

ORGANISATIONAL ENVIRONMENT AND PERFORMANCE OF SELECTED BREWERY FIRMS: AN EMPIRICAL EVIDENCE FROM NIGERIA (1990 – 2020)

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Abstract: This paper is an empirical examination of organisational environment and performance of selected brewery firms in Nigeria. The problems confronting the performance and sustainable survival of these brewery firms include turbulence and dynamics in the environment, exchange rate instability and frequent technological changes amongst others. In the investigation, the paper adopted ordinary least square (OLS) technique in the evaluation of methodological issues and empirical statistics. The study advocates stable exchange rate and macroeconomic environment so as to achieve efficient and effective performance of brewery firms.

Keywords: Environment, Organisation, Breweries, Performance and Investment.

1. INTRODUCTION

The nexus between organizational environment and performance is a key area of focus in organizational studies (*WU 2003; Boyd & Gove 2006; Dauda & Ismaila 2013; Dess & Beard 1984*). The current economic landscape is rugged and competition is fierce. Thus the unpredictable environmental turbulence and dynamics in the business environment hindering performance of Nigeria brewing sector justify the rationale for critical examination. The environment in the brewing sub sector of Nigeria is characterized by many problems (*Adetu 2012*). These problems occur in areas such as political, legal, economic, marketing, supply, international, regulatory, socio-cultural and technological environment and these have created some degree of turbulence for brewing industries (*Jamodu 2013*).

The constraints arising from this situation leads to less reliable information affecting organization's decisions making and they post great threat to brewing industry for managers to access the direction of the industry. This problem of instability in the environment becomes one of the most disturbing problems hampering efficient and effective performance of the breweries (*Jamodu 2013*). Other problems include but are not restricted to unstable exchange rate, price fluctuation, high rate of inflation, poor industrial policies affecting production and distribution of goods, monetary and fiscal policies, frequent technological changes, poor budget planning and non-implementation impact on the brewing sub-sector. Other problems of environmental turbulence impacting on performance of brewery industries include high cost of operation, high cost of maintenance, poor market investment, low industrial production, poor return on turnover, decrease in government revenue, insecurity and terrorism, low consumer income disposition, and oil pipeline vandalization and oil theft, declining consumer's spending, competition from other non-Alcoholic beverages, high cost of living, health awareness, religiosity (born again syndrome) and low investment in information and communication technology. The internal environmental factors hampering the growth and success of breweries include; lack of proper employee training

and skill acquisition, lack of well defined corporate structure and culture, poor marketing strategies, poor management choice and conflict resolution strategies, lack of innovative culture and low investment in research and development.

The problems highlighted above may be the reasons for fluctuation in growth of some of the breweries in Nigeria which is reflected in the review of the recent financial performance of some breweries in Nigeria. As shown above, Guinness Nigeria recorded deterioration in the over all performance from 2012 to 2014; this was a result of weaknesses in both profitability indicators and revenue generating capability of assets. Operating profit margin and net profit margin have been declining consistently over the past five years (*Equity Research 2014*). In recognition of the above constraint of performance in the midst of others, this study seeks to examine the extent to which environmental instability influence the performance of breweries in Nigeria.

Thus, the study is organized in sections. Section one captures the constraint vis-à-vis statement of problems. Empirical review in relation to related literature aimed at establishing a gap in previous knowledge so as to contribute to an existing body of knowledge forms the basis of section two while methodological issues and related empirical statistics become the bedrock of section three. Section four focuses on the result derivable from profitability equations in respect of Exchange Rate instability and profitability of breweries studies: The study terminates with brief concluding remarks and policy advocacy.

EMPIRICAL DISCOURSE:

Onwuchekwu (2000) opined that the rapid and often discontinuous change taking place the environment has a direct impact on the manner in which businesses are managed. Environments are constantly evolving as government regulations, competitive forces, technological advantages, and sociopolitical elements interact with the strategic capabilities of industries. According to **Adeoye (2012)**, in the study on the impacts of external business environment on organizational performance in the food and beverages industry in Nigeria, the external business environment of Nigerian organization impinges upon the operations of a business other than the availability of capital and the ability of the manager or businessman himself. He used questionnaire to collect data from the companies with 150 sample size and he used multiple regression for analysis.

