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HOW RESILIENT ARE NIGERIAN BUSINESSES TO CRISES?

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Contents

INTRODUCTION

- Natural or man-made crises can have severe and long-term consequences for businesses, as they can disrupt supply networks, diminish consumer demand, and induce financial instability.
- For instance, the COVID-19 pandemic had a global impact on businesses of all sizes and sectors, resulting in closures, bankruptcies, and job losses.
- During this crisis, the Nigerian economy entered a recession, recording negative GDP growth of -1.92% and the unemployment rate reached a high level of 33.3%.
- Before this time, there had been many other crises that the Nigerian economy had faced with varying impacts on domestic businesses; including the global financial crisis of 2008 and the global oil price shock that led to the 2016 recession.
- While some of the Nigerian businesses have collapsed as a result of these challenges, many others have struggled to keep their operations ongoing.
- It is against this backdrop that this study examines the extent to which businesses have been resilient during major crises in Nigeria and seeks to establish sectoral variations in resilience

INTRODUCTION - CONT'D

- The study examines the resilience of businesses over three recent crises in the country, global financial crisis, global oil price shocks, and the COVID-19 pandemic.

- The global financial crisis (GFC) occurred between mid-2007 and early 2009 and imposed extreme stress on global financial markets and banking systems.
  - The crisis' effects on the Nigerian economy was felt across the stock market, the banking industry, the foreign currency and balance of payments, as well as the real estate market.

- After the global financial crisis, the economy went through another crisis, brought on by several factors which led to a significant increase in the cost of production, leading to cost-push inflation and eventual recession in 2016

- According to Anake et al. (2020), before the 2016 recession, Nigeria experienced a growth rate of 2.11% in 2015'Q4. However, a negative growth of -0.36% was reported in 2016'Q1, signaling the beginning of a recession.
  - A further negative increase of -2.06% in GDP in 2016'Q2 caused the nation to enter a full-fledged recession.

- Furthermore, the rapid spread of the COVID-19 virus in 2020 led countries around the world into a health crisis and Nigeria was not exempted.

- Unlike previous global crises, COVID-19 saw economies experience a combination of a supply and demand shocks.
  - The shock spread throughout the economy, impacting businesses and sectors.

BACKGROUND

- Understanding the behavior of key macroeconomic and financial indicators during major crisis periods is essential for policymakers, investors, and business owners to make informed decisions.

- As shown in Figure 1, the GDP growth of the economy has experienced several fluctuations over time. It fell sharply to -1.58% and -1.92% in 2016 and 2020, respectively, when the economy plummeted into recession.

- In the same manner, the trend of crude oil prices presents evidence that the economy is highly dependent on this resource,
  - a decline in the price of crude oil affects the performance of the economy negatively.

- Figure 2 shows that the price of crude oil fell sharply to $43.10/barrel in 2008 during the global financial crisis.

- A similar trend was observed during the recession and COVID-19 pandemic of 2016 and 2020, respectively.

