Impact of the COVID-19 Pandemic on the Performance of Selected Bakeries in Abuja, Nigeria

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Abstract:
The food industry's role in developing any economy cannot be over-emphasized due to the significant investment of disposable income into the sector. However, the sudden emergence of the COVID-19 pandemic attracted global attention and significantly disrupted many countries' economic sectors. The study determined the production pattern of the Bakeries in Abuja and further assessed the impact of the COVID-19 pandemic on Bakery performance in Abuja.
The study covers only staff selected from twenty (20) bakeries in Abuja using a multistage sampling technique. The first stage involved the selection of twenty (20) bakeries extracted from the listing of master baker's association of Abuja using a purposive sampling technique. The second stage is the selection of ten (10) staff from each selected bakery in the study area using a simple random sampling technique, thus, making a total of 200 respondents to participate in the study. Data were obtained using a set of questionnaires along with interviews. Secondary data were sourced from the internet, libraries, Journals and reports. Data obtained were analysed using frequency counts, percentages, mean ratings, and Analysis of variance (ANOVA).
The study revealed that Bakeries made nine (9) distinct aggregate products in Abuja. These comprise a combination of butter-filled Bread, Chocolate Bread, Wheat Bread, and Low-fat Bread. These products were indicated to be produced always by the bakeries. Finally, the analysis showed that there is a statistically significant (P<0.05) difference in the variation between the mean rating of Increase in sales volume (2.82), Increase in customer satisfaction (3.38), Increase in customer loyalty (3.49) and Customer buying decision (3.45). The study further shows that there is a statistically significant (P<0.05) difference in the variation between the mean rating of the Bread distribution (2.98).
The study concludes that the COVID-19 pandemic lockdown significantly impacted the performance of bakeries in Abuja and recommends that the adopted quality of products be sustained to enhance this performance.

Keywords: Performance, food industry, Abuja bakeries, COVID-19 pandemic

1. Introduction

Despite significant market potential, Nigeria's food processing sector needs help to gain momentum. The Nigerian population has been estimated to grow from over 200 million to over 300 million people in the next three decades, thereby setting the nation on a path to becoming the fourth or fifth most populous nation on earth. This continuous population growth will significantly impact staple foods like flour-based products like bread.

Nigeria currently relies on imported goods to satisfy its demand for high-quality processed foods. The bakery industry in Nigeria is anticipated to experience significant growth due to rising consumption of to-go or fast-food products due to the high hustle and bustle of the cities. The demand for bakery products will also increase in the next few years due to the high fibre and its health benefits.

Bread holds significant importance in Nigeria for several reasons. As a staple food, it plays a vital role in the Nigerian diet (Edema et al., 2005). Notably, it is the second most consumed non-indigenous food item in the country, following rice (Ijah et al., 2014). Every household in Nigeria consumes bread (Yusuf, 2020). Bread is a universally consumed food item in Nigeria, cutting across all demographic boundaries. Regardless of gender, age, tribe, social class, or household, bread is a staple on every table. Its diverse forms, sizes, flavours, and prices cater to its vast consumer base's varied needs and preferences (Ewa, 2018).

The agriculture sector in Nigeria experienced the most significant impact from the COVID-19 lockdown and border closures (Abdul, 2020). The restrictions on cross-border transportation of essential food items created challenges for producers and consumers, disrupting the supply chain and affecting the availability of crucial food supplies. The lockdown created challenging times for the baking industry because the delays in importing and exporting raw materials and local distribution of finished products led to increased production costs.

Some of the fundamental ways that COVID-19 affected the baking industry include, but are not limited to, delays in the distribution of pastry products, low consumer patronage, increased cost of production, business closures, low production rate, and low availability of raw materials.

Studies showed that bakers in Nigeria have been apprehensive about the increasing cost of the commodities used in bread and confectioneries following the closure of the borders to curb the spread of the coronavirus pandemic. Indeed, the border closures, travel restrictions, quarantines, and suspended flight operations all combined to lead to disruptions in the market supply chain, trade and labour shortages, ultimately disrupting the food supply and costs.

