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IMPACT OF COVID-19 AND INTERSTATE BORDER CLOSURE ON ECONOMIC EFFICIENCY OF MICRO AND SMALL ENTERPRISES IN ANAMBRA STATE, NIGERIA.

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Abstract
This study examines the impact of inter-state border closure on the economic efficiency of micro and small-scale businesses in the Anambra State of Nigeria. The study specifically analyzes the economic efficiency of small businesses within the period under review and the factors that enhance or diminish such efficiency. Multi-stage, purposive and random sampling techniques were used in selecting 300 micro and small scale business owners from which data for the study were collected. Primary data collected with the use of a structured questionnaire were analyzed using the transcendental logarithmic stochastic frontier profit model in a single-stage maximum likelihood estimation procedure. Results show that size of the market, border closure, high cost of transportation, and infrastructure were highly significant determinants of economic efficiency for micro and small scale business owners during the period of Covid-19 pandemic while production technique and availability of raw materials were weaker but significant determinants of economic efficiency. Interest on loan repayment was non-significant. The individual economic efficiency indices range from 0.063 to 1.00 with a mean of 0.571. The study, therefore, recommends that government should make empowerment programs for the businesses under these categories a top priority with more emphasis on soft loan accessibility while opening the borders quickly to ease transportation of goods and services in order to save small businesses who are the greatest employers of labour from going into extinction.
Key Words: Covid-19, economic efficiency, micro and small businesses, profit,

Introduction

Globally, micro, small and medium enterprises (MSMEs) play a big role in the world economy as they are responsible for driving innovation and competition in many economic sectors. They also outnumber large companies by a wide margin while employing many more people (Preye, 2015:23). Similarly, the increasing levels of unemployment and poverty in developing countries including Nigeria brought to prominence the recognition of the dynamic role of micro, small and medium enterprises as engine of growth in developing countries. MSMEs have greater likelihood of utilizing labour-intensive technologies thereby reducing unemployment.

John-Akamelu and Muogbo (2018) noted some of the importance of MSMEs in Nigeria to include: acceleration of economic growth through the provision of goods and services for the masses; creation of employment; creation of skill acquisition for

productivity; increasing standard of living through the provision of goods and services both to the rural and urban areas; increasing government earnings through payment of business and income taxes and fees for registration of business names; acceleration of large production as they often help big firms in distributing goods and services and supplying them with raw materials needed in their production. Furthermore, National Bureau of Statistics (2019:18) opined that MSMEs are growth-supporting sectors that not only contribute significantly to improve living standards, but also bring substantial local capital formation and are responsible for driving innovation and competition in developing economies. They are seen as accelerating the attainment of broad socio-economic objectives, including poverty reduction, employment generation, wealth creation, among others. This is why governments at all levels have undertaken initiatives to promote the growth and development of MSMEs. Some of these initiatives include: SMEDAN, YouWin, TraderMoni, N-Power, etc.

Nigeria, through the introduction of the National Policy on MSMEs, has addressed the issue of definition as to what constitutes micro, small and medium enterprises. The definition adopts a classification based on dual criteria, employment and assets (excluding land and buildings) as shown below:

Table 1: Classification of Micro, Small and Medium Enterprises in Nigeria

S/N	Size Category	Employment	Assets (=N= Million) (excluding land and buildings)
1	Micro enterprises	Less than 10	Less than 5
2	Small enterprises	10 to 49	5 to less than 50
3	Medium enterprises	50 to 199	50 to less than 500

Source: SMEDAN and NBS, 2013

Micro Enterprises are those enterprises whose total assets (excluding land and buildings) are less than Five Million Naira with a workforce not exceeding ten employees. Small Enterprises are those enterprises whose total assets (excluding land and building) are above Five Million Naira but not exceeding fifty million naira with a total workforce of above ten, but not exceeding forty-nine employees. Medium enterprises are those enterprises with total assets excluding land and building) are above fifty million naira, but not exceeding five hundred million naira with a total workforce of between 50 and 199 employees. However, if there exists a conflict on classification between employment and assets criteria (for example, if an enterprise has assets worth seven million naira (₦7M) but employs 7 persons), the employment-based classification will take precedence and the enterprise would be regarded as micro (Theresa, Cecilia, Tonna & Moses 2014:17).

