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# Marketing Management Challenges of Locally Produced Rice Amidst Covid-19 Provocations: Nigerian Perspective

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## Abstract

Many countries across the globe witnessed the challenges caused by COVID-19 Pandemic and Nigeria is not an exception as many economic activities were crippled. In Anambra State, many people died as a result of

this catastrophe, and many sectors were economically affected, including agricultural and manufacturing industries. Accordingly, this study examined the effect of COVID-19 on the marketability of rice produced in Nigeria using Anambra State as a reference point. Specifically, the study investigated the effect of high price of rice, movement restriction, market closure, and high transportation costs on the marketability of locally produced rice. The survey research method was adopted and while the target population is 1798, the sample size is 327. The data source is primary and a structured questionnaire was administered to the respondents for data collection. The reliability value of 0.7939 established the internal consistency of the measuring instrument. However, multiple regression analysis statistical tool was used to test the hypotheses at a 5% significance level. The findings revealed that high price of rice, movement restriction, market closure, and high transportation costs had significant and negative effects on the marketability of locally produced rice in Anambra State. Thus, the COVID-19 pandemic has a significant and negative effect on the marketability of locally-produced rice. Thus, the government should provide an enabling environment to encourage rice producers to transition into digital marketing channels to minimize the negative effects of COVID-19 and other unpredictable future pandemic business provocations.

**Keywords:** movement restriction, market closure, price of rice, transportation cost, Anambra State.

JEL Classification: Q13, I15, P22, L91

## Introduction

COVID-19 was not only a disaster for the human race, it was an albatross that wreaked the global economy by plunging it into a sudden recession. The strength of every economy lies in its ability to key into the industrial revolution, hence emancipating itself from scientific and technological dependence. By so doing, an economy will begin to produce most of all the products and services it consumes, and embark on massive exportation, thus improving its economic growth and development. In other words, self-sufficiency enriches a nation's gross domestic product (GDP). Therefore, any developing country seeking to achieve economic growth should endeavor to reduce importation to the barest minimum by utilizing local resources to energize its industries. However, as society undergoes rapid socio-economic, political, cultural, technological, and environmental adjustments due to the COVID-19 pandemic, consumers are currently spending a greater part of their income in diverse ways that are quite different from what was obtainable in the years before COVID-19. Manufacturers of locally made goods who compete with imported ones have to devise

strategies to maintain a competitive advantage, especially with the challenges on importation due to the COVID-19 disruptions and rise in dollar exchange that has made foreign products more expensive.

Since the ban on the importation of rice and other agricultural products from abroad, it has dawned on Nigeria to embark on massive diversification and industrialization if it wants to survive as a nation. This means that concerted efforts must be made to increase production capacity so that made-in Nigerian products would be acceptable by Nigerians, as well as other countries around the world. Products manufactured in Nigeria are referred to as made-in-Nigeria products (Akter, 2020) or locally-made products. Typically, many rice-producing firms were affected during the COVID-19 lockdown (Ozili, 2020). During the COVID-19 lockdown, many industries, including local ones in Nigeria suffered from supply chain disruptions which resulted in an economic meltdown (Musa & Ali, 2023; Eferakeya et al., 2023). Consequently, consumers who ordinarily depended on foreign-made products began to patronize home-made products, given that they are quality products as well, and are readily affordable and available.

On a larger scale, certain precautionary measures were put in place to curtail the impact of COVID-19, to circumvent its devastating effect on human lives, though; they eventually disrupted the supply chain of food production (including rice) in Nigeria. Lockdown or movement restrictions, social distancing, market closure, or market shutdown, resulted in high transportation costs and high prices of locally produced rice in Nigeria (Ozili & Arun, 2020). Overtly, these government's enforced measures on COVID-19 caused a lot of panic and posed lots of challenges to local rice production and its marketability in the country. Undoubtedly, COVID-19 movement restrictions by the federal government led to job losses and unemployment, lack and high cost of farm inputs, the eventual high price of local rice in many parts of the country (Abba et al., 2023), hunger, and poverty.

Furthermore, many studies have been conducted on COVID-19 from divergent perspectives. From the social sciences domain, the socio-economic impact of the pandemic on the Nigerian economy has been extensively discussed. Nonetheless, there is a paucity of research on the effect of COVID-19 pandemic with respect to the marketability of locally-produced rice in Nigeria (Fabeil et al., 2020). Against this backdrop, the study identified and filled the literature gap by offering an invaluable contribution to the marketing challenges of locally produced rice amidst COVID-19 provocations in Nigeria.