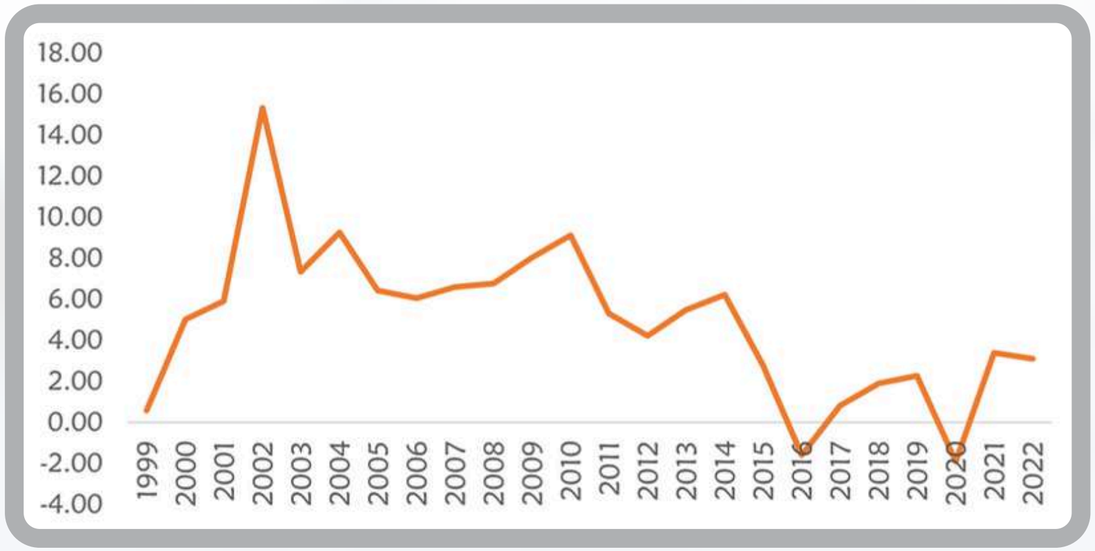

Figure 1: Trend in GDP growth (%)
Source: CBN Statistical Bulletin and ADSR Research

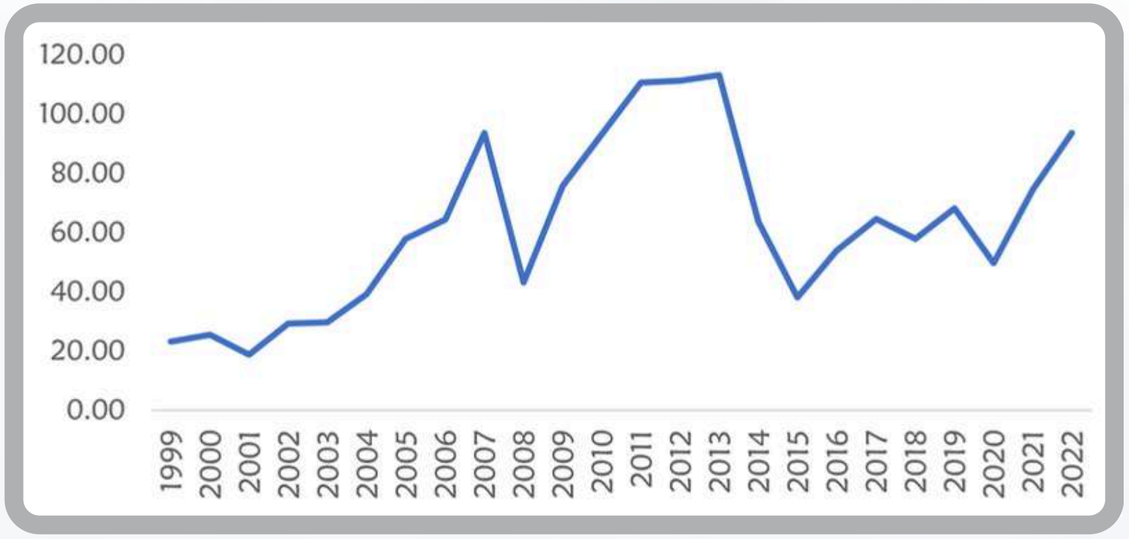

Figure 2: Trend in crude oil price ($/barrel)
Source: CBN Statistical Bulletin and ADSR Research

BACKGROUND - CONT'D

- In addition, the All-Share Index (ASI) of the Nigerian Exchange (NGX) trended upward from 1999 to 2008, when it peaked at 66,371.20 on the 5th March, 2008
- However, the market crashed at the advent of the financial crisis, reaching as low as 19,803.6 on 26th March, 2009.
- ASI lost a total share of 67%, while market capitalization lost 62% of its value between March 2008 and March 2009.
- It also fell by 45.8% in 2008, but with a sharp reversal of growth from 2007, when the market grew by 74.4%.