According to the Ministry of Industry, Trade, and Investment, Nigeria has over 37.07million micro, small and medium-scale enterprises and they account for more than 84 percent of total jobs in the country (Falokun, 2020). The Ministry also observed that MSMEs in Nigeria also account for about 48.5 percent of the gross domestic product (GDP) as well as about 7.27 percent of goods and services exported out of the country. Based on the total numbers of MSMEs in Nigeria, micro enterprises account for the bulk with 36,994,578 enterprises (about 99.8 percent), while small enterprises took 68,168 enterprises and medium enterprises 4,670 (Falokun, 2020). Theresa et al, (2014), in a study to explore the role of small and medium scale

enterprises in community development in Anambra-South Senatorial Zone of Anambra State found that MSMEs play significant role in community development in terms of employment generation, service provision, improved standard of living and poverty alleviation. The table below gives the spread of micro, small and medium enterprises in the Southeast Region of Nigeria. From Table 2 below, Anambra State has the highest micro and small enterprises in the Southeast of Nigeria and is also a commercial hub.

Table 2: MICRO, SMALL AND MEDIUM ENTERPRISES

S/N	State	Micro	Small	Medium
1	Abia	904,721	1,769	40
2	Anambra	1,223,395	1,620	177
3	Ebonyi	577,216	1,206	4
4	Enugu	1,064,893	812	99
5	Imo	1,296,386	1,259	135

Source: SMEDAN & NBS, 2013

Covid-19 pandemic has caused unprecedented panic and disruptions both for the public and private sectors. The crisis is considered an existential threat to the global economy with governments and businesses grappling with the effects. There has been growing apprehension as to the eventual impact of the pandemic especially for economies. While the health impact of the crisis is substantial, the economic effects are no less devastating especially for businesses. The pandemic has generated critical challenges for micro, small and medium enterprises (MSMEs) in Nigeria forcing many to shift focus from routine operations to crisis management and alternative business response efforts. Olaniyan (2020) observed that about 71.43% of businesses in Nigeria experienced market decline, materials supplied declined by 57.16%. About 47.62% of businesses stopped all forms of production, while about 57.14% experienced challenges with importation of their goods. It is perceived that COVID-19 and some of the strategies adopted to contain it could have far reaching economic consequences on the activities of this vibrant sector that help in lowering the burden of unemployment in Nigeria.

In the course of the fight to contain the spread of COVID-19 Pandemic, leaders of different countries including Nigerian adopted various strategies, policies and programs such as enforcement of social distancing, stay at home order, border closure etc with a view to containing the spread of the virus and flatten the curve. Paolo and Galeotti (2020:1) analyzed the measures to stabilize foreign trade and investment in reaction to COVID-19 in China. The analysis revealed that companies were encouraged to apply for import and export permits through online channels and also to carry most of their activities of negotiation, video conference and project signing online in order to attract investors. It was observed that foreign trade companies were encouraged by simplification of their entry procedure. Furthermore, there were tax policies to support enterprises and individual.

Nigeria joined the fight and implemented inter-state border closure and constitution of Local Joint Task Force on COVID-19 to ensure that World Health Organisation (WHO) and National Commission for Disease Control (NCDC) guidelines were adequately followed. With domestic and international restrictions in movement

hampering trade and travel, most businesses had to entirely, reduce or even alter their operations. Productivity became even more challenging. Most of them were able to lay their hand on raw materials they need. Some of them started shutting down since there were no materials for production. Even the micro and small businesses that can buy and sell could not get supply of their goods because majority of the goods are imported from China. Again, perishable goods/products were wasted in warehouse or sold off at pittances. Distribution of non-perishable/essential goods was practically halted and transportation businesses got stuck with vehicles in their parks all day long. All these made MSMEs to be in a bad financial situation (Linda, 2020).