## Hypotheses Development

The following null hypotheses are formulated to guide this study:

**$Ho_1$:** High price of rice has no significant effect on marketability of locally produced rice in Anambra State of Nigeria.

**$Ho_2$.** Movement restriction has no significant effect on the marketability of locally produced rice in Anambra State of Nigeria.

**$Ho_3$.** Market closure has no significant effect on the marketability of locally produced rice in Anambra State of Nigeria.

**$Ho_4$:** High transportation cost does not significantly affect the marketability of locally produced rice in Anambra State of Nigeria.

## Review of Related Literature

### Rice Production in Nigeria and COVID-19 Pandemic

COVID-19, popularly known as Coronavirus is an infectious disease that was first discovered in Wuhan China (Liu et, 2020), where it rapidly spread across the globe and wreaked uncontrollable havoc. It is highly infectious (Shereen et al., 2020), given that it infects human beings and animals alike and causes different types of respiratory sicknesses. The signs of the infection include running nose, sneezing, coughing, fever, sore throat, breathing disorder, etc. (Harapan et al., 2020). At the onset, many people who were infected with the virus experienced serious respiratory disorder and there was no efficacious treatment for victims at that time. Thus, most of the initial victims died. Sadly, the elderly and those with pre-existing conditions such as hypertension, mental disorder, heart disease, gastrointestinal disease, asthma, diabetes, epilepsy, HIV/AIDS, autoimmune disease, kidney disease, stroke, thyroid disease, etc., were worse hit by COVID-19.

In addition, individuals contracted the virus via droplets of fluid from the nose or mouth of an infected person (Harapan et al., 2020), leading to certain measures such as lockdowns, social distancing, and quarantine being put in place by the government. Also, observation of simple hygiene which included washing hands regularly with soap or sanitizer, wearing facemasks, wearing hand gloves, etc., were equally observed during the period (Ohia et al., 2020). Overtly, COVID-19 devastated the health, social, and economic sectors of the world. It led to global economic recession, as evident in both developed and developing nations (McKibbin & Fernando, 2023; Wang et al., 2021). At both national and international levels, it caused a lot of disruptions to the global supply chain (Ewuzie et al., 2023). To cushion the effect of Nigeria's economic woes and to urgently facilitate the improvement of public health response, the World Bank during COVID-19 designated $82 million to Nigeria (Usman et al., 2021).

However, rice production contributes immensely to job creation, wealth, and GDP. Ujah et al. (2021) noted that "rice is the second most important staple food with average caloric intake and household expenses accounting for 10.5% and 6% respectively." Unfortunately, rice production in Nigeria is dominated by smallholder farmers who farm small hectares of land using the orthodox method (Adewuyi & Amurtiya, 2021). As a result of this peasant method of growing rice, low yields are

experienced yearly, thus widening the gap between demand and supply. Indeed, Adewuyi and Amurtiya (2021) observed that increased importation of rice is consequent to the fallen demand in the nation's rice production. According to them, unless rice production is escalated, the country's economy will continue to be battered by trade imbalance.

Interestingly, the federal government of Nigeria in the 2006 presidential initiative on accelerated rice production, initiated policies and gave incentives to farmers to increase the production of local rice (Akinniran & Faleye, 2020). This policy formulation and implementation was aimed at reducing the importation of foreign-produced rice while focusing on boosting the production of locally produced rice in Nigeria. Akinniran and Faleye (2020) argued that what is pivotal in achieving self-sufficiency is the production of quality rice that can compete with foreign-produced rice; not just about producing millions of tons of rice paddy. They admonished that if Nigeria must be self-sufficient in rice production, it must seek a rice processing technology that is sustainable for its rice farmers.

Furthermore, the capacity of rice production and distribution was undermined by the COVID-19 pandemic (Esiobu, 2020). In Nigeria's South East, Esiobu (2020) debated that transport restrictions during COVID-19 made it tough for rice farmers to order and take supplies of farm inputs during the planting season. In agreement with this, Maikasuwa et al. (2023) posited that many local rice farmers lacked access to markets to purchase their farm inputs or even sell their already produced products due to COVID-19. In their study, it was revealed that the quantity of farm inputs accessible to rice farmers for production reduced drastically.