He measured organizational performance in terms of efficiency, effectiveness, increase in sales, achievements of short and long term goods and achievement of customer/client satisfaction; he measured the dependent variable – Organizational Performance (OP) against the explanatory political environment (political terrain in the country, legal framework authority relationship). He measured the above variables to test his hypothesis which stated that the economic and political environment has no impact on Organizational Performance (OP). He found that economic environment has 93 per cent impact on OP while political environment has 68 per cent impact on organizational performance. This implies that external environment as measured by Adeoye has 128 per cent impact on the organizational performance, that is they have combines effect on OP in the food and beverage industry in Nigeria. His study also revealed that all things being equal, controlling the external business environment can be done to some extent. This entails and calls for constant monitoring and conducting environmental scanning always.

During the same period, *Okwo, Ugwunta & Agu (2012)*, in their study examined the internal factors that determine the profitability of the brewing firms in Nigeria. They used OLS in the form of multiple regression that covered annual data generated from the annual statements and accounts of the sampled brewing firms covering a period of 2000 to 2011. The correction and regression results identified the ratios of inventory to cost of goods sold; account receivables to sales; and sales and general administrative expenses to sales to have statistically significant impact on gross profit margin. Their paper concluded the internal factors mentioned are the internal factors that determine the profitability of beer brewing firms in Nigeria

Azeez, Kolapo & Ajaji (2012) in their study on effect of exchange rate volatility contribute positively to the GDP in the long run though not significant. They recommend that monetary authorities should pursue policies that would ensure stability of exchange rate. *David, Umeh and Ameh (2010)* also examined the effect exchange rate fluctuations on Nigerian manufacturing industries using multiple regression econometric tools. They found the negative relationship between exchange rate volatility and performance of manufacturing section. *Eme and Johnson (2012)* in their study on the effect of exchange rate movement on real output growth in Nigeria for the period 1986 to 2010 revealed that there is no evidence of a strong relationship between changes in exchange rate and output growth.

Adjei (2010) carried his study on the evaluation of the financial position of Accra Brewery Limited (ABL). This study was designed to evaluate the financial position and the profitability position of Accra Brewery Limited, a public company whose stock is listed and traded on the Ghana Stock Exchange over seven years period from 2000 – 2006. The study used traditional ratios analysis in appraising the financial performance of ABL focusing on the assessment of liquidity, solvency and financial profitability. Based on the ratio analysis, the study revealed trends of ABL's financial ratio and the result showed both an impressive and unimpressive performance. The *Equity Research Report (2006)* carried a comparative analysis of the performance of selected Breweries in Nigeria. These Breweries are Nigerian Plc., Guinness Nigeria Plc, Champion Breweries Plc and Jos International Breweries Plc. The criteria for the comparison are based on market share by turnover, profit after tax, latest stock price, price earning ratio, profit sales ratio, twelve months trading earning per share, market capitalization, share outstanding, return on Equity, return on Asset, Net Asset per share, profit margin, shareholders' fund, Beta, Dividend yield, and a 5 year dividend yield average percentage derived from 2005 financial reports of the Breweries. The analysis yielded varying degree of performance for the studied firms. They opined that the importance of cost of input in a manufacturing company especially the brewing industry cannot be over emphasized. Input in form of materials, labour, investment in fixed assets, taxes in one way or the other have an effect on the performance of the industry.

Alex (2008) commented on the effect of scarcity of the major ingredients of beer-barley and hops. The input price on barley and hops hits more breweries the hardest which recently raised the price of its pint from \$2 to \$6. He further explained that the beer industry is experiencing cost increases in raw materials. This is just one of the many factors that contribute to costs and reduction in profit. *Adeoti (2012)* investigated investment in technology by manufacturing firms in SouthWest Nigeria and how technology investment related factors affect the performance of manufacturing firms. He used data obtained from a survey of Nigerian firms in 2011 and found that investment in technology are dominated by imported technologies, and technology investments are not directly targeted at export potentials and global competitiveness of firms. He found that the technology invested related factors that impact positively on performance and competitiveness include skills intensity and investment in skill upgrading.

Mital, Pennathur, Huston, Thompson, Pittman, Markel & Kabel, (1999) looked at the need for workers training in advance manufacturing technology (AMT) environment. Their review focused on manufacturing and the need for developing and evaluating generic, consistent and standardized on-site industrial training programs in manufacturing industry to upgrade workers skills to levels that are compatible with the need of advanced manufacturing technologies. They studied manufacturing firms in the United States and found that they are losing competitiveness to other as a result of poor worker training on advanced manufacturing technology.