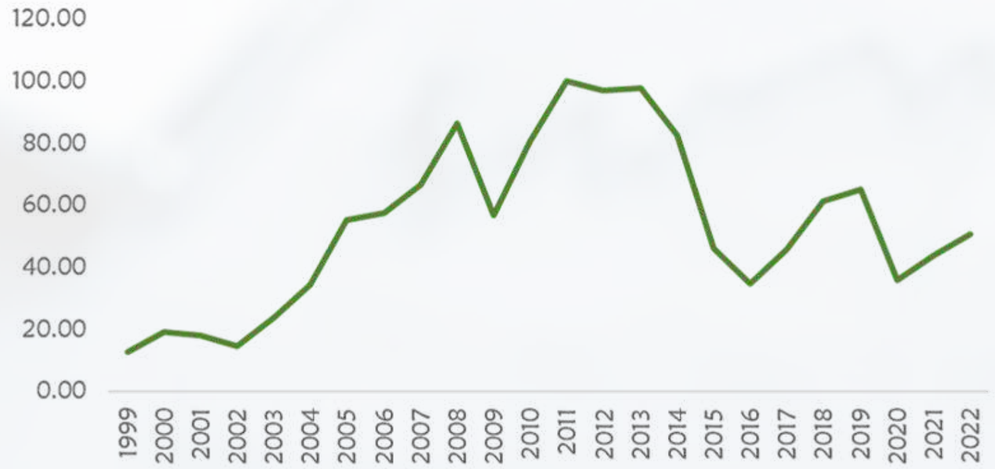

Figure 3: Total exports (US$'bn)
Source: CBN Statistical Bulletin and ADSR Research

- The total exports of the country, as presented in Figure 3, also show the effect of the crisis periods on the Nigerian economy.
- Total exports showed an uptrend up to 2008, the year of the financial crisis, but fell sharply from $86.32 billion in 2008 to $56.79 billion in the following year.
- This same trend was also observed in 2016 and 2020, when total exports fell to $34.70 billion and $35.94 billion, respectively.

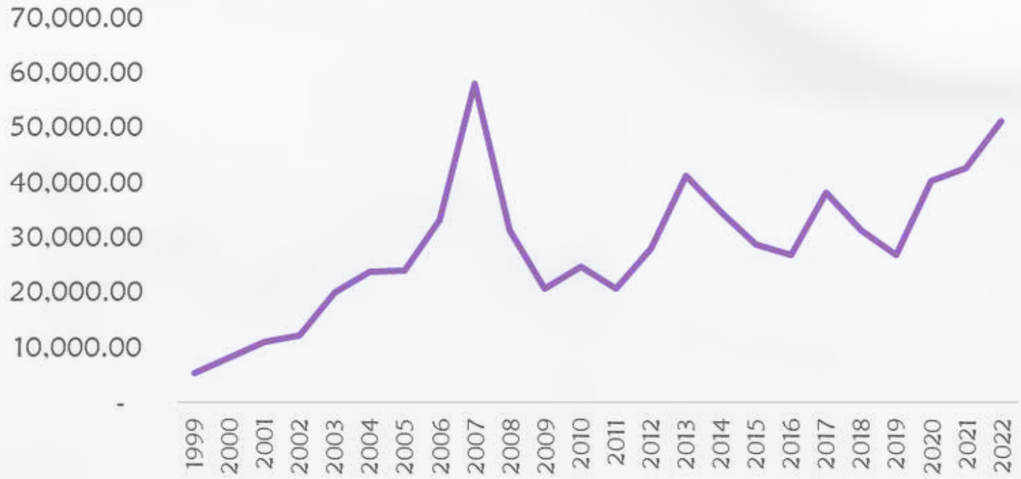

Figure 4: Trend of the All-Share Index
Source: CBN Statistical Bulletin and ADSR Research