**The Socio-Economic Woes of COVID19 to the Nation's Economy**

COVID-19 is the key indicator of Nigeria's economic woes as the Nigerian economy experienced a decline in supply chain disruptions, academic calendar disruptions, travel disruptions, macroeconomic data collection difficulties, and GDP (Usman et al., 2024). Consistent with this, Yanusa et al. (2020) and Amusan and Agunyai (2021) elaborated that all the restrictive measures put in place to avoid human contact during COVID-19 led to a downturn in economic activities. In line with this, Ozili (2020) specifically mentioned that COVID-19 stultified economic activities, having disrupted the operations of financial institutions, civil service jobs, event outings, and other businesses. Emphatically, nothing could have been as dreaded and deadly as COVID-19, having killed millions of people across the universe (Feyisa & Yitayaw, 2022). Although not only was the health sector devastated, the economic sector also saw unquantifiable devastation. Billions of dollars were spent on research, drugs, and manufacture of COVID-19 vaccine, as the world battled to save not only people's lives but the life of the world's economy. Indeed, COVID-19 shattered Nigeria's economy the more, despite its ailing or inflationary disequilibrium before the pandemic (Joab-Peterside, 2021).

In Nigeria, about $373.5 billion was lost to social distancing as many job losses were recorded, crude oil prices dropped to a record high, and economic activities generated from public and private sector revenues got stymied (Joab-Peterside, 2021). For several months during COVID-19, many hospitality businesses were shut down and many social gatherings that generate revenue were equally halted (Ataide et al., 2021). Ataide et al. (2021: 44) stated that "the pandemic has negatively affected various sectors of the economy, such as education, banking, manufacturing, sports, agricultural, aviation, transportation, and hospitality." Similarly, Joab-Peterside (2021) noted that the Lagos economy suffered irrecoverably as 1,032 registered businesses suddenly crashed because of mandatory business closure and movement restrictions. In addition, Yanusa et al. (2020) found that Nigerian economic activities were truncated as prices of goods and services soared uncontrollably, customer patronage dramatically dwindled, and consequently, many businessmen and women who operated retail and wholesale shops were adversely affected.

**COVID-19 Agricultural and Food Challenges**

The outbreak of COVID-19 widely affected agro-products and disrupted food supply chains all over the world (Memon & Lohana, 2021) leading to protracted food insecurity. Lagiso (2020) exclaimed that it aggravated food insecurity in Ethiopia. During COVID-19, the distribution of farm inputs was highly restricted, there was decrease in food production, especially vegetables, and this badly affected food security in Nigeria one of the countries that the consumption of vegetable is far below the standard recommended by the World Health Organization (WHO) (Yegbemey et al., 2021). Factually, the agricultural activities of rural farmers were severely devastated due to measures adopted by the federal government of Nigeria such as movement restrictions, social distancing, lockdown, etc. This caused a lot of difficulties to farmers and deprived them the ability to access farm inputs, access to markets, gain information about agronomics, thus resulting in hike in transportation cost, increased cost of agricultural inputs, and decay of harvested produce that eventually led to food insecurity in the land (Balogun, 2020). Underlining this, Vos et al. (2020) remarked COVID-19 and its fallouts truly threatened food security of billions of people across the globe. For instance, poultry farmers in Nigeria suffered severe losses as a result of the imposition of certain control measures by the government (Abiola et al., 2020). According to them, as many businesses closed down due to lockdown, the Nigerian agricultural sector became highly uncompetitive because of supply chain disruptions, leading to the escalation of the poverty rate. Consequently, there was heavy decline in trade of agricultural produce as witnessed through high transport costs, decline in fewer customer patronage and poor sales volume (Bitzer et al., 2024; Nchanji et al., 2021; Ogada et al., 2021).

Devereux et al. (2020) narrated that people's restriction from visiting their farms and closure of food businesses were the direct impact of COVID-19. While the indirect impact according to Nchanji et al. (2021:2) were "lockdown, border closures, social

distancing, and restricted transportation and movement imposed by governments to minimize the spread of the virus and loss of life." Abebe et al. (2022) in their study revealed that majority of the farmers sampled responded that COVID-19 was a nightmare to agricultural production as their produce such as milk, fruits, and vegetables recorded a lot of wastages. In Nigeria, Awoyomi et al. (2022) found that livestock farmers across Abia, Ekiti, Enugu, FCT, Kaduna, Kwara, Lagos, Ogun, Ondo, Osun, Oyo, and Sokoto suffered from lack of fund, inability to restock their farms, high transport costs, and inability to market their livestock during COVID-19. Awoyomi et al. (2022) also observed that some farmers reduced the quantity and quality of their livestock feeds, stopped paying their workers' salaries, and even reduced the number of workers.

