

Sweet and lethal: Nigeria's booming carbonated soft drinks industry

So, refreshing

With an average annual temperature of 27°C, many Nigerians rely on refreshing soft drinks to combat the resulting heatwave. But it is not only the heatwave that snares the consumers. Urbanization also seems to prop the increasing patronage. The sensation of carbonation, the contrasting chill of the drinks countering the hot temperature, the sugar and caffeine in the glasses all combine to give the brain the desired jolt into alertness. The advertisers are conscious of this effect and do well in reinforcing that feeling of refreshment through a series of mind manipulating ads. Thankfully, the brands are in abundance and present ample alternatives for choice making. Varieties cut across the calorie and caffeine contents spectrum. Accordingly, there are lower-calorie, no-calorie, caffeinated and caffeine-free varieties. According to Euromonitor International¹, 38.68 million litres of soft drinks were sold to Nigerians in 2016, making it the fourth-largest consumer globally. The United States, China, and Mexico with 114.75 million litres, 88.18 million litres, and 45.30 million litres respectively held the first, second, and third positions.

“Daily consumption of two glasses of sweetened carbonated drinks raises the chances of premature death by 17%”

So lethal, who cares

On the other side of the curtain appears to be so many unheeded voices screaming about the lethal effects of these refreshing drinks. For more than two decades, tons of well-respected research publications warn against the regular consumption of soft drinks. In September 2019, the JAMA International Medicine, in a paper titled “the association between soft drink consumption and mortality in 10 European countries”, pointed out that the daily consumption of two glasses of sweetened carbonated drinks raises the chances of premature death by 17%. This risk applies regardless of whether the sweetness of the drink is from either sugar or artificial sweeteners. Similarly, another publication in the Journal Circulation showed that daily 12-ounce consumption of sugar-sweetened beverages increases the risk of death by 7% as well as a 10% increase in deaths from cardiovascular disease². There are also several studies conducted in the country, indicating that many of the soft drinks produced and distributed in-country contain several dangerous chemicals and metals and lead to obesity and cardiovascular diseases. Unfortunately, many Nigerians consume between two and eight bottles a day, not minding the health consequences³.

A peep into the industry

The industry has a long history dating back to 1953 with the introduction of Coca-Cola. Currently, more than 18 manufacturing firms make up 60 brands in the fizzy segment alone. The carbonated drink market is worth \$4.8 billion and patronized by 19.2% of the population⁴. It still controls more than 40% of the entire soft drinks volume sales in the country.

The dominant players in the carbonated soft drink market include Coca-Cola, Nigeria, PepsiCo, La'casera, Rite Foods, Aje, SBC and Crown Cola. NBC leads the pack with about 20 plants and a daily sale of approximately 10 million bottles in the country⁵. Bigi appears to be the closest, but the fiercest contender. With about eight distinct flavours and a competitive price, it has given Coca-Cola a good chase. The impact of new entrants into the industry comprised the introduction of pet bottles, an increase in the average volume of most carbonated drinks to 60 CL as well as pushing the industry price benchmark to NGN1.67⁶. See Table 1.

Table 1: Prices and volumes of selected carbonated drinks

S/N	Product	Volume (cl)	Price per cl (NGN)
1	Coke	35	2.86
2	Coke (zero)	60	1.67
3	Coke	50	2.00
4	Limca Cola	60	1.67
5	Bigi Cola	60	1.67
6	Big Cola	65	1.54
7	Pepsi	60	1.67
8	Royal Crown Cola	60	1.67