CONCEPT OF BUSINESS RESILIENCE

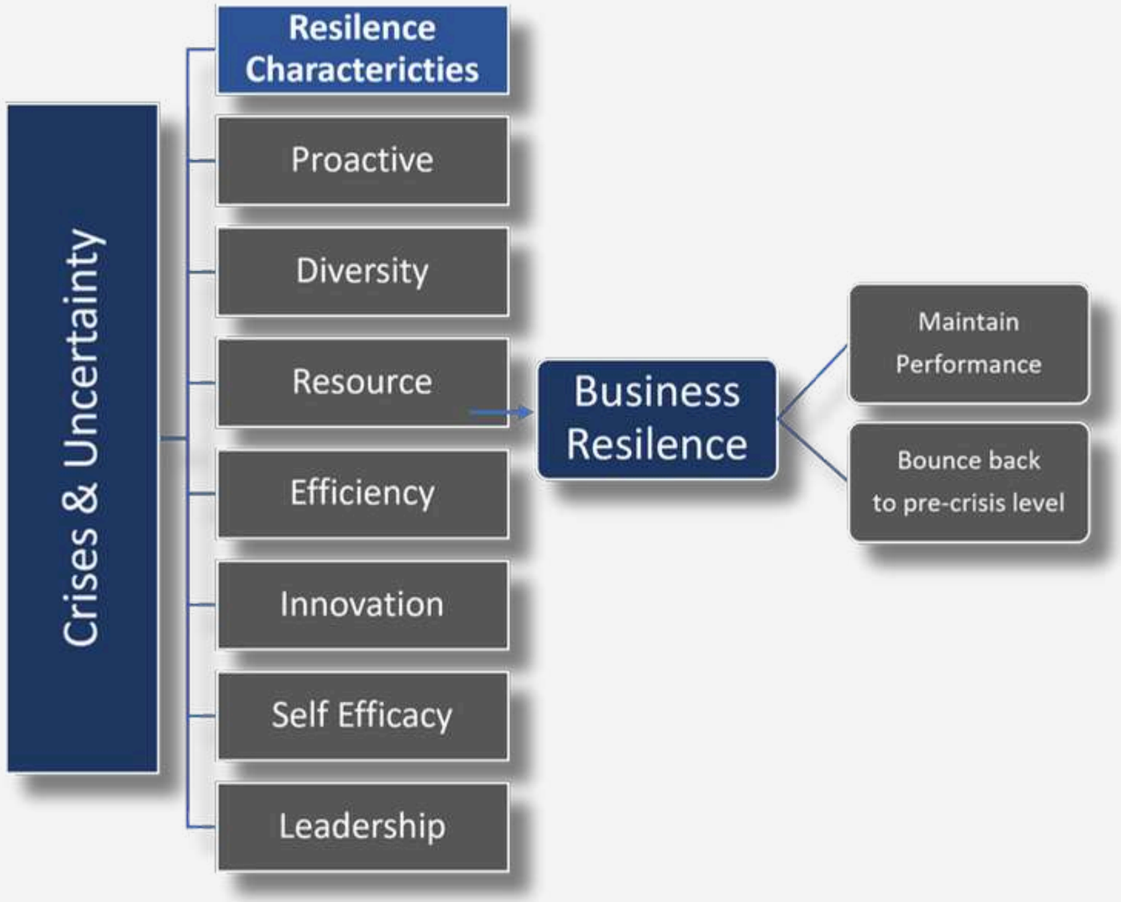

Figure 5: Conceptual Framework for Business Resilience
Source: Authors' drawn.

- The evolutionary perspective defines resilience as continuing adaptation to constantly changing circumstances (Kitsos & Bishop, 2018; Martin, 2012).

- The ability of a company to respond effectively to natural disasters, as well as man-made ones, has been largely equated with resilience in the business literature (Dahles & Susilowati, 2015).

- Figure 5 shows that business resilience in the event of a crisis and uncertainty is better mitigated with some organizational characteristics such as efficiency, diversity and proactiveness.

- These characteristics can either allow a business to maintain the trend of its performance even in adversities or bounce back after being affected by the crisis in the short term.