## COVID-19 Marketing Challenges

### High Price of Local Rice

Price is the value a consumer attaches to the purchase of a product (Nebo et al., 2020). According to them, it is the consideration made in exchange for a commodity. Schmidt et al. (2021) reported that during COVID-19, the global price of rice rose by 25%. In Nigeria comparably, it rose to 66.6% (Nicholas-Okpara et al., 2023). Okolo (2021) claimed that farmers usually charge higher prices to recover the cost of logistics. In Katagum, Jama'are, and Zaki local governments of Borno State, Abba et al. (2023) found that one of the major physio-economic problems suffered by the people during COVID-19 was the high increase in the price of rice. However, during COVID-19, the unavailability of food caused by the reduction of imports due to the closure of borders and increasing demand gave rise to increases in the price of locally produced rice in Nigeria (Agbugba et al., 2021; Anene & Iyala, 2021). It was observed that the price of rice in the first quarter of 2020 skyrocketed significantly to about 62% (Idakwo et al., 2022). Omotayo et al. (2022) claimed that the spike in the price of rice during COVID-19 was due to a lot of disruptions in the supply chain. Ewuzie et al. (2023) in their study extensively offered some robust highlights on supply chain disruptions, resilience, and robustness. Also, Idakwo et al (2022) argued that food supply chain disruption was marred by the government's imposition of lockdown and social distancing to curtail the impact and spread of COVID-19. Elaborating further, Munonye et al. (2022) in their study, compared the hike in the price of rise and found that the price of cereals such as rice, millet, maize, etc., was higher during the COVID-19, than before its occurrence. Similarly, the study conducted by Iheme et al. (2022) indicated that the price of rice and other commodities soared in Nigeria during and after COVID-19. Underpinning this statement, Lasisi (2023) retorted that consequent to restricted movement of people and commodities, marketers unilaterally increased the prices of bread, rice, yam, meat, fish, etc.

## Movement Restriction

The Study conducted by Momoh and Evbayiro (2022) revealed that movement restrictions consequent to COVID-19 had a negative effect on the performance of SMEs in Benin City. Similarly, Abideen (2020) revealed that the relationship between COVID-19 and SMEs' performance was significantly negative. However, movement/travel restriction is one of the measures used during COVID-19 in Nigeria to limit the spread of the virus (Ozili, 2020). To restrict movement, a state of emergency was declared by the Nigerian government which proactively closed their borders (Mrabure & Akatugba, 2021), ironically denying citizens their right to freedom of movement (e.g. interstate journeys were prohibited). This restriction of movement resulted in paralysis in business activities concerning production, distribution, and sale of goods and services, which in turn culminated in economic shocks (Bui et al., 2023), such as the increase in transport fares, price of petroleum and hike in prices of food items. Also, the availability and accessibility of food items were compromised as smallholder farmers suffered the losses of their unsold fresh produce that they could not transport to the local markets (Obayelu et al., 2021). Consequently, these farmers and their families were thrown into untoward hardship, having lost their income and means of livelihood. In furtherance of this, Balana et al., 2020) found that COVID-19 caused disruptions in agricultural activities and supply chains due to movement restrictions.

Moreover, Ozili (2020) revealed that aside from the eleven industries that were exempted from conducting business operations, the initial proactive action taken by the federal government concerning travel restrictions was to prohibit movements in the aviation, banking, markets, religion, civil service, education, and sports industries. However, Ozili remarked that on March 30th, 2020, a fourteen-day lockdown was officially announced and enforced to reduce the spread of Coronavirus. Ozili (2020) also observed that the global losses in economic activities amounted to over $4 trillion as travel restrictions in many countries paralyzed many industries such as aviation, sports, hospitality, events, and entertainment. In another development, the study conducted in New Zealand using adults (18+) as a sample, revealed that movement restrictions negatively affected their physical and mental wellbeing as they could no longer have access to gymnastic facilities during COVID-19 (Meiring et al., 2021).