They maintained that investment in workforce skills is of great importance if the US industry is to maintain competitive in the global economy. According to *Haijipour, Talare, and Shahin(2011)*, as the organization structure of firms is evolutionary, rather than being revolutionary, in many industrial firms, the match between structure and technology takes several years after implementation. Linking structure to technology, they opined that the acceptance of new technology in the organizations, which are naturally reactive to technological adoption and have no organized effort to exercise organizational change, which would take longer time compared with more proactive and organizationally flexible firms. Preparing employees for the adoption, prior the start of the process, seems essential to reach desired goals.

Peter and Duray (2000) looked at the manufacturing strategy in context of environment, technology, comparative strategy. They used data from a sample of manufacturers in three industries in United States. They found a positive link between environmental dynamism and quality and delivery capabilities among high performers. They used path models to establish that environmental factors such as technology affect manufacturing strategy and performance. *Acevedo (2002)* in here paper titled "*Technology and Firm Performance in Mexico*" investigated the relationship between a firm's adoption of new manufacturing technology and its performance. Using a panel of firms with the performance of Mexican manufacturing firms, measured by wages, productivity, net employment, job creation and job destruction. She used fixed models to estimate firm performance and determine wage inequality. Her results suggest that her controlling for relevant variables, technology is positively related to the firm performance. The effect of new technology on firm performance also correlates positively and strongly with firm size and proximity to the U.S border or location in Mexico City. In fact maximizing the performance of employed AMTs does not depend on technology itself, how well it is implemented, is a crucial factor (*Acevedo 2002*). However, the earlier studies by *Cotsomitis et al (1991)* and *Kumar (1993)* indicated that the technology variable has no role to play in performance.

Booze (2009) also explored the impact of inflation of the inputs costs on the gross margins of brewers in the liquor industry. He found that the inflation in prices of barley and aluminum led to steep rises in the input costs of the alcohol brewers. He reported that in the last two years, brewer's gross margin fell by 350 billion pounds due to inflation in inputs. Thus, high inflation has a negative impact on breweries performance. *Kinyua-Njuguma Munyoki Kibera* on influence of internal organization environment on performance of Community-based hiv and aids organizations in Nairobi county indicate that the internal Environment of an organization influences its performance. The authors empirically assess the predicted relationship using survey data from 163 community based hiv and aids organizations in Nairobi county, Kenya. They opined that Performance is dependent on the internal environment of an organization has an impact on an organisation's effectiveness, efficiency, relevance and financial viability with impacts on the efficiency and relevance performance indicators.

According to *Johnansen and Rhys (2012)*, in their study on organizational environment and performance, a linear or nonlinear relationship, there is a strong straightforward linear relationship between organizational environment and performance. They used both objective and subjective measure of the environment to study over five hundred organizations in Texas, in the United State. They found strong support for the presence of linear relationship between each environmental dimension and type of measure and performance but no evidence of statistically significant nonlinear environment effects. Their paper explored the linear and nonlinear effects of organisational environments on performance.

They measured the subjective complexity (harmonious groups, complex environment, and educational conflict, objective dimension (stable environment, environmental uncertainty), subjective dynamism (harmonious relationship within group, complex environment and conflict) and subjective munificence (hauling and facilities, community support). They found that Manager's perception of the relative munificence of the environment may have a larger impact on organizational outcomes than an objective measurement of that munificence. Perhaps because a feeling of environmental supportiveness is especially likely to prompt innovative actions that benefits the organizations.

There is a significant relationship for objective complexity but not for subjective complexity. Objective complexity exerts a negative impact on performance. Objective and subjective measures of environmental munificence and dynamism have a linear positive relationship with organizational outcomes while only the objective complexity measures exhibits a statistically significant and linear influence on performance.

Thus, in sum, five out of the six possible environment performance relationships are statistically significant but none of them follow a non linear pattern. The statistical results indicate that organizations operating in a munificent context perform better than their counterparts in less favourable circumstances, irrespective of how munificence is measured. By contrast, those operating in a rapidly changing and unpredictable environment (or one that is perceived by managers to be dynamic in this way) do worse than their counterparts in a more stable and predictable context. Managers operating in an environment that they believe to be complex actually do no better or worse than managers in a less complex environment. However, organizations operating in an "objectively" complex environment do not perform as well.

The statistical results they presented have important theoretical and practical implications. Because variations in the organizational environment appear to have predictable effects on performance, organizations may not need to make fine-grained judgments about optimum levels of munificence, complexity and dynamism beyond which point serious remedial interventions are required. Rather, the linear relationships that are uncovered suggest that organizations are able to plan out their response to the environment with great strategic clarity. However, their findings show that it remains conceivable that the effects of different dimensions of the environment are not straightforwardly positive or negative. The benefits of environmental munificence may turn negative as organizations become complacent or overconfident in their capacity to keep on doing what they did well in the past. Likewise, at low-medium levels, complexity and dynamism may actually sharpen managerial awareness of the challenges to be confronted, at least until the environment becomes too complicated or unpredictable to manage effectively.