Studies further revealed that the demand and consumption of flour-based products like Bread, Pasta, noodles, etc, rose astronomically during the pandemic. Bakery outfits in Abuja were grossly affected by the global pandemic (COVID-19) that ravaged the entire world.

More than two years after COVID-19, people have yet to recover from its impact on their livelihood, particularly in the baking industry in Nigeria and other parts of the world. This has resulted in a rapid increase in the production and consumption cost of all flour-related products, with their prices gearing to nearly double.

The far-reaching impact of the COVID-19 pandemic is widely recognised, with numerous industries affected worldwide. Among those severely impacted were bakeries, which faced significant challenges in the aftermath of the pandemic. However, this perceived missing link is yet to be fully explored through necessary empirical research in Nigeria. Therefore, this study is designed to assess the impact of the COVID-19 pandemic on the performance of selected bakeries in Abuja. It is this gap in research that this study intends to fill to extend the frontiers of knowledge in bakery management.

2. Literature Review

2.1. Origin of COVID-19

The COVID-19 pandemic, which originated in Wuhan, China, in December 2019 (Bhattacharjee, 2020), rapidly spread beyond China's borders. By January 22nd, 2020, infected travellers had carried the virus to other Chinese provinces and multiple countries (Luo et al., 2020). On February 11, 2020, the World Health Organization (WHO) declared the virus, known as "Severe Acute Respiratory Syndrome Coronavirus 2" (SARS-CoV-2), a global health emergency and officially named the disease it caused "Coronavirus" (COVID-19) (Bhattacharjee, 2020; WHO, 2020). This marked a significant milestone in the pandemic's response, recognising the outbreak's severity and the need for international cooperation to combat its spread. In March 2020, the World Health Organization (WHO) officially declared the COVID-19 outbreak a global pandemic (Jebril, 2020), as the virus had rapidly spread to approximately 143 countries (WHO, 2020). This designation acknowledged the unprecedented scale and severity of the crisis, prompting a coordinated international response to combat the virus.

In the wake of COVID-19-induced movement restrictions, many citizens decided to shop for dry food items that had longer shelf lives than pastries and could be spoilt within shorter periods. The scarcity and inflation in the cost of raw materials resulted in increased production costs and made it difficult for pastry business owners to break through easily.

The pandemic's far-reaching impact led to widespread job losses, with many companies forced to downsize their workforce while others had to reduce operating hours (Edgecliffe-Johnson, 2020). The crisis also triggered a global socio-economic upheaval, resulting in the cancellation or postponement of various events, including sports, religious, political, and cultural gatherings, and widespread shortages of essential supplies (Turner & Akinremi, 2020). The COVID-19 pandemic has profoundly impacted global trade and commerce, with China's dual challenges of reduced consumption and production disruptions rippling worldwide, affecting businesses globally (Fernades, 2020). In Nigeria, the pandemic's effects have been equally devastating, forcing numerous firms to shut down and causing widespread disruption across various industrial sectors, with far-reaching consequences for the nation's economy. The retail and branding industries are grappling with numerous short-term challenges, including workforce management, health and safety concerns, cash flow disruptions, supply chain disruptions, fluctuating consumer demand, sales declines, and marketing obstacles. In Abuja, many small bakeries have been forced to close their doors, while online platforms have experienced unprecedented growth in shopping, communication, and entertainment (Donthum & Gustafsson, 2020). This shift to digital spaces has transformed how businesses interact with customers and accelerated the adoption of e-commerce solutions.

Regrettably, the selected bakeries in Abuja were part of the receiving end. According to UNESCO, an estimated 1.725 million businesses have been affected due to the lockdown as of April 13th, 2020. On March 18, 2020, the United Nations Educational, Scientific and Cultural Organization (UNESCO) reported that approximately half of the global population was affected by COVID-19, as 107 countries had implemented nationwide business closures, drastically

altering the lives of billions worldwide (UNESCO, 2020). It is evident from the above that business closures arising from the COVID-19 pandemic have affected SMEs, as differences were noticed between scores of bakeries in Abuja and those that were not. It also negatively affects consumers' access to baking products, affecting overall economic growth.