## Market Closure/Business Shutdown

Business closure led to a global economic meltdown due to the Coronavirus invasion (Olufolarin, 2020). While consumers stayed at home, popular brands in many industries went bankrupt as businesses experienced shutdowns during COVID-19 (Abdulkazeem et al., 2021), except for online companies (partial shutdown). According to Abdulkazeem et al., 2021: 155), “financial markets, corporate offices, business, and events" were closed down as a consequence of social distancing health measures put in place to reduce the contraction of Coronavirus. In support, Enesi and Ibrahim (2021) noted that panic and lots of volatility were recorded in several

markets in the Nigerian financial system as a result of the pandemic. Unfortunately, the Nigerian economy got shut down, and in trying to tackle operational costs, many small businesses were faced with urgent needs for more funds (Juju & Obaka, 2020). According to them, low consumer/customer demand and lack of raw material or production inputs made many industrial units to shut down operation. Coincidentally, small and medium enterprises recorded poor performances as sales and profit dwindled; all culminating in supply chain disruptions, production shutdowns, and economic disaster (Emenyi & Udo, 2021; Enesi et al., 2021; Aderemi et al., 2020). The study conducted by Momoh and Evbayiro (2022) found that market closure as a result of COVID-19 had a positive and significant effect on the performance of SMEs in Benin City. Moreover, in many cases, outdoor activities were not allowed as modern shops and local markets were closed (*Rathore & Khanna, 2020)*. In Anambra State precisely, markets were closed on Mondays, Wednesdays, and Fridays and allowed to operate on Thursdays and Saturdays.

**High Transport Costs**

Transportation is the movement of goods and passengers from one place to another (Ajah et al., 2020; Nwodo et al., 2020). Okolo and Ehikwe (2015) remarked that it is a major element of physical distribution. In their research, Ajah et al. (2020) found that the price of agricultural products was significantly influenced by transportation. Okoro et al. (2021) noted that in rural communities in Southeastern Nigeria, high transportation cost is a major impediment to petty trading among women. However, the key impacts of COVID-19 in Lagos such as traffic gridlock, shortage of mode of transportation, and rise in cost of transportation, were identified to have affected Transportation (Mogaji, 2020). According to Mogaji, because many travelers were available and there were few vehicles to convey them to their different destinations, a rapid increase in the cost of transportation was witnessed by the majority of people in Lagos during the pandemic. Similarly, Adebayo et al. (2021) narrated that due to low travel demand caused by the lockdown and since commuters in Lagos were only mandated to maintain 50% passenger carrying capacity during the pandemic, commuters charged higher transport fares to recoup the cost incurred for transporting fewer number of passengers. In their research (Adebayo et al., 2021), it was found that passengers' behavior during COVID-19 was significantly affected by the increase in the cost of transportation in Lagos. Surprisingly, Edih and Faghawari (2023) revealed that the impact of COVID-19 on land transport of the people of Asaba metropolis was economically dire as riders of tricycles popularly known as "Keke-NAPEP" increased transportation fares by up to 200%. In a similar vein, Zankan et al. (2021) validated that COVID-19 significantly resulted in increased transport costs in Kaduna State.

**Methodology**

The research design used in this study is a descriptive research design using a survey method. It is used to get the opinions and responses of the respondent based on

structured questionnaire. The area of the study is Anambra State. The rationale behind the selection of Anambra State is due to presence of local rice producing firms couple with presence of local rice consumers as well as prevalence of many markets where local rice produced are sold. The target population of interest comprised the rice producers and employees. The names of rice producing firms under investigation are: Josan integrated rice producing firm Umumbo; Coscharis rice firm Igbariam; Ogenna rice producing firm Onitsha; Seaman rice producing firm Nnobi; Naira rice and rice mill Nise; Abundance God's rice producing firm Otuocha; Anambra integrated rice firm Amichi; Stine rice producing firm Amichi; Chigbo rice producing firm Omor; Lynden Integrated rice producing firm Igbariam. However, the population size is one thousand seven hundred and ninety-eight (1798) while the sample size was 327 determined using Taro Yamane formula. The researcher adopted a stratified random sampling technique. Stratified random sampling technique was chosen so that the study population divided into stratum so as to enhance effective representation. From each stratum, the following rice producing firms were used which formed good representation for generalization.