EMPIRICAL LITERATURE

Author (Year)	Findings
Purwanti and Hapsari (2021)	Resilience may be assessed in two dimensions - adaptive and planned resilience. Adaptive resilience was found to have a positive and significant effect on business performance, in contrast to planned resilience, which is not.
Wamba (2022)	Businesses under investigation seemed to be resilient during the pandemic. However, family firms were more resilient in terms of financial and social performance than non-family enterprises
Perwitasari et al. (2022)	Family and institutional ownership had a beneficial impact on company performance, whereas government ownership had a negative one.
Claessens, Djankov & Xu (2011)	The 2008-09 crisis had a higher detrimental effect on companies that were more sensitive to global trade and aggregate demand
Stewart and Chowdhury (2021)	A more stable banking sector decreases the negative impact of a financial crisis on GDP growth, offering economic resilience during crisis periods
Setiawan (2018)	The financial crisis period of 2009-2011 crisis did not harm the financial performance of listed companies on the India Stock Exchange
Madaleno and Barbuta-Misu (2019)	The crisis considered had a significant positive impact on financial performance as well as liquidity, asset turnover, and labor productivity.
Ozdemir et al. (2022)	Organizations that concentrated on developing good ties with suppliers and consumers fared better during the COVID-19 epidemic

METHODOLOGY: DATA

Variable	Calculation
Returns on Assets (%)	Profit after tax/Total assets
Financial Leverage (%)	Total liabilities/Total equity
Firm Size	Log. of Total assets
Solvency Ratio	Total assets/Total liabilities
Assets Turnover Ratio	Turnover/Total assets
Labour Productivity	(Turnover/1000)/Number of employees
Crisis Dummy	2008, 2009, 2016, 2017, 2020, 2021 = 1; Others = 0.

- The study sample involved a panel of 151 Nigerian Exchange (NGX) listed companies from 2000 to 2021.
- The sample companies were taken from different sectors of the economy
  - agriculture (5), finance and insurance (50), industrial (49), trade (11), and other services (36).
- The final sample consisted of 2794 firm-year observations.
- The dependent variable, returns on assets (ROA), was used as a measure of companies' performance and was regressed against independent variables
- Data was sourced from the financial reports of companies as contained in the Anastat Database of Analysts Data Services and Resources Limited (ADSR).

METHODOLOGY: MODEL

- The model used for estimation followed a panel data approach, combining time series with cross-section data, analyzed through time (years) and for several companies.

- The study estimated fixed and random effects to examine the general and individual effects of the crises on the financial performance of companies in the country and different sectors of the economy.
- Following relevant literature, the model estimated is as follows:

$$ROA_{it} = \beta_0 + \beta_1 asset\_turnover_{it} + \beta_2 financial\_leverage_{it} + \beta_3 labour\_productivity_{it} + \beta_4 size_{it} + \beta_5 solvency\_ratio_{it} + \beta_6 crisis_{it} + \varepsilon_{it}$$

- To also examine the impact of each crisis on business performance, the second model below was estimated
- Where crisis1, crisis2 and crisis3 are dummies for the crisis in 2008-2009, 2016-2017 and 2020-2021 respectively.

- The apriori expectation is that the financial and non-financial measures should positively impact business performance.
- The coefficients of the crises dummies capture the extent of the resilence of businesses to the respective crisis

$$ROA_{it} = \gamma_0 + \gamma_1 asset\_turnover_{it} + \gamma_2 financial\_leverage_{it} + \gamma_3 labour\_productivity_{it} + \gamma_4 size_{it} + \gamma_5 solvency\_ratio_{it} + \gamma_6 crisis1_{it} + \gamma_7 crisis2_{it} + \gamma_8 crisis3_{it} + \varepsilon'_{it}$$

RESULTS: DESCRIPTIVES

Descriptive statistics

As shown in Table 2, most companies had positive profitability during the periods considered, with average ROA and ROE of 1.33% and 1.79% respectively.

On average, the size, labour productivity, asset turnover ratio, and financial leverage of the sample companies were 7.02, 53.56, 0.71, and 2.55 respectively.

Table 2: Descriptive Statistics

	Obs.	Mean	Max.	Min.	Std. Dev.	Skewness	Kurtosis
ROA	2735	1.33	65.48	-99.32	14.98	-2.69	18.52
Size	2735	7.02	10.07	3.67	1.01	0.39	3.19
Solvency Ratio	2728	2.62	88.02	-6.61	4.59	10.32	155.74
Labour Productivity	2380	53.56	997.57	0.00	130.24	4.97	30.05
Financial Leverage	2794	2.55	100.73	-86.74	9.40	2.88	64.21
Crisis	2794	0.29	1.00	0.00	0.45	0.95	1.90
Asset Turnover Ratio	2735	0.71	10.41	-1.46	0.76	2.99	22.37

Source: Author's computation.

