources and receives less assistance from family, community, financial system, and even social safety nets to avert, mitigate certain eventualities, they may be prone to many risks. This can make them get trapped in poverty over time (Huq et al., 2007; UN-HABITAT—United Nations Human Settlements Program, 2011; World Bank Group, 2016).

Nigeria is part of the third world, and households in the country face different types of exposure to shocks and risks. Mba (2016) identified most common types of shocks faced by the households as illness or death of income earner, theft, business failure, dwelling demolition, fire or flood destroying farmlands, long period of unemployment, and rise in price of inputs and food stuffs. Others include property loss and kidnapping of household member. One interesting thing about the country's case is that these shocks are also common in the urban areas such that it is hard to distinguish the distribution of risk exposure in both rural and urban areas and how it affects households' vulnerability. According to Olorunfemi (2011), between 1983 and 2009, flooding affected over 3 million people in selected urban areas in Nigeria. He argues that climate change is probably the major cause in many of this. But even if it was not, it is an indication of the extent of vulnerability of urban populations to floods whose frequent occurrence, intensity, and climate change effect are likely to multiply in some places.

Since the 1980s, Nigeria's macroeconomic and social indicators have not been very impressive. The United Nations Development Programme's (UNDP) Human Development Index (HDI) of 0.462 positions the nation 142 out of 169 nations in 2010. With assessed Gross National Income (GNI) per capita of US\$2,156, life expectancy at birth was estimated at 48.4 years, and Multidimensional Poverty Index (MPI) was 0.368 (UNDP, 2010). Since 2010, only little progress has been made in terms of HDI which increased to 0.467 in 2011 and further to 0.471 in 2012. The percentage of the population vulnerable to multiple deprivations is estimated at 17.8%, with about 54.1% of the population beneath poverty line in 2004 of which 36.6% of the adult population are living in extreme poverty (UNDP, 2013). In 2010, the Headcount Index was estimated at 69% showing an increase in the number of the poor compared with the 2004 estimate, while the 2014 and 2015 HDI value of 0.514 placed the country 152 out of 188 countries. The recent increase in the number of displaced persons across the country due to rising insurgency in the North East geopolitical zones, the resurgence of militancy in the Niger Delta region, and pockets of border disputes in some other parts of the country may have significantly increased households' vulnerability to poverty. Adepoju and Yusuf (2012) argue that poverty remains an overwhelming challenge as about 67% or two thirds of the rural population were poor by 2006 Core Welfare Indicators Survey report. It could be the case that the rate of households' risk and vulnerability in Nigeria is so high that several poverty alleviation efforts such as the National Economic Empowerment Development Strategies (NEEDS), Sustainable Development Goal (SDG), 7-Point Agenda, Vision 20:2020, and upward reviews of salaries and pensions embarked upon by the governments at all levels did not make reasonable impacts as risk mitigation mechanisms. If these poverty alleviation measures were properly targeted, their failure to reduce poverty incidence is a clear indication that the issue of risk and vulnerability should be adequately studied to come up with sound policy recommendations. According to Alayande and Alayande (2004), it is not evident whether the nation needs adequate ability to alleviate the social dangers looked by families or whether the nation has not given adequate consideration to the issues of risk and vulnerability that are imperative for comprehension of the elements that regularly lead households to never-ending poverty.

Previous research efforts in the area of poverty and income distribution in Nigeria, among others include Alayande and Alayande (2004); Oni and Yusuf (2008); Oyekale and Oyekale (2010); and Adepoju and Yusuf (2012). However, these studies failed to address how household exposure to covariate (correlated among individuals) and idiosyncratic (affect individuals in an unrelated manner) shocks in urban and rural areas affect their vulnerability to poverty. The study adds to the existing literature by exploring how various types of risk factors such as price increase in food items/input, price decrease in output/kidnapping/robbery/hijacking, harvest failure due to poor rain/flooding/pest/fire, dwelling demolished, theft crops/livestock, job loss, property loss, livestock death, death adult working/remittance sender, business failure, loss of important contact, and illness of income earner (which were not captured in earlier surveys) affect household vulnerability to poverty in urban and rural areas.

## Literature Review

Households often experience changes in their income and consumption as a consequence of shocks resulting from risk. Bird et al. (2002) emphasize that vulnerability to risk is indistinguishable from the concept of vulnerability to shock and viewed vulnerability as a source of poverty and risk appear to be a forerunner to vulnerability. They pointed to the linear depiction of exposure to risk and vulnerability, that