The researcher made use of primary sources of data. The primary source of data used was the questionnaire. The instrument for data collection was the use of structure questionnaire. Face as well as contents validation of research instrument was done which helped to establish the soundness of research instrument. Moreover, **t**he reliability of the instrument was established through the test-retest method. The pretest was done by administering 10 copies of the measuring instrument to 10 pilot respondents at two points in time labeled X and Y at an interval of two weeks. The responses from the first and second administration of the research instrument were collated and scores correlated using the Cronbach alpha coefficient. The coefficient of reliability was r = 0.7939 and this indicated that the research instrument was adjudged as being reliable and appropriate for the main survey.

The researchers administered copies of questionnaire to the respondents. The researcher also employed field research assistants because of the wide scope the study covered so as to make distribution and collection easy. The researchers encountered a challenge during data collection which bothered on the issue of nonchalant attitudes by some of the respondents who were reluctant initially to partake in the survey as they doubt the genuineness of this study. We explained to them the reasons for this path-breaking research. We also assured them that all the information generated from them will help to achieve the purpose of embarking on this study. Eventually, the respondents finally complied and assisted the researchers by filling out the copies of the questionnaire given to them thereby supplied the needed data which made this study a reality.

The research hypotheses were tested using correlation analysis and multiple regression analysis. The research hypotheses were tested at 5% level of significance. The analysis was based on three hundred and ten (310) valid copies returned out of

327 copies distributed. This was facilitated with the aid of Statistical Package for Social Sciences (SPSS). In addition, the researchers used a model which was specified as follows: MLR =a+ β1HPR + β2MVR+ β3BSD + β4HTC + μ, where; MLR = marketability of Local Rice, a = constant or intercept, β1 – β4 = coefficient of the parameters; HPR = High price of local rice, MVR = movement restriction, BSD = business shut down, HTC= high transportation cost.

## Results

Table 1: Multiple Regression Model Summary Results

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .881 | .834 | .818 | 1.042 | 1.996 |

a. Predictors: (Constant), HPR, MVR, MCL, HTC.
b. Dependent Variable: Marketability of locally produced rice

Table 2: Multiple Regression ANOVA Result

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 671.110 | 5 | 97.223 | 194.281 | .000[b] |
| | Residual | 513.191 | 305 | 3.437 | | |
| | Total | 1184.301 | 310 | | | |

a. Dependent Variable: Marketability of locally produced rice
b. Predictors: (Constant), HPR, MVR, MCL, HTC.

Table 3: Multiple Regression Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T-value | P-value (Sig.) | |
|---|---|---|---|---|---|---|---|
| | | B | Std. Error | β (Beta) | | | |
| 1 | (Constant) | -0.634 | 0.042 | | 7.342 | .000 | |
| | HPR | -0.428 | .065 | -0.419 | 4.371 | .012 | Signi |
| | MVR | -0.497 | .039 | -0.483 | 5.423 | .001 | Signi |
| | BSD | -0.324 | .334 | -0.321 | 3.233 | .014 | Signi |
| | HTC | -0.283 | .083 | -0.272 | 2.781 | .041 | Signi |

a. Dependent Variable: Marketability of locally produced rice

Note: HPR = High price of rice, MVR = Movement restriction, MCL = Market closure, HTC= High transportation cost.

Table 1 shows that $R^2$ which is the coefficient of determination measures the strength of the effect of independent variables on the dependent variable. The $R^2$ value of 0.834 implies that 83.4% of the variations in marketability of local rice were explained by variations in high price, movement restriction, market closure, and high transportation cost. This was supported by an adjusted $R^2$ of 0.818 which implies that

despite the adjustments, the independent variables were able to jointly account for 81.8% of the variations on the dependent variable leaving about 19.2% to other factors not included in the regression model. The decision rule for Durbin-Watson statistics is that the estimate should be 2 or close to 2 to show the absence of autocorrelation in the model. Otherwise, there is. In our model Durbin-Watson statistics of 1.996 which is approximately 2 shows that the variables in the model are not auto-correlated and that the model is reliable for predictions. Table 2 presents the regression ANOVA results. Based on the results, the value of F statistics is 194.281. The value of F statistics probability value is 0.000. The results imply that the model is fit and significant and that the effect of the independent variables on the dependent variable is significant. Table 3 presents the regression coefficient results which show the values of the t-statistics with its corresponding probability value. These estimates show the significance or otherwise of each of the study variables on the dependent variable. Also, the coefficient of the parameter (β) value shows the effect of individual independent variables on the dependent variable. Accordingly, the summary of the result is presented in Table 3.