They opined that is it quite conceivable that other factors of managerial activity will be more or less successful at every high or very low levels of environmental dynamism and therefore recommended much more work to be done to analyse the full scope of nonlinearity in the organizational environment-performance relationship. From the above review, the researchers found a statistical relationship between business environment and business performance. However, *Adeoye (2012)* didn't specifically study the environmental constraints of brewing industry and he also neglected other

environment factors that can affect the performance of breweries in Nigeria like technological, social factors and other macroeconomic factors. He also studied both the food and beverages industry in Nigeria which is very broad and his work covered only the period between 2011 and 2012 while the *Jonhsen et al (2012)* studied businesses in the U.S.A. Thus, their statistical result may equally be a product of where and when they research was concluded. It is therefore important to identify whether environmental instability effect the performance of organizations. Evidence of the impact of environmental turbulence and the performance of breweries in Nigeria is also limited. Thus, this study seeks to bridge this gap in knowledge.

2. STYLISTED FACT AND EMPIRICAL STATISTICS

The stylized fact in relation to the variables associated with profitability situation in the Nigerian Breweries Plc, Guinness Breweries Plc, and International Breweries Plc, are as contained in tables 1, 2 and 3, respectively. The pattern and trend of profitability, exchange rate, import, export investment as well as industrial production are as stated in the tables ranging from 1990 to year 2019.

Table 1: Profitability Equation for Nigeria Breweries Plc

$$PRT = a(EXCHR, INV, IMP, EXP, INDP)_t \dots\dots\dots (1)$$

Year	Profit (N'000)	Exchr (N)	Import (N'000)	Investment (N'000)	EXP (N'000)	Industrial Production (N'000)
1990	4978280	8.0	34857	11250000	118205	14702
1991	5310027	9.9	139429	11250000	118202	19356
1992	4646993	17.3	273389	11250000	118209	24004
1993	5973183	22.1	525749	11250000	118194	38987
1994	7964381	21.9	808846	11250000	118224	62898
1995	7986920	21.9	1617694	11250000	118265	105290
1996	7941749	21.9	1941232	15000000	118283	132897
1997	8031403	21.9	1127167	15000000	118047	144107
1998	7851284	21.9	6262040	15000000	118519	141497
1999	8212839	92.7	2005884	15000000	117574	150947
2000	8936084	102.11	1203530	15000000	119464	168037
2001	7,489284	111.94	6017653	15000000	115684	199076
2002	10382438	120.98	915887	15000000	123245	236826
2003	10992037	129.36	1044832	15000000	108122	287739
2004	9148138	133.5	7313824	15000000	138369	349316
2005	12897746	131.66	8126471	15000000	778745	412707
2006	16436255	128.65	76323394	15000000	198864	478524
2007	27876336	117.97	1659607	15000000	231184	520883
2008	37519114	130.75	2051161	15000000	221481	585573
2009	41399796	147.6	2320399	15000000	183621	612614
2010	44880248	156	28555556	15000000	886877	647823
2011	57118228	151.8	31310201	15000000	182574	615235
2012	55624366	155.86	28145445	15000000	191396	652122
2013	62240317	158.63	19572067	15000000	253312	622650
2014	61461821	164.61	19540378	82962500	245008	621415
2015	61851	197.07	19586413	82962500	249160	621415
2016	7871	172.4	28743518	92381200	342181	744781
2017	7894	188.62	28885679	94463178	381218	765241
2018	81240	198.72	30126688	14072899	367445	777210
2019	8528	198.10	332488	88977184	391822	821765

Source: Nigerian Breweries Annual Report (various issues)

Nigerian Stock Exchange Fact Book (various issues)