The pandemic affected the baking business in Nigeria. Industries, local businesses, shopping malls, shops, stores, supermarkets, and non-essential markets were compelled to close due to the government's protective and preventive measures to contain the virus's spread. This global shock made it impossible for most enterprises to maintain their cash flow during the lockup phase due to low sales and broad financial system instability.

2.2. Theoretical Review

Craighead, Ketchen, and Darby (2020) propose various theoretical frameworks to enhance understanding of supply chain dynamics, enabling managers and scholars to reexamine and prepare for future pandemics. Their work delves into ten theoretical perspectives: fundamental options theory, event systems theory, and resource dependency theory. This review, however, concentrates on two specific theories: prospect theory and game theory, both of which provide valuable insights for supply chain managers to mitigate the effects of future pandemics.

2.2.1. Prospect theory

Prospect theory, developed by Tversky and Kahneman (1992), offers valuable insights into decision-making under uncertainty, making it particularly relevant in pandemic situations. According to this theory, framing a problem significantly influences actors' decisions. Positive framing leads to more cautious choices, while negative framing can result in riskier decisions (Craighead et al., 2020). This understanding can inform strategic communication and risk management strategies during pandemics. The media's sensational or inflammatory coverage of COVID-19 news can amplify negativity and risk perception, whereas downplaying risks in some countries can have the opposite effect (Radu, 2020). Prospect theory provides a valuable framework for predicting how managers will respond to pandemic-related situations, depending on how the information is framed and presented. By understanding these dynamics, organisations can develop effective communication strategies to mitigate risk and inform decision-making during public health crises.

2.2.2. Game Theory

As VonNeumann and Morgenstern (1944) introduced, game theory is a framework for predicting the behaviour of interacting actors based on a set of rules. It initially assumes that actors make selfish decisions in single encounters but reveals that repeated interactions lead to cooperative behaviour, as actors recognise that selfish actions may trigger future retaliation (Bo, 2005). Game theory has been successfully applied across diverse domains, including Technology adoption (Zhu & Weyant, 2003), Distribution channel decisions (Xia et al., 2017) and Optimal pricing and production quantities (Cao & Fang, 2019). In the context of pandemics, game theory offers valuable insights, suggesting that competing firms are likely to cooperate due to the high cost of defection, as highlighted by Craighead, Ketchen, and Darby (2020). This understanding can inform strategic decision-making and facilitate collaboration during public health crises, ultimately promoting collective resilience and mitigating the impact of pandemics.

2.3. Empirical Review

According to Xu and Abbasov (2021), as of March 18, 2020, 107 countries had enforced nationwide school closures in response to the COVID-19 pandemic, highlighting the unprecedented global measures taken to mitigate the spread of the virus. According to UNESCO, about 35.9 million businesses are currently off the market due to the lockdown. The COVID-19 pandemic has devastated small and medium-sized enterprises (SMEs), affecting approximately 25.6 million businesses. Alarmingly, around 87% of these (23.5 million) have been forced to cease operations, driving the urgent need for support and recovery strategies to mitigate the economic fallout. The impact of the COVID-19 pandemic on small and medium-sized enterprises (SMEs) has been drastic, with approximately 10.3 million business owners forced to halt operations due to closures. A significant proportion, around 81% (8.4 million), is micro, small, and medium-sized enterprises (MSMEs). The pandemic has led to widespread closures of businesses, including bakery businesses, not only in Nigeria but globally, to contain the spread of the virus and minimise fatalities.

Simon and Hans (2020) noted that the global lockdown of businesses would lead to significant and unequal disruptions in countries, including Major interruptions in internal assessments and Cancellation of public assessments for qualifications, replaced by inferior alternatives. Carlsson et al. (2015) investigated the impact of COVID-19 on small businesses in Sweden, exploiting variations in the number of days available for production. They found that even a short period of production increased scores on tests of digital skills (crystallised intelligence) by 1% of a standard deviation, demonstrating a positive causal effect of COVID-19 on performance.