This paper, therefore, examines the factors that determine economic efficiency of owners of micro and small scale businesses in Anambra State within this period of coronavirus pandemic, with specific focus on travel restriction with a view to suggesting ways of sustaining this sub-sector from complete collapse. This study, apparently, fills existing gap in literature, especially as it pertains to Anambra State as its focus is in determining economic efficiency of small and micro enterprises within the pandemic period employing different analytical tool. This study would offer policy and practical suggestions on how to sustain micro and small enterprises in Anambra State as an engine of growth and employer of labour. This study was carried out under five (5) different sections. Section one is the introduction while section two is devoted to review of related literature. Section three dealt with the methods and procedures adopted in generating and analysing data for the study while section four revolved around analysis and discussion of results of the study. Conclusion, recommendations and policy implications are issues dealt in section five.

Review of Related Literature

Theoretical issues

The main theory of micro and small enterprises development is often traced to the seminal work by Lewis (1955), which is commonly referred to as the Labour Surplus Theory. According to this theory, the emergence and development of micro and small enterprises are driven by excess labour supply, which cannot be absorbed by either the public sector or the large private enterprises of the formal sector. In line with this theory, it can be argued that unemployment is a lubricant for micro and small enterprises growth and development. When there is high rate of unemployment, MSEs provide 'refuge' for those who are not able to find employment in the formal sector. Dennis & Elina (2012:45) posit that MSEs are expected to grow in periods of economic crisis such as this Covid-19period, when formal sector contracts or grows too slowly to absorb the labour force. However, when formal employment grows, the MSE sub-sector is assumed to contract again and thus develop an anti-cyclical relationship with the formal economy. The position of (Jeff 2012:78) on the anti-cyclical relationship has been strengthened by the trend in MSE development before and after Structural Adjustment Programme (SAP) in some countries.

The theoretical foundation for this study is anchored on the Zero or Frictional Profit Theorem (Stigler, G.J., 1964), which is one of the theories of economic efficiency. In a static economy where no unanticipated changes in demand or cost conditions occur, in long-run equilibrium the firms would be earning only normal rate of profit on their capital and entrepreneurial talent. Under these conditions economic profits would not accrue to the firms. Frictional theory of profit explains that shocks or disturbances occasionally occur in an economy as a result of unanticipated changes in the economy, which cause disequilibrium conditions. It is these disequilibrium

conditions that brings into existence positive or negative economic profits for some firms. In the Zero Profit Theorem, entry into a competitive industry will continue until all opportunity for positive economic profit is reduced to zero and marginal cost equals marginal revenue and price. It is a situation that occurs when an industry or type of business has an extremely low (near zero) cost of entry or exit from the industry. In this situation, some firms not already in the industry tend to join the industry if they calculate that they will make a positive economic profit. More and more firms will enter until the economic profit per firm has been driven down to zero by competition. Conversely, if firms are making loses, enough firms will exit the industry until economic profit per firm has risen to zero. The period under review could drive costs or profits for firms to zero.

Empirical Literature

Mohsin, Junrong and Wenju (2020) investigated the impact of COVID-19 pandemic on micro, small, and medium-sized enterprises operating in Pakistan. The study adopted an exploratory methodology wherein it reviewed available literature, policy documents, research papers and reports in the related field. Data generated from 184 Pakistani MSMEs through online questionnaire were analysed through descriptive statistics. Results of the study indicate that most of the participating enterprises have been severely affected and facing several issues such as financial, supply chain disruption, decrease in demand, reduction in sales and profit, among others. The study also showed that more than two-thirds of participating enterprises reported that they could not survive if the lockdown lasts more than two months. The study recommends protection of employees and information accuracy and Income and employment support for MSMEs.