Source⁷

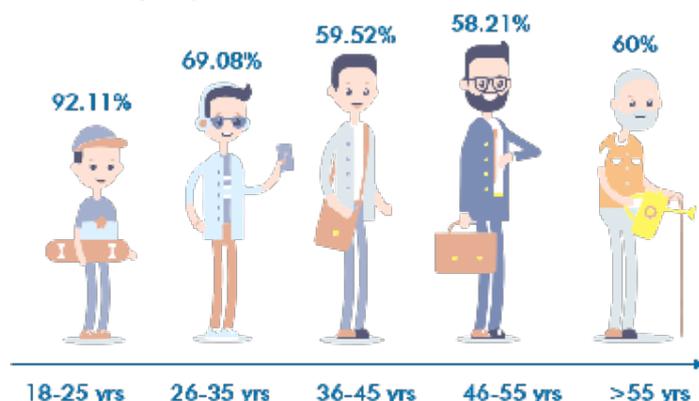
Industry growth prospects remain high. The global soft drinks market is estimated to grow at a CAGR of 6% between 2019–2023⁸. Locally, our large population with 70% youth segment, the hot climate, increasing urbanization, the innovation of more flavours as well as enhanced distribution by carbonated drink producers will continue to stretch the market frontier.

Consumption patterns

Carbonated soft drinks are popular among all Nigerians. However, it is by far more popular among the young. See figure 1, which presents the age-based consumption pattern in Sokoto state. Several other studies in other locations reveal somewhat similar consumption patterns. Accordingly, most of the reviews about carbonated soft drink patronage have, therefore, focused on adolescents and tertiary level students. Results from such studies show that 46.8% of adolescents in Lagos State con-

sume carbonated soft drinks daily⁹. It also appears that in Ogun State, 61% of undergraduates in most of its tertiary institutions consume carbonated soft drinks regularly¹⁰. In the same vein, about 60% of the students at the University of Ibadan, consume a minimum of five bottles of sweetened fizzy drinks every week¹¹. A rough average based on the findings from these studies, therefore, shows that about 65% of adolescents and youth consume carbonated soft drinks regularly.

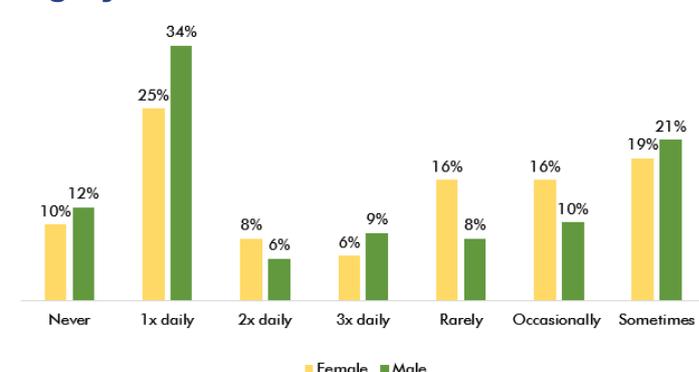
Figure 1: Consumption of carbonated soft drinks by age



Source:¹²

Similarly, a study designed to assess the consumption pattern of snacks and beverages of undergraduate students at the Bowen University, Iwo Osun State, Nigeria revealed the gender-disaggregated consumption pattern of sugary soft drinks in the University. See figure 2 below. There does not seem to be a significant difference in gender-based consumption pattern, considering the number of those who consume between one and three bottles daily. That finding is consistent with the results of a similar national cross-sectional study showing that there is no significant difference in the average daily consumption of carbonated soft drinks between male and female subjects¹³.

Figure 2: The intensity of consumption of sugary carbonated soft drinks



Source:¹⁴

Again, research-based evidence also showed that more than 80% of consumers of all age classes do not have any preferred time for the consumption of carbonated soft drinks. There is understandably

a relatively elevated level of consumption in the afternoon when the temperature is typically high. See table 2. A whopping 83.5% however, indicated that they could consume a carbonated soft drink at any time.

Table 2: Time preference for soft drink consumption

S/No	Time	Preference (%)
1.	Morning	0.5
2.	Afternoon	10.8
3.	Evening	4.4
4.	Night	0.5
5.	Anytime	83.5

Source:¹⁵

What drives the patterns?