Correlation

Table 3 presents a weak pairwise correlation among all independent variables and a weak correlation coefficient between all independent variables on the dependent variables.

Table 3: Correlation matrix of the variables

	1	2	3	4	5	6	7
1. ROA	1.000						
2. Size	0.140	1.000					
3. Solvency ratio	0.122	-0.134	1.000				
4. Labour productivity	0.062	0.287	-0.067	1.000			
5. Financial leverage	0.019	0.118	-0.112	0.021	1.000		
6. Crisis	-0.044	0.160	0.009	0.094	0.008	1.000	
7. Asset turnover ratio	0.166	-0.233	-0.111	0.377	0.007	-0.083	1.000

Source: Author's computation.

RESULTS: CRISES AND BUSINESS PERFORMANCE

GENERAL CRISIS EFFECT

- The result in Table 4 shows that asset turnover, size, and solvency ratio significantly and positively impact business performance during the investigation period.
- Also, it is observed that companies were less resilient during crises, as indicated by a negative and statistically significant coefficient.
- This indicates that they struggled to maintain financial performance during the examined crises (the global financial crisis, Nigeria's recession in 2016 and the COVID-19 pandemic).

- Also, in examining the sectoral variation, it is revealed that businesses in the agricultural sector were the most resilient to these crises, followed by those in trade and other services sectors.
- However, businesses in the finance and insurance sector, as well as the industrial sector, were the most impacted by these shocks as they appeared to be less resilient to the crisis.

- Generally, the results show that businesses in Nigeria were less resilient to these crises as they negatively impacted their performance measures.
- In addition, it was observed that the crises exerted more impact on businesses operating in the finance and insurance sector as they appeared to be more vulnerable.

RESULTS: CRISES AND BUSINESS PERFORMANCE

GENERAL CRISIS EFFECT – CONT'D

Table 4: Impact of Crisis on Business Performance – General crisis effect

Variable	Full Sample		Agriculture		Finance and Insurance		Industrial		Other Services		Trade	
	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect
Asset Turnover	5.895***	5.4506***	25.1371***	-	13.5466***	11.1991***	10.2479***	10.4017***	-3.8708*	-1.3309	2.3565**	2.6945***
Financial Leverage	0.0226	0.0214	0.0725	-	0.0214	0.0572	0.0126	0.0136	-0.0132	-0.0008	0.0511	0.0419
Labour Productivity	0.0029	-0.0024	0.0710	-	0.0414**	0.0379**	-0.0558***	-0.0465***	0.0357*	0.0277**	0.0106*	0.0042
Size	1.9786***	3.0624***	10.0303	-	-0.5743	0.7351	8.7105***	8.1407***	-7.4565***	-3.5445**	-4.5907	0.5554
Solvency Ratio	1.1805***	1.1909***	2.9832**	-	0.9194***	0.8496***	2.2133***	2.3593***	1.2437**	1.2173*	0.6833	0.2429
Crisis	-1.6585***	-1.8401***	-0.2473	-	-1.8488**	-2.2690***	-2.2864**	-2.1977**	-0.4332	-0.8067	-1.3967	-2.6710
Adjusted R^2	0.3349	0.0666	0.4484	-	0.3285	0.0822	0.5038	0.1835	0.1601	0.0259	0.1303	0.0431
Prob. Hausman Test		0.0161		-		0.0005		0.3164		0.4708		0.2968
N	2368	2368	77	-	783	783	881	881	424	424	203	203

Source: Author's computation.

Note: ***, **, and * represent 1%, 5% and 10% levels of significance respectively.