Enesi and Ibrahim (2021) conducted a study on the impact of the COVID-19 pandemic on the performance of Small and Medium-sized Enterprises (SMEs) in Abuja, Nigeria. Their research aimed to provide recommendations for SMEs to enhance their performance during the economic downturn and navigate the challenges posed by the pandemic. The study focused on 10 Abuja Municipal Area Council SMEs, gathering insights from 100 respondents. The findings revealed that the COVID-19 pandemic had significant effects on SMEs, including reduced revenue and income generation, Loss of skilled employees due to salary reductions, Decreased patronage and Perceived lack of government effort to mitigate the pandemic's impact. The study's insights can inform strategies for SMEs to adapt and thrive in adversity. However, the different studies did not assess the impact of the COVID-19 pandemic on bakeries in Abuja, hence this study.

3. Research Methods

This research utilised a multistage sampling technique to select participants. In the first stage, twenty (20) bakeries were selected from the listing of the Master Baker's Association of Abuja using a purposive sampling technique. Next, ten (10) staff members from each of the selected bakeries were chosen using simple random sampling, resulting in 200 respondents. Data collection employed a combination of questionnaires and interviews to gather information on production patterns during the COVID-19 pandemic from the selected staff. Additionally, the internet, library, journals, and reports were used as sources for secondary data. The collected data were analysed using percentages, frequency counts, mean ratings, and Analysis of Variance (ANOVA) to uncover insights and trends.

4. Results and Discussion

Table 1 shows that 137 complete survey responses, representing 68.5% of the expected 200 respondents, were used for the study, supplemented by interviews. According to Gendall (2000), a 60% or higher response rate is considered satisfactory, and a 50% response rate is the minimum acceptable threshold for survey research. This view is supported by Nulty (2008), Net (2009), and Schmid et al. (2012), who argued that while a 60% response rate is desirable, a 50% response rate is acceptable. Therefore, this study's 68.5% response rate exceeds the minimum threshold, making it a reliable and acceptable outcome.

	Distributed	Returned (%)
Bakeries	200	137 (68.5)
Total	200	137 (68.5)

Table 1: Statistics of Respondents
Note: The Figures in Parentheses Represent the Row Percentages

4.1. Production Pattern of Bakeries in Abuja

Table 2 shows the status of the bakeries during the pandemic lockdown. Many (89%) respondents indicated that they continued bread production during the COVID-19 pandemic lockdown, while 11% indicated that they shut down production. Additional insights from the interviews revealed that, despite the federal government's directive to reopen food processing centres, including bakeries, to ensure food supply to citizens, the lockdown declaration by the Nigerian president still restricted movement for bakery employees. This restriction likely impacted the bakeries that were not in operation during the lockdown, emphasising the challenges faced by the industry in maintaining operations during the pandemic.

	Number(n)	Percentage (%)
No, we stopped the operation	15	10.9
Yes, we produce bread	122	89.1
	137	*100*

Table 2: Production Pattern during COVID-19 Pandemic Lockdown

According to table 3, a significant proportion of respondents (28.5%) reported increasing their production of Butter-filled Bread in their Abuja-based bakeries during the COVID-19 pandemic, indicating a shift in consumer demand or a strategic business decision to focus on this product line during the crisis. While 17% of the respondents indicated producing a combination of Butter filled Bread and Wheat Bread more during the COVID-19 pandemic in bakeries in Abuja, 15% as well as 13% indicated producing filled Bread, Wheat Bread, Low-fat Bread, Butter-filled Bread, Chocolate Bread, Wheat Bread, respectively. Only 4.4% of respondents indicated they would produce wheat and low-fat bread more during the COVID-19 pandemic in bakeries in Abuja. This suggests that Butter-filled Bread was in high demand during the pandemic lockdown, increasing production in Abuja's bakeries. Additionally, interviews revealed that other speciality bread types were only produced upon special request, with customers placing pre-orders, indicating a shift towards customised and pre-ordered products during the pandemic.

