



Resilience to Climate Shocks among Rural Households in Nigeria.
Oyebisi Olatunji Olajide, Adeola O. Olajide, and Bolarin T. Omonona
Corresponding email: bislaj05@gmail.com

***Department of Agricultural Economics, University of Ibadan, Ibadan, Nigeria**

Introduction

- Climate change and variability constitutes a serious global environmental issue (Nalwanga *et.al* 2022; Vincent and Cull, 2014). The occurrence of climate shocks and extreme climatic events such as floods, droughts, strong winds, heat waves are widespread.
- Households and individuals have assets, which are used to generate income in various forms that in turn provide access to dimensions of welfare such as consumption, nutrition, health, etc., while facing risks throughout this sequence (Odozi *et.al* 2022).
- Moreover, climate resilience implies having a good living conditions (welfare) to withstand hazards or ability to cope with, absorb and bounce back from shocks such as climate change effects.
- This study provides more insights on how resilient are rural households to climate shocks, and various factors that influence the resilience to climate shocks in rural Nigeria.

Methodology

Scope of study- The six geopolitical zones of Rural Nigeria

Data Source :

General Household Survey Panel Data (GHS-P) from the Living Standard Measurement Survey-Integrated Survey of Agriculture (LSMS-ISA); 2010-2011 and 2018-2019

Sampling Techniques :

Two-stage sampling method (NBS 2019)

Sample Size: 2800

Methods of Data Analysis

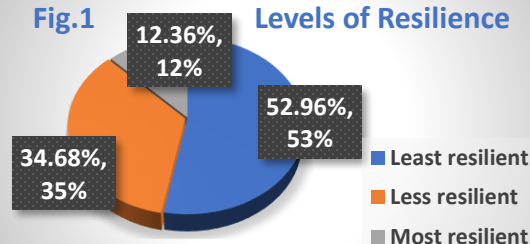
- Descriptive statistics
- Multiple Indicators Multiple Causes model (MIMIC)
- Ordered probit model

Descriptive Statistics

Table 1: Socioeconomic Characteristics and Resilience index

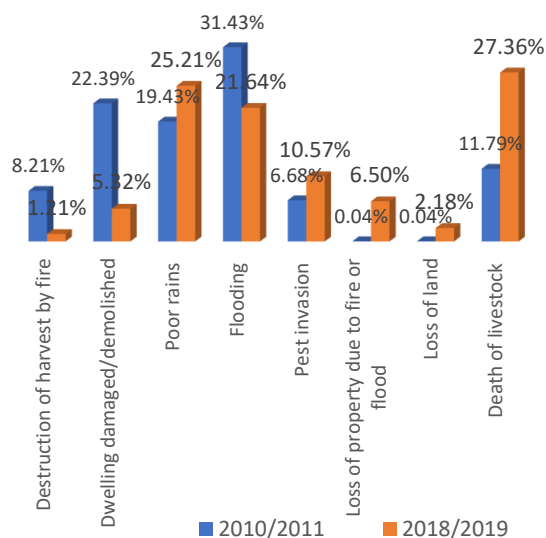
Socio-economic Characteristics	Frequencies	Percentage	Resilience index
Sex			
Male	1408	50.29	0.0817222
Female	1392	49.71	-0.0069609
Total	2800	100	
Age			
<25	722	25.79	-0.0329521
26-50 Mean=49	1794	64.07	0.0433206
51-75	232	8.29	0.0637820
75-100	52	1.86	0.7048504
Total	2800	100	
Marital status			
Married			
(monogamous)	701	25.04	0.14007760
Married (polygamous)	296	10.57	-0.0545803
Divorced	6	0.21	-1.5555800
Separated	3	0.11	-0.5915564
Widowed	67	2.39	0.1652147
Never married	1727	61.68	0.0135353
Total	2800	100	
Household size			
1-5	1375	49.11	0.0443846
6-10 mean=6	1135	40.54	0.0522322
11-15	271	9.68	-0.0351243
16-20	19	0.68	-0.2851757
Total	2800	100	
Level of Education			
No formal education	1140	40.71	0.0229956
Primary level	716	25.57	0.0408288
Secondary level	552	19.72	0.3677746
Tertiary education	392	14.00	-0.2827497
Total	2800	100	