Fate Foundation (2020) examined the impact of COVID-19 on Nigerian MSMEs using a survey approach. Data from 1943 respondents of which 80% were micro business entrepreneurs, 21.8% agricultural entrepreneurs, 14.3% in fashion, 12.3% in service and 6.6% in manufacturing sub-sectors respectively were analysed using descriptive analytical tools. The study found that 94.2% of respondents did not receive support and most of them likely to lay off staff. However, Covid-19 had negative overall effect on MSMEs. The study recommended flexible financing programmes, virtual business support services, and non-financial support through regulatory reliefs and programmes which support vulnerable segments such as women and young entrepreneurs.

Falokun (2020) explored the impact of covid-19 on micro, small and medium-sized enterprises in Nigeria with a view to finding out how they are navigating the economic disruptions resulting from Covid-19 and how it affects their decisions and prospects. The survey questionnaire distributed in Lagos and Abuja, the commercial and political capitals of the country were aimed at ascertaining how the MSMEs are coping; assessing the current level of financial fragility among MSMEs; ascertaining measures taken to adjust to the realities of the period and ascertaining the types of support needed to survive even after the crisis period. Overall, the results of the study suggest that there has been enormous dislocation among small businesses with many businesses becoming financially fragile and considering layoffs. Majority of the businesses see funding as a major support needed. The study recommends accelerated digitization of business operations, greater attention to collaboration and re-thinking of business models to accommodate emerging opportunities.

Peterson (2020:4) investigated COVID-19 pandemic experience in Nigeria and its attendant economic crisis and structural causes. The study employed analytical approach to reveal that economic downturn in Nigeria was triggered by a combination of declining oil price and spillover from the COVID-19 outbreak because of stoppage of economic activities, which resulted from fear of the economic agent contracting the disease and social distancing approach adopted by the government to contain the spread of the disease.

Xiuli et al, (2020:56) modeled the situation of COVID-19 and effects of different containment strategies in China using dynamic differential equations and parameter estimation. The work proposed a quarantine-susceptible-infectious-resistant (QSEIR) model and estimated model parameters from published information with stochastic simulation. The result reveals that if quarantine method is retained, the peak value of confirmed cases would be in the range of (52,438,64090) and the peak date would be in the range of 7th February to 19th February, 2020. It further estimated that by 30th March, 2020, the peak of the disease would be controlled while it will end between 20th August and 1st September, 2020, implying a slowdown of economic activities till September, 2020.

New York State Athletic Commission (2020) used two scenarios to estimate how coronavirus pandemic may impact sales tax receipts for countries outside of New York City. The first Scenario assumes a mild recession and a quick recovery while the second scenario assumes a severe and prolonged recession. Both scenarios however, revealed that the sharpest impacts are on industries related to tourism, recreation and restaurants. Furthermore, the first scenario estimated that sales tax revenue in countries outside New York City would fall about 4% below baseline growth in 2020 for a loss of about $350 million on a full-year basis, while the second scenario estimated that sale tax revenue would fall to about 12% below the baseline or approximately $2 billion on a full-year basis. The study also noted that there will be direct economic effects such as loss of income due to sickness and death, lost work, time of caregiver and parents with children out of school, low income leading to low consumption.

Theresa et al, (2014) studied the role of small and medium scale enterprises in community development with evidence from Anambra-South Senatorial Zone of Anambra State. The study adopted mean rating under the modified four-point Likert-Scale to show that SMEs play significant role in community development in terms of employment generation, service provision, improved standard of living and poverty alleviation. This present study differed from related literature in methodology and its quest to determine what facilitates economic efficiency of micro and small businesses within the pandemic period but with special focus on Anambra State.