Table 2: Profitability Equation for Guinness Breweries Plc

$$PRT = b(EXCHR, INV, IMP, EXP, INDP)e_t \dots\dots\dots (11)$$

Year	Profit (N'000)	Exchr (N)	Import (N'000)	EXP (N'000)	Investment (N'000)	Industrial Production (N'000)
1990	5137953	8.0	5335	469033	1373700	14702
1991	5151007	9.9	21339	469029	1373700	19356
1992	5124899	17.3	62762	469038	1373700	27004
1993	5177116	22.1	169629	469020	1373700	38987
1994	5072681	21.9	434948	469056	1373700	62898
1995	5281552	21.9	483367	468983	1373700	105290
1996	4863810	21.9	115087	469130	1373700	132897
1997	5699293	21.9	255748	468835	1373700	144107
1998	4028328	21.9	532811	469425	1373700	141496
1999	7370258	92.7	1087370	468246	1373700	150947
2000	6863977	102.11	2132099	470604	1831600	168037
2001	4876540	111.94	4100191	465887	1831600	199079
2002	5851413	120.98	3280155	475321	1831600	236826
2003	9901668	129.36	2811561	456454	1831600	287739
2004	11687494	133.5	4217342	494188	1831600	349316
2005	6276167	131.66	46859356	418720	1831600	412707
2006	11436771	128.65	53651781	569655	1831600	478524
2007	14884450	117.97	8671339	749122	1831600	520883
2008	17092950	130.75	9257194	964691	1831600	585573
2009	18991762	147.6	16366451	808597	1831600	612614
2010	19988735	156	20192521	565718	1831600	647823
2011	36176966	151.8	24921059	355666	1831600	615235
2012	21074950	155.86	21363100	650273	1831600	625122
2013	17008875	158.63	29984338	2878221	1831600	622650
2014	11681560	164.61	22305881	2308192	1831600	621415
2015	15302844	197.07	21242675	1869636	1831600	621415
2016	17447688	199.00	22423342	1926492	1922711	524828
2017	17794469	200.1	23325161	1948524	1934628	634526
2018	18246458	360.0	23924138	1951212	1955739	644687
2019	19356879	385.0	24824159	19982132	1966812	655213

Source: Guinness Breweries Annual Report (various issues)

Nigerian Stock Exchange Fact Book (various issues)

Table 3: Profitability Equation for International Breweries Plc

$$PRT = b(EXCHR, INV, IMP, EXP, INDP)e_t \dots\dots\dots (111)$$

Year	Profit (N'000)	Exchr (N)	Investment (N'000)	Import (N'000)	EXP (N'000)	Industrial Production (N'000)
1990	44927	8.0	1000000	10192	1113	14702
1991	51667	9.9	1000000	12843	1202	19356
1992	58453	17.3	1000000	19107	1203	27004
1993	69587	22.1	1000000	25613	1947	38987
1994	78628	21.9	1000000	29853	1558	62898
1995	85595	21.9	1000000	31816	7106	105290
1996	114126	21.9	1000000	333811	2274	132897
1997	114789	21.9	1000000	35874	2252	144107
1998	113465	21.9	1000000	36182	2297	141496
1999	116112	92.7	1000000	14632	2267	150947

2000	110818	102.11	1000000	424162	2386	168037
2001	121407	111.94	1000000	548491	2029	199079
2002	100228	120.98	1000000	676447	2743	236826
2003	142586	129.36	1000000	698646	1314	287739
2004	242388	133.5	1000000	722892	1544	349316
2005	523657	131.66	1000000	726233	1428	412707
2006	361360	128.65	1000000	814421	6814	478524
2007	118215	117.97	1000000	8101437	4043	520883
2008	63505	130.75	1000000	8112381	6528	585573
2009	285546	147.6	1000000	894232	2005	612614
2010	199133	156	1000000	9267114	2439	647823
2011	190341	151.8	1000000	9385433	30532	615235
2012	284266	155.86	1000000	9576336	48380	625122
2013	3555546	158.63	1000000	1105189	66248	622650
2014	3925500	164.61	1000000	11603547	55751	621415
2015	4070000	197.07	1000000	12209641	59300	621415
2016	4082213	199.00	2123442	13308721	59800	642628
2017	40884218	200.00	2346413	14632813	59981	844384
2018	40899218	360.00	2455362	14842933	60211	652112
2019	40934027	355.00	2556238	15251444	62422	655281

Source: *International Breweries Annual Report (various issues)*

Nigerian Stock Exchange Fact Book (various issues)

Tables 1, 2, and 3 represent the variables used for estimating the profitability equation. The first column on the table represents the years covered in the study; the second column represents the figures for profits of the Breweries for the period under study. Columns 3, 4 and 5 represents the figures for the environmental variables, exchange rate, investment, import, export and industrial production for the same period.