Apart from the hot weather, several other factors strongly influence the high demand for carbonated soft drinks among the young. First is the ease of access to the drinks. Young people from topper socioeconomic backgrounds have more access to these drinks at home. Nevertheless, there are shops, stalls and hawkers virtually everywhere vending these drinks. There is scarcely any school where there are no shops selling carbonated soft drinks in Nigeria. This first-factor tie to the second, which is the purchasing ability of the consumers. Because of their relative affordability when compared with other beverages, many students and adolescents can access them. For example, it is by far cheaper to purchase a bottle of Fanta than a bottle of fresh fruit juice of the same content size.

The third factor is the advertisements and promotional efforts put by the manufacturing and distribution companies. Often, these promotions project and strongly associate the product with models such as sports and music superstars. Young people, therefore, believe that being as successful as those models may also require consuming those drinks. Fourthly, is the urbanization which positively correlates with increasing income, education, and socioeconomic status. The latter, combined with the ease of access to the drinks, influence the higher consumption rates for those in the urban areas. Fifthly, there is the taste enjoyment factor which also correlates directly with the socioeconomic status of the consumers. That is the undercurrents for the herd and bandwagon effects of consuming the drink with friends and colleagues. Finally, the consumption level also appears to be moderated by the level of awareness of the health implications. Generally, those who are health conscious tend to avoid the consumption of copious quantities of carbonated soft drinks.

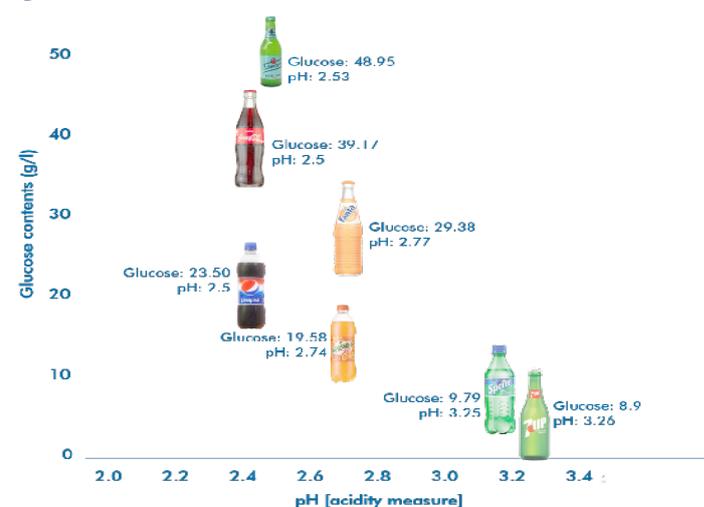
In need of healthy leaders of tomorrow

The young shall lead the future. At present, the youth makes up 70% of Nigeria's population. If between 60% and 95% of them consume mas-

sive quantities of carbonated soft drink regularly, what hope do we have for a healthy crop of tomorrow's leaders? Several studies have shown that as little as two bottles of soft drinks daily results in numerous diseases. These include obesity, diabetes, blood sugar disorders, tooth decay, osteoporosis and bone fracture, nutritional deficiencies, heart disease, food addictions and eating disorders, neurotransmitter dysfunction from chemical sweeteners, and neurological and adrenal disorders from excessive caffeine¹⁶.

Two separate studies by Bagshaw et al.¹⁷ and Ohilebo and Blessing¹⁸ that evaluated the sugar concentrations of carbonated soft drinks in Nigeria both concluded that the glucose level in the contents is within limits specified by the National Agency for Food and Drug Administration and Control [NAFDAC]. However, they warned that continued consumption could easily lead to the accumulation of glucose beyond what the body would require. The consequence could be becoming sick with certain illnesses such as diabetes as well as the hardening of blood vessels and atherosclerosis that causes issues such as kidney failure, strokes, erectile dysfunction, and the loss of vision.