Materials and Methods

Area of the Study The study was carried out in Anambra State using its capital territory as the central focus, which is regarded as the third largest economic city of the State after Onitsha and Nnewi respectively. Major towns that form part of the capital territory are found in Awka South Local Government Area and include Amawbia, Awka Ezinato, Isiagu, Mbaukw, Nibo, Nise, Okpuno and Umuawulu . It was discovered that there are a good number of micro and small businesses in the towns that contribute significantly to the growth and development of the City. As a State Capital, it has a good number of government establishments like; Nnamdi Azikiwe University, Awka, Chukwuemeka Odumegwu Ojukwu University, Igbariam, State government Secretariat, FIRS, etc.

Population and Sample Size of the Study The population of the study comprises all the micro and small businesses in Awka, Anambra State. According to Anambra State Ministry of Trade, Commerce, Market and Wealth Creation, there are a total number of one thousand six hundred and twenty (1620) micro and small businesses in Awka. Consequently, Taro Yamane's formula was employed to determine the sample size that will be sufficient to generalize for the population of the study. The formula is therefore stated as; $n = N/(1+Ne^2)$ (www.quora.com).
Where:

n = Corrected Sample; N = Population Size; e = Margin of Error (MoE), e = 0.05

From the above formula, 320 micro and small businesses were drawn as the sample size of the study as described in the next section.

Sampling Technique Multi-stage, purposive and random sampling techniques were used in selecting the respondents used for the study. In the first stage, one senatorial zone – Anambra South Senatorial Zone was purposively selected from the three Senatorial Zones of Anambra State. The second stage also involved the purposive selection of two local government areas (Awka-North and Awka-South) from the selected senatorial zone due to the fact that they have major towns closest to the State Capital City – Awka. The third stage involved random selection of five major towns each from the two local government areas (Amawbia, Awka Ezinato, Mgbakwu, Isu-aniocha, Isiagu, Amansea, Nibo, Nise and Okpuno) drawn from the purposively selected senatorial zone. The finally stage also involved a random selection of 32 owners of micro and small businesses from each of the selected towns that gave a total sample of three hundred and twenty business owners that formed the sample size for the study. Data were thereafter collected with the use of well-structured questionnaire which were administered to the respondents using well trained research assistants, who were also trained to assist the unlettered respondents. Out of the 320 questionnaires distributed to micro and small business owners, only 300 were filled and returned while 20 were not filled for fear of their vital information being misapplied.

Model Specification The study adopted the stochastic frontier profit model independently proposed by (Meeusen and Van den Broeck, (1977: 438) and Aigner, Lovell, and Schmidt (1977: 25-26). Its major advantage is that it provides numerical measures of economic efficiency. A stochastic profit function is given as:

$$\pi_i = f(P_{ij}, Z_{kj}) \exp. (V_j - U_i) \quad (1)$$

Where π_i is the normalized profit/economic efficiency of the j-th business owner defined as gross revenue less variable costs divided by specific output price; P_{ij} is the price of the i-th variable input faced by the j-th business owner divided by the price of output; Z_{kj} is the level of the k-th fixed factor on the j-th business; f is an appropriate function such as Cobb-Douglas, translog, etc; V_j is stochastic disturbance term representing the effect of random factors beyond the control of the business owner e.g. season, government policy, war, measurement errors, etc. V_i is assumed to be independently and identically distributed as N (O, δ_v^2) random variables independent of the U_is which is a nonnegative random variable representing profit or economic efficiency. The U_is are assumed to be non-negative truncations of the N (O, δ_v^2) distribution (i.e. half normal distribution) or have exponential distribution. If $U_i = 0$, the business lies on the profit frontier obtaining maximum profit given the prices it

faces and levels of fixed factors. If $U_i > 0$, the business is inefficient and loses profit because of inefficiency and other factors.

In order to determine the factors influencing the economic efficiency of business owners (profit size), the following model was formulated and estimated jointly with the stochastic frontier production function model in a single stage maximum likelihood estimation procedure. The stochastic frontier model was independently proposed by (Meeusen and Van den Broeck, (1977) and Aigner *et al.* (1977). Its major advantage is that it provides numerical measures of economic efficiency.