**Test of Hypotheses**

The researchers tested the four hypotheses earlier formulated using t-statistics as well as the p-value at 0.05 level of significance. The β coefficient shows the direction of the effect and the strength of the effect of each of the independent variables on the dependent variable used in this study.

**Test of Hypothesis One**

**$Ho_1$:** High price of rice has no significant effect on the marketability of locally produced rice in Anambra State.

**$Ha_1$:** High price of rice has a significant effect on the marketability of locally produced rice in Anambra State.

Based on the result in Table 3, high price of rice has a t-value of 4.371 and with a probability value of 0.012, which is statistically significant. Therefore, we reject the null hypothesis and accept the alternative hypothesis which states that high price of rice has a significant effect on the marketability of locally produced rice in Anambra State.

**Test of Hypothesis Two**

**$Ho_2$:** Movement restriction has no significant effect on the marketability of locally produced rice in Anambra State.

**$Ha_2$:** Movement restriction has a significant effect on the marketability of locally produced rice in Anambra State.

Based on the result in Table 3, lockdown has a t-statistics of 5.423 and a probability value of 0.001 which is statistically significant. Therefore, we reject the null

hypothesis and accept the alternative hypothesis which states that movement restriction has a significant effect on the marketability of locally produced rice in Anambra State.

**Test of Hypothesis Three**

**$Ho_3$:** Market closure has no significant effect on the marketability of locally produced rice in Anambra State.

**$Ha_3$:** Market closure has a significant effect on the marketability of locally produced rice in Anambra State.

Based on the result in Table 3, market closure has a t-value of 3.233 and with a p-value of 0.014 which is statistically significant. Therefore, we reject the null hypothesis and accept the alternative hypothesis which demonstrates that market closure has a significant effect on the marketability of locally produced rice in Anambra State.

**Test of Hypothesis Four**

**$Ho_4$.** High transportation cost has a significant effect on the marketability of locally produced rice in Anambra State.

**$Ha_4$.** High transportation cost has a significant effect on the marketability of locally produced rice in Anambra State.

High transportation as shown in Table 3 has a t-statistics of 2.004 and a probability value of 0.000 which is statistically significant. Therefore, we reject the null hypothesis and accept the alternative hypothesis which states that high transportation cost has a significant effect on the marketability of locally produced rice in Anambra State.

## 3. Discussion and Policy Implications

The study investigated marketing management challenges of locally produced rice amidst COVID-19 provocations: Nigerian perspective. The researchers revealed that high price of locally produced rice has a significant but negative effect on marketability of locally produced rice in Anambra State, Nigeria. What it means is that the increase of the price of locally produced rice affected the farmers negatively during the COVID-19 outbreak. That was because the farmers hardly found the market to buy their farm input, and found no market for their output (produce) since people were retrained from moving out of their homes because of the lockdown measures established by the federal government to prevent further spread of the virus. This is consistent with Sani et al. (2017) who revealed that farmers were drastically affected by the high cost of labor, high cost of input, and low and unstable price of rice (in terms of purchase of rice for planting as well as poor sales to consumers). So, the farmers encountered lots of high cost of production which led to high marketing costs and low profitability. Abba et al. (2023) also found in Katagum,

Jama'are, and Zaki local governments of Borno State that one of the major physio-economic problems suffered by the farmers during COVID-19 was the high increase in the price of rice. This was evident in the poor credit facilities experienced by farmers, high price of rice as government ban on importation affected the increase in the price of local rice which resulted to poor sales as many consumers have not got enough money to buy as a result of lockdown issues and prevailing poverty in the country, including high price of inputs. Also, Munonye et al. (2022) in their study, compared the hike in the price of rice and found that the price of cereals such as rice, millet, maize, etc., was higher during the COVID-19, than before its occurrence. Similarly, Iheme et al. (2022) revealed that the prices of rice and other commodities soared in Nigeria during and after the COVID-19 crisis. In support of this finding, Lasisi (2023) submitted that consequent to restricted movement of people and commodities, rice marketers unilaterally increased the prices of rice and other products to cover the costs of input. This yielded no profit as many consumers ran out of money during the pandemic. Thus, from the policy point of view, the government should provide palliatives for farmers by providing soft loans for them to purchase farm inputs or even subsidize certain farm input such as rice seed, fertilizer, insecticide, herbicide, etc., to make it cheaper for the farmers to buy. The farmers and marketers on their own should not indiscriminately increase the price of local rice for their own selfish gain. When the government, rice farmers and the marketers respond responsively, the price of locally-produced rice will be stable.