3. METHODOLOGICAL ISSUES AND RELATED STATISTICS:

Profitability Equation:

This equation assesses the extent to which exchange rate instability influences the profitability of breweries in Nigeria. The estimation model is as stated below:

a. Nigerian Breweries Plc

$$PRT = a_0 + a_1 EXCHR + a_2 INV + a_3 IMP_{t-1} + a_4 EXP_{t-1} + a_5 INDP_t + e_t \quad \dots \dots \dots (i)$$

This can be restated thus:

$$PRT = a_0 + a_1 LEXCHR + a_2 LINV + a_3 LIMP_{t-1} + a_4 LEXP_{t-1} + a_5 LINDP + e_t \quad \dots \dots \dots (ii)$$

b. Guinness Nigerian Breweries Plc

$$PRT = b_0 + b_1 EXCHR + b_2 INV + b_3 IMP_{t-1} + b_4 EXP_{t-1} + b_5 INDP_t + e_t \quad \dots \dots \dots (iii)$$

This can be restated thus:

$$PRT = b_0 + b_1 LEXCHR + b_2 LINV + b_3 LIMP_{t-1} + b_4 LEXP_{t-1} + b_5 LINDP + e_t \quad \dots \dots \dots (iv)$$

c. International Breweries Plc

$$PRT = c_0 + c_1 EXCHR + c_2 INV + c_3 IMP_{t-1} + c_4 EXP_{t-1} + c_5 INDP_t + e_t \quad \dots \dots \dots (v)$$

This can be restated thus:

$$PRT = c_0 + c_1 LEXCHR + c_2 LINV + c_3 LIMP_{t-1} + c_4 LEXP_{t-1} + c_5 LINDP + e_t \quad \dots \dots \dots (vi)$$

Where:

e_t	=	error term/stochastic/disturbance term.
a_0 - a_6	=	parameter estimates/structure
e_0 - e_6	=	parameter estimates/structure
f_0 - f_6	=	parameter estimates/structure
$LPRT$	=	log of profitability
$LEXCHR$	=	log of exchange rate
$LINV$	=	log of investment
$LIMP_{t-1}$	=	log of import at a particular point in time
$LEXP_{t-1}$	=	log of export at a particular point in time
$LINDP$	=	log of industrial production

Profitability is presented in this equation as the dependent variable while exchange rate, investment, import at a particular point in time, export and industrial production are the independent variables. Profit or bottom line is a measure of profitability of a venture after accounting for all costs. It is calculated by subtracting a company's total expenses from total revenue, thus showing what the company has earned (or lost) in a given period of time (usually one year). Company profits before income tax is equivalent to the accounting term "earnings before taxes" (EBT). This measure is often used to monitor company profits without the impact of changes in tax rates or differences between tax jurisdictions. Company profits before income tax is measured as net operating profit or loss before income tax and extraordinary items and is net of capital profits or losses arising from the sale of businesses' own goods and dividends received. Profit is the dependent variable and has a functional relationship with the explanatory variables explained below as the independent variables. Exchange rate served as one of the explanatory variables and it's the price for which the currency of a country can be exchanged for another country's currency. Factors that influence exchange rate include interest rate, inflation rates, trade balance, political stability, internal harmony, high degree of transparency in the conduct of leaders and administrators, general state of the economy and quality of governance (business dictionary, 2015). Currency exchange rates can help or hurt the exporting of firm's products to specific foreign market. The brewing industry is highly capital intensive. This accounts for the reason why the ownership structure is either public and/or state-owned with/without foreign partnership. The technology for the industry, spare parts and expert technicians are rarely available in the country and therefore highly dependent on foreign exchange.

When the exchange rate increases, it affects the purchasing power of breweries and the profitability of the business. Because about 40 per cent of brewing materials and services are imported from outside the country, they are exposed to exchange rate risks Adetu (2013). The vulnerability of brewing companies earnings to exchange rates movements cannot be over emphasised as many of their material inputs as well as production costs are directly imported by the exchange rate volatility. The brewers for instance have to manage the exchange rate volatility. expected to reflect in the costs of raw materials such as barley and hops.

Investment is the money committed or property acquired for future income (*Business Dictionary, 2015*). Investment in breweries annual reports are stated at the lower cost or net realizable value. The amount invested in breweries may be a determinant of the profitability of the brewing firms. Export is a function of international trade whereby goods produced in one country are shipped to another country for future sale or trade. The sale of such goods adds to the producing nation's gross output. If used for trade, exports are exchanged for other products or services. Most of the largest brewing companies derive a substantial portion of their annual revenue from exports to other countries. The ability to export goods helps companies to grow by selling more overall goods and services and this seems important for increase profitability. Importation by breweries may also have a significant influence on their productivity considering the fact that most of their technologies are imported. Export and import may lead to an increase in productivity at firm level in breweries in Nigeria.