RESULTS: CRISES AND BUSINESS PERFORMANCE

INDIVIDUAL CRISIS EFFECT

- The study also takes into account individual crisis effects as well as sectoral variations to examine the resilience of various businesses.
- The results in Table 5 show that the second crisis (the recession experienced in 2016-2017) appeared to affect business performance more than the remaining two, the global financial crisis and the COVID-19 pandemic.

- Generally, it was observed that the crises exerted more impact on businesses operating in the finance and insurance sector as they appeared to be more vulnerable.
- Businesses operating in the industrial sector were less resilient during the recession experienced in 2016 and COVID-19, while those categorized as other sectors were more impacted by the financial crisis and thus less resilient to the crisis.
- Similar to the results under the general crisis effects, businesses operating in the agricultural and trade sectors appeared to be more resilient to crisis.

RESULTS: CRISES AND BUSINESS PERFORMANCE

INDIVIDUAL CRISIS EFFECT - CONT'D

Table 5: Impact of Crisis on Business Performance - Individual crisis effect

Variable	Full Sample		Agric		Finance and Insurance		Industrial		Other Services		Trade	
	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect	Fixed effect	Random effect
Asset Turnover	5.8113***	5.3713***	25.4774***	-	13.7413***	10.6463***	10.1642***	10.3502***	-4.6984**	-1.7663	2.1177**	2.4855***
Financial Leverage	0.0208	0.0194	0.0683	-	0.0178	0.0627	0.0118	0.0129	-0.0186	-0.0055	0.0396	0.0296
Labour Productivity	0.0032	-0.0021	0.0741	-	0.0348	0.0349**	-0.0547***	-0.04561***	0.0391**	0.0292**	0.0118**	0.0065
Size	2.1137***	3.1468***	9.5693	-	-0.5000	0.9968	8.8358***	8.2103***	-6.8450**	-3.3777**	-4.7279	-0.3008
Solvency Ratio	1.1494***	1.1658***	2.9809**	-	0.9233***	0.8436***	2.2047***	2.3499***	0.9217***	1.0238**	0.6799	0.3035
Crisis1	-0.7327	-0.859	-1.1930	-	-2.0214**	-2.3675**	-1.6763	-1.6926	5.1366**	4.5246*	1.0982	0.0957
Crisis2	-2.5328***	-2.7607***	1.5063	-	-2.3551**	-3.0778***	-2.7837**	-2.5202*	-3.1058	-3.3060	-3.3807	-4.5513
Crisis3	-1.8156	-1.9309***	-0.8806	-	-0.7449	-1.2889	-2.6056*	-2.5375*	-2.5313	-2.4152	-2.7781	-3.7706
Adjusted R^2	0.3351	0.0672	0.4325	-	0.3278	0.0804	0.5028	0.1813	0.1741	0.0396	0.1271	0.0381
Prob. Hausman Test		0.0046		-		0.0000		0.5091		0.4862		0.6288
N	2368	2368	77	-	783	783	881	881	424	424	203	203

Source: Author's computation.

Note: ***, **, and * represent 1%, 5% and 10% levels of significance respectively. Crisis1, Crisis2 and Crisis3 represent dummy for crises in 2008-2009, 2016-2017 and 2020-2021 respectively.

CONCLUSION

This study investigated the resilience of Nigerian firms over three distinct crisis periods: the global financial crisis of 2007-2009, the 2016 recession, and the COVID-19 pandemic in 2020.

The study also shows that the agriculture sector was the most resilient to these crises, followed by trade and other services.

Also, policymakers can support businesses by implementing policies that encourage entrepreneurship, incentivize innovation, and facilitate access to financing and other resources, as a way of supporting them to navigate through crisis periods.

The findings indicate that asset turnover, size, and solvency ratio had a favourable impact on business performance over the period under consideration.

But, businesses in the banking and insurance sectors, as well as those in the industrial sector, were the most vulnerable to the crises.

It can also be stated that Nigerian firms were often less resilient to crises during these periods. However, the 2016 recession appeared to have a stronger impact on businesses.

It is therefore recommended that companies take proactive measures to manage their finances, operations, and workforce efficiency by streamlining processes, reducing costs, and increasing productivity.

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