Figure 3: Glucose concentrations and acidity levels of selected soft drinks



Source:¹⁹

In addition to the glucose concentration, all the soft drinks mentioned in figure 3 above are very acidic. Their pH levels exceed the required minimum. Coca-Cola and Pepsi are the most acidic, within the range of products mentioned in the table, while 7-Up is the least acidic. The study noted that the excess of acid in the human body could lead to shock, coma or death, headache; stomach upset and so on. It is the possible fatal consequences of this high level of benzoic acid interacting with vitamin C in the human body that prompted a High Court judge in Nigeria to rule that some of the products marketed under the Coca-Cola brand could be poisonous. The court also gave a fine equivalent to \$6,350 to NAFDAC for failing to ensure health standards²⁰.

Table 3: Sugar contents of selected soft drinks

S/N	Soft Drinks	Sugar content (g/100 ml)	Volume (cl)
1	Coke	3.17	60
2	Dubic malt	2.74	33
3	Fanta	2.39	60
4	Limca	0.36	60
5	Mirinda	3.62	50
6	Pepsi	3.14	60
7	Teem Bitter Lemon	3.88	50
8	Teem Soda	0.37	50
9	7up	3.55	50
10	Sprite	2.96	60

Source:²¹

Diet carbonated drinks or diet soda, with the claim that it does not contain sugar, is not better either. In place of sugar, most of them include the artificial sweetener aspartame. A recent study shows that drinking one 12-oz volume of diet soda every day raises the risk of leukaemia by 42% in both men and women and creates a 102% higher risk of multiple myeloma for men²².

Which is better? Carbonated soft drink or cigarette?

Scientific evidence now shows that consuming a bottle of carbonated soft drink is as bad as cigarette addiction. The deadly consequences rank *Pari passu*. Both orchestrate rapid ageing at an astonishing rate of 4.6 years of cellular level ageing²³. Although there appears to be no reliable domestic statistical evidence of their dastard health impacts, robust scientific studies across the globe attesting to them are many. These sugary drinks kill from all fours.

Similarly, cigarette smoking causes cancer and depletes life as well. But there are ample regulatory concerns over the devastating effects of cigarette smoking globally and within the country. Nevertheless, it does not seem as if we have yet woken up to the reality of the potential harm that sugary carbonated drinks pose on the well-being of today's youth.

Attempted suicide or deferred suicide?

The preceding discussion evidence that more Nigerians than we could have imagined have died on account of their wrong consumption choices. For more than 50% of the consumers who know the consequences of their actions, this could pass for suicides. The 2016 Global Health Observatory data repository by the World Health Organization estimated that there were about 9.5 suicides per 100,000 Ni-

gerians²⁴. This number, however, does not include the apparent large-scale suicide attempts in the elevated level of addictive consumption of carbonated soft drinks. Secondly, a good question could be, beyond what level of consumption would it be a projected suicide attempt which should attract the attention of the law?

Time to reconstitute the drinks

In 2013, in Argentina, Coca-Cola life was launched. It was an all-natural, low-calorie soda packaged in a recyclable plant-based bottle. Its constitution was a mixture of sugar and stevia-based substitute which has two times fewer calories than regular Coke²⁵. Although there were several questions concerning the type of sugar included in the product, it was, nevertheless, a step in the direction of saving millions of consumers from harm. The innovation expected from the firms manufacturing these products is to replace their high fructose and acid contents with more acceptable organic or harmless substitutes while not substantially compromising on the taste. That gap has given strength to the emergence of many healthy drink options such as 'zobo' and 'kunu' that is produced mainly by roadside vendors and whose production integrity is questionable and under-monitored.

Finally,

It is unarguable that carbonated soft drinks can be quite refreshing. However, like everything in life, moderation in their consumption is the key to escaping its deadly wrath. Ample scientific facts support the global claims that their chemical constituents threaten our health and lives. Even the Nigerian court communicated that much. It is even worse when we consider that many of these threats are focused on the young. Compared with cigarette smoking, soft drinks are no better. They are not even better than other hard narcotic substances. Unfortunately, while these other substances enjoy substantial regulatory control, carbonated soft drinks that induce prospective suicide does not suffer any measure of regulatory restriction.

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