Industrial production is a measure of output of the industrial sector of the economy. Industrial Production figures are used by organizations and the central banks to measure inflation, as high levels of industrial production can lead to uncontrolled levels of consumption and rapid inflation and this may have adverse effect on the profitability of breweries in Nigeria.

4. PRESENTATION OF RESULTS

The research focused on environmental instability and performance variable and regression result shown below was obtained using the OLS technique.

PROFITABILITY EQUATION (NB PLC)

Regression result of the influence of exchange rate instability on the profitability of Nigerian Breweries Plc.

<i>Dependent variable:</i>	<i>PRT</i>	
<i>Current Sample:</i>	<i>1990 – 2015</i>	
<i>Number of Observations:</i>	<i>26</i>	
<i>Mean of dep. Var.:</i>	<i>10.6159</i>	<i>Jarque-Bera test = 14,26060[.001]</i>
<i>Sum of squared residuals</i>	<i>=15.2738</i>	<i>std.dev. of dep. Var = 2.21737</i>
<i>Std error of regression =</i>	<i>.152128</i>	<i>Variance of residuals = 565696</i>
<i>Adjusted r-squared =</i>	<i>.984945</i>	<i>R-squared = .899791</i>
<i>Durbin Watson =</i>	<i>2.15973[.350,.907]</i>	<i>LM het. Test = .899791</i>
<i>Ramsey's RESET2 =</i>	<i>.293879[.592]</i>	<i>f(Zero slopes) = 60.609[.001]</i>
<i>Schwarz B.I.C =</i>	<i>42.2368</i>	<i>Log likelihood = .33.5725</i>
<i>R =</i>	<i>-0.873452</i>	

Variables	Estimated Co-efficient	Standard Error	T-Statistics	P-Value
ΔC	3.91534	3.60048	2.3610	[.183]
ΔLEXCHR	-.143381	2.76488	-2.518581	[.008]
ΔLINV	.385398	1.75352	2.19728	[.000]
ΔLIMP_{t-1}	.013046	.016981	-.868282	[.000]
ΔLEXP_{t-1}	.0660997	.159042	4.55263	[.000]
ΔLINDP	-347878	.18792	-.98722	[.000]

Source: Gret L. Package

PROFITABILITY EQUATION (GUINNESS PLC)

Regression result of the influence of exchange rate instability on the profitability of Guinness Breweries Plc.

<i>Dependent variable:</i>	<i>PRT</i>	
<i>Current Sample:</i>	<i>1990 – 2015</i>	
<i>Number of Observations:</i>	<i>26</i>	
<i>Mean of dep. Var.:</i>	<i>11.1849</i>	<i>Jarque-Bera test = 1.15252[.562]</i>
<i>Sum of squared residuals=</i>	<i>9.18888</i>	<i>std.dev. of dep. Var = 1.69819</i>
<i>Std error of regression =</i>	<i>.606263</i>	<i>Variance of residuals =</i>
<i>Adjusted r-squared =</i>	<i>.872548</i>	<i>R-squared = .9348327</i>
<i>Durbin-Watson =</i>	<i>2.18375[.208,773]</i>	<i>LM het. Test = 2.65808 [.103]</i>
<i>Ramsey's RESET2 =</i>	<i>3.20454[.086]</i>	<i>f(Zero slopes) = 363714[.000]</i>
<i>Schwarz B.I.C =</i>	<i>37.5722</i>	<i>Log likelihood = .25.4422</i>
<i>R =</i>	<i>-0.663396</i>	

Variables	Estimated Co-efficient	Standard Error	T-Statistics	P-Value
ΔC	244.098	497.122	1.491022	[.527]
$\Delta LXCHR$	-268.351	791.836	4.338897	[.007]
$\Delta LINV$	391.948	1103.46	7.355200	[.000]
$\Delta LIMP_{t-1}$	287.030	121.193	-2,36837	[.000]
$\Delta LEXP_{t-1}$	.13993E-02	.011201	.116949	[.000]
$\Delta LINDP$	.228917	0.231186	1.99872	[.000]

Source: Gret L. Package

PROFITABILITY EQUATION (INT. BREW. PLC)

Regression result of the influence of exchange rate instability on the profitability of International Breweries Plc.