Similarly, it was revealed that movement restriction has a significant but negative effect on marketability of locally produced rice in Anambra State of Nigeria. This means that when rice farmers and marketers are under restricted movement (lockdown), all their economic activities aimed at adding value to the rice value chain, especially the marketing of locally-produced rice will be halted. And when this happens, both the purchase of the input and the sale of rice produced will be negatively affected. This is in accordance with Momoh and Evbayiro (2022) who revealed that movement restrictions as a result of COVID-19 had a negative effect on the performance of SMEs in Benin City. SMEs in Bennin City were halted because of the measures put in place by the government to reduce the spread of COVID-19. The government instead of announcing and implementing a total lockdown should ensure that more awareness is created on how to adopt certain simple hygiene and social distancing measures such as washing hands regularly with soap or sanitizer, wearing facemasks, avoiding handshake or hugging, avoiding spitting in public places, wearing hand gloves, maintaining certain distances in commuters, etc. Thus, normal economic activities can go with less hindrances when these measures are observed by everyone, not just the producers and marketers of rice and other farm produce.

Also, it was found that market closure has a significant but negative effect on marketability of locally produced rice in Anambra State. This indicates that closure or market shutdown caused a lot of harm to the marketing of locally-produced rice during COVID-19. Paradoxically, the market closure/shutdown measure introduced

by the federal government became a big challenge to the rice production and transaction as farmers and marketers could no longer meet easily to consummate exchange. Highlighting this, the study conducted by Momoh and Evbayiro (2022) found that market closure as a result of COVID-9 had a positive and significant effect of on the performance of SMEs in Benin City. Also, Bularafa and Adamu (2021) found that market closure has a significant positive effect on SME's performance. From the policy viewpoint, the government should establish an enabling environment by developing robust e-marketing infrastructure and allow it to moves into full swing by creating adequate awareness to farmers and marketers and encourage them to key into this new technology such that in time of future outbreak of any pandemic, the issue of market closure or shutdown would have been a bygone.

Moreover, it was revealed that high transportation cost of rice has a significant but negative effect on marketability of locally produced rice in Anambra State. This means that because of movement restrictions and even market closure, it became difficult to move rice from the source of production to the market where they are needed. The reason being that during COVID-19, very few vehicles were available and passengers who are lucky enough to gain access to any vehicle has to sit far from each other or one another to avoid any form of contact. This multiplied transportation fares and most farmers and marketers could no longer move their rice produce to their customers and final consumers, thus affecting the marketing of locally-produced rice. Given this, Ababulgu et al. (2022) remarked that the supply of perishable agricultural vegetables suffered immensely as a result of higher transportation costs. Zankan et al. (2021) revealed that COVID-19 significantly influenced increase in transport fares in Kaduna State. In support of this, Adebayo et al. (2021), found that passengers' behavior during COVID-19 was significantly affected by the increase in the cost of transportation in Lagos. Moreover, Edih and Faghawari (2023) revealed that the impact of COVID-19 on land transport of the people of Asaba metropolis was economically devastating as riders of tricycles popularly known as "Keke-NAPEP" increased transportation fares by up to 200%. Therefore, the government should formulate a policy will provide vehicles for farmers in the rural areas to make it possible for them to transport their agricultural produce like rice to the both urban and rural markets.

## 4. Conclusion

The study found that the constructs have negative but significant effects on marketability of locally produced rice in Anambra State, Nigeria. However, COVID-19 devastated many lives and left an indelible mark on the economy of the world. Ironically, COVID-19 social health measures which became challenges (such as market closure, movement restriction/lockdown, and social distancing) to the marketability of locally produced rice, led to the sudden rise in the price of locally produced and distributed rice, which in turn led to hunger and poverty in the land during the pandemic. Although many merchants suddenly diverted to the adoption of

online marketing, it was too sudden, and therefore, not enough to change the narrative of business operations; given that the government did not provide the enabling environment for businesses to thrive in the virtual domain. Therefore, to allow freedom of movement and encourage business activities, the government has to be preemptive, as well as proactive in developing necessary facilities and palliatives in terms of the provision of health gear for citizens, free transportation, and regulate the price of products (rice) in the event of future occurrence. When this happens, many lives will be saved and the economy will continue to maintain its robustness.

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