Product Made by Bakeries	Number(n)	Percentage (%)
1. Butter filled Bread, Chocolate Bread	9	6.6
2. Butter filled Bread, Chocolate Bread, Wheat Bread, Low-fat Bread	17	12.4
3. Butter filled Bread, Chocolate Bread, Wheat Bread	18	13.1
4. Butter filled Bread, Low-fat Bread	2	1.5
5. Butter-filled Bread	39	28.5
6. Butter filled Bread, Wheat Bread, Low-fat Bread	21	15.3
7. Butter filled Bread, Wheat Bread	24	17.5
8. Wheat Bread, Low-fat Bread	6	4.4
9. Others	1	0.7
Total	137	100

Table 3: Aggregates of Products Made by Bakeries

Table 4 highlights the production patterns of bakery products during the COVID-19 pandemic. The results show that Butter-filled Bread was consistently produced by most bakeries (53.3%) in Abuja throughout the pandemic, and Chocolate Bread, on the other hand, was not produced by most bakeries (57%). However, a small percentage (10%) continued to produce it consistently during the pandemic. These findings suggest that bakeries in Abuja prioritised the production of butter-filled bread to meet consumer demand during the pandemic. In contrast, chocolate bread was less in demand and was considered a non-essential product. However, many (31.4%) respondents indicated not producing Wheat Bread, while 15% indicated consistently producing Wheat Bread during the COVID-19 pandemic. Low-fat Bread was revealed as not produced (52%) even when 7% of the respondents indicated consistently producing Low-fat Bread during the COVID-19 pandemic. This suggests that Butter-filled Bread was produced in larger quantities due to its high demand during the pandemic, unlike speciality bread like Chocolate Bread, Wheat Bread, and Low-fat Bread, which cater to specific consumer preferences and were likely less in demand in Abuja. The prioritisation of Butter-filled Bread production indicates a shift towards meeting the basic needs of the majority rather than catering to niche markets.

Type of Bread Produced	Always Producing (5)	Frequently Produced (4)	Moderately Produced (3)	Rarely Produced (2)	Not Produced (1)
a. Butter-filled Bread	73 (53.3)	19(13.9)	22 (16.1)	2(1.5)	21(15.3)
b. Chocolate Bread	14(10.2)	22(16.1)	15(10.9)	8(5.8)	78(56.9)
c. Wheat Bread	20(14.6)	27(19.7)	33(24.1)	14(10.2)	43(31.4)
d. Low-fat Bread	9(6.6)	17(12.4)	20(14.6)	20(14.6)	71(51.8)

Table 4: Production Pattern of Bread Produced During the COVID-19 Pandemic
Key: 5 – Always Producing, 4 – Frequently Produced, 3 – Moderately
Produced, 2 – Rarely Produced, 1 – Not Produced
Note: Parentheses Figures Represent Row Percentages

4.2. Impact of COVID-19 Pandemic on Bakery Performance in Abuja

Table 5 reveals a statistically significant difference ($P < 0.05$) in the mean rating of increase in sales volume, with a mean rating of 2.82. This indicates that the increase in sales volume was significant and not due to chance, suggesting a positive impact on business performance during the pandemic. This means there is an increase in the sales volume of bread by bakeries in Abuja during the COVID-19 pandemic lockdown.

Table 5 further emphasises that there is a statistically significant difference ($P<0.05$) between the means of the Increase in customer satisfaction (3.38), Increase in customer loyalty (3.49) and Customer buying decision (3.45). This shows increased customer satisfaction, loyalty, and buying decisions for bread during the COVID-19 pandemic lockdown.

Performance	Mean	P-Value
Increase in sales volume	2.82	0.00
Increase in customer satisfaction	3.38	0.00
Increase in customer loyalty	3.49	0.00
Customer buying decision.	3.45	0.00
Bread distribution	2.98	0.00

Table 5: Analysis of the Impact of the COVID-19 Pandemic on Bakery Performance

Table 5 also shows a statistically significant difference ($P < 0.05$) in the mean rating of bread distribution (2.98) during the COVID-19 pandemic lockdown. This suggests that the pandemic positively impacted the performance of bakeries, with a significant increase in bread distribution, indicating a well-managed supply chain and effective distribution strategies despite the challenging circumstances.

5. Conclusion

In conclusion, this study finds that the COVID-19 pandemic lockdown positively and significantly impacted the performance of bakeries in Abuja. Adopting quality products during this period is a critical factor in this success. Therefore, it is recommended that bakeries in Abuja sustain their focus on quality products to enhance their performance further and maintain a competitive edge in the market.

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