Dependent variable:	<i>PRT</i>	
Current Sample:	1990 – 2015	
Number of Observations:	26	
Mean of dep. Var.:	15.0886	Jarque-Bera test = .503095[.778]
Sum of squared residuals=	2.60787	std.dev. of dep. Var = 1.95346
Std error of regression =	.310786	Variance of residuals = .096588
Adjusted r-squared =	.974689	R-squared = .977955
Durbin Watson =	1.45978[.006,227]	LM het. Test = .779561[.377]
Ramsey's RESET2 =	199374[.659]	f(Zero slopes) = 299.437[.000]
Schwarz B.I.C =	13.9551	Log likelihood = 5.29079
R =	-0.750932	

Variables	Estimated Co-efficient	Standard Error	T-Statistics	P-Value
ΔC	33.7875	63.4163	.532788	[.599]
$\Delta LEXCHR$	-2.90529	5.18621	-.560195	[.000]
$\Delta LINV$	.17767	1.63076	2.110895	[.000]
$\Delta LIMP_{t-1}$	.054903	.947989	2.057916	[.000]
$\Delta LEXP_{t-1}$	1.41947	3.19415	1.66397	[.000]
$\Delta LINDP$	76.1360	3.40986	2.23828	[.000]

Source: Gret L. Package

Influence of Exchange Rate Instability and Profitability of Breweries:

The regression result of profitability versus exchange rate, investment, import, export at a particular point in time and industrial production for the three companies indicate that there exist a negative relationship between exchange rate instability and profitability. The result revealed that the estimated co-efficient in the case of investment for the three companies are all statistically significant. The result of the estimated co-efficient of the constant terms shows 3.91534 and it is statistically not significant in the case of Nigeria Breweries Plc. This implies that any percentage increase in exchange rate, holding other variable constant will decrease the profitability of Nigeria Breweries by 4 per cent. This is because there are other exogenous variables outside the scope of study which may have affected their profitability.

However, investment is both positively signed and statistically significant implying that increase in investment result in subsequent increase in profitability of both NB Plc, Guinness Breweries Plc and Int. Brew, Plc. This is in line with management expectation. The result in the case of NB Plc shows that investment and export improve with income in profitability, while profitability decreases by 1 per cent as exchange rate fluctuate. For Guinness, the result shows that profit decreases with increase in exchange rate instability. For INT. BREW., investment, export and industrial production increase as profit increases as shown in the regression result. A close inspection of the result indicates that the specified model has a high co-efficient of determination. This can be seen from R-squared of .899791 (89 per cent), .934832 (93

per cent) and .977955 (98 per cent) for NB Plc, Guinness Nigeria and INT Brew., respectively. The R-squared shows the percentage variation in the dependent variable that was accounted for by variation in the explanatory variables. The fitness of every regression model is based on its R-squared.

The f-statistics value 60.6091, 36.3714 and 299.437 shows that the overall model is statistically significant for the three companies.

Exchange rate instability is expected to have an influence on the profitability of breweries since it is unpredictable and brewing equipments are mostly imported and capital intensive. This study was carried out to know the extent to which exchange rate affect the profitability of breweries. The empirical evidence shows that increase in exchange rate instability actually has over 80 per cent negative influence on brewer's profit. The correlation coefficient (r) shows that there is a huge relationship between exchange rate and profitability of breweries as the result shows that exchange rate has .873452 (87 per cent), .963396 (96 per cent) and .750932 (75 per cent) relationship with profitability for NB Plc, Guinness Plc and Int Brew. Plc, respectively. This indicate that there is a significant negative relationship between exchange rate instability and the profitability of these brewing firms.

Though *Aliyu (2011)* and *Azeez et al (2012)* found that exchange rate volatility contribute positively to performance of manufacturing firms in the long run, this research findings show that the reverse is the case. This finding is therefore in line with the findings of *David et al (2010)*, *Adeoye (2012)* and *Eme & Johnson (2012)*, in their studies, they revealed a negative relationship between exchange rate and volatility and manufacturing sector performance. From our findings, exchange rate instability remains one of the major environmental factors hampering the performance of brewing industries in Nigeria.

POLICY ISSUES & CONCLUDING REMARKS:

This study has examined organizational environment in relation to dynamics and performance of brewing firms with particular reference to selected breweries. Profitability of breweries has been affected by severe constraint that deserve critical examination. This calls for strategic environmental perusal so as to discover the underbelly and the attendant measures capable of addressing the constraints. This study maintains that a regime of exchange rate stability by a responsible government is capable of addressing the problems frontally and should be enforced by the government in earnest in consideration of macroeconomic variables in the country.

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