Fig.1 Levels of Resilience



Climate shocks: Fig 2

Climate Shocks



MIMIC Model Estimates (ML) Fig 3

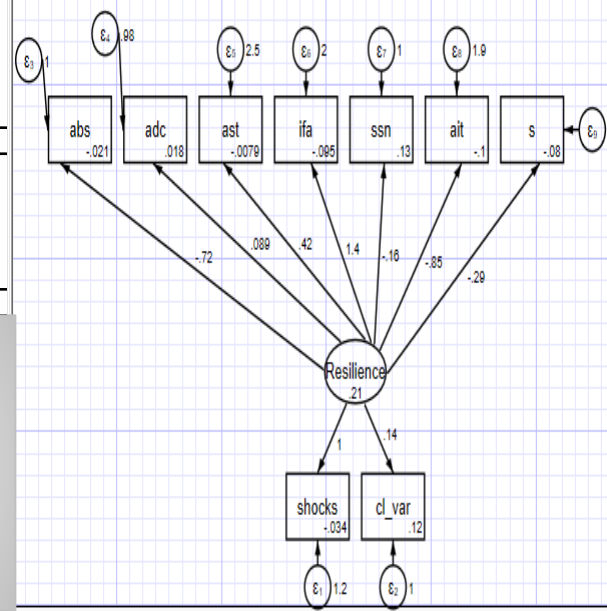


Table 2 : Ordered probit model indicating factors affecting resilience to climate shocks

Variables	Coef. / t-value	dy/dx; r=0	dy/dx; r=1	dy/dx; r=2
Sex:	-0.085	0.021	-0.012	-0.008
Female	(-1.68) *	(1.420)	(-1.410)	(-1.420)
Age	0.007	0.007	-0.004	-0.003
	(3.95) ***	(4.950) ***	(-4.900) ***	(-4.810) ***
Age squared	0.00037	-0.000	0.000	0.000
	(6.76) ***	(-6.890) ***	(6.750) ***	(6.520) ***
Marital status	0.035	0.005	-0.003	-0.002
	(2.56) **	(1.200)	(-1.190)	(-1.190)
Social capital	-0.036	0.014	-0.008	-0.006
	(-4.67) ***	(6.020) ***	(-5.940) ***	(-5.760)***
Livestock owned	-0.017	0.05	-0.003	-0.002
	(-20.04) ***	(25.580) ***	(22.670) ***	(14.520) ***
Household size	-0.049	0.014	-0.008	-0.006
	(-6.26) ***	(6.340) ***	(-6.240) ***	(-6.030) ***
Access credit	-0.251	0.074	-0.004	-0.030
	(-3.66) ***	(3.800) ***	(-3.770) ***	(-3.750) ***
Remittance	5.978	-1.837	1.093	0.744
	(0.950)	(-0.070)	(0.070)	(0.070)
Dependency ratio	0.043	-0.013	0.008	0.005
	(3.23) ***	(-3.430) ***	(3.420) ***	(3.370) ***
Levels of education				
Primary	0.336	-0.097	0.062	0.035
	(5.29) ****	(-5.280) ***	(5.170) ***	(5.170) ***
Secondary	0.454	-0.130	0.080	0.050
	(5.88) ***	(-5.780) ***	(6.060) ***	(4.980) ***
Tertiary	0.505	-0.149	0.089	0.060
	(6.16) ***	(-6.380) ***	(6.810) ***	(5.300) ***
Access to Extension	0.419	-0.115	0.068	0.046
	(6.44) ***	(-6.190) ***	(6.080) ***	(5.920) ***
Farm size	0.018 (0.13)	0.013 (0.340)	-0.008(-0.340)	-0.005(-0.340)
Income	0.000 (-0.03)	0.000 (0.030)	-0.000(-0.030)	-0.000(-0.030)
HH Food consumption	-2.678	0.784	-0.466	-0.317
	(-22.56) ***	(23.770) ***	(15.240) ***	(23.140) ***
Household head job	-0.007	0.000	-0.001	-0.001
	(-5.79) ***	(6.190) ***	(-6.100) ***	(-5.890) ***
Mean dependent var.0.594			SD dependent var. 0.699	
Pseudo r-squared 0.274			Number of obs. 2800	

*** $p < .01$, ** $p < .05$, * $p < .1$

Recommendations

- Formal education should be more enhanced among rural households to strengthen their resilience capacity to overcome the negative impacts of climate change.
- It is also crucial to address climate challenges through policies and actions that prioritize resilience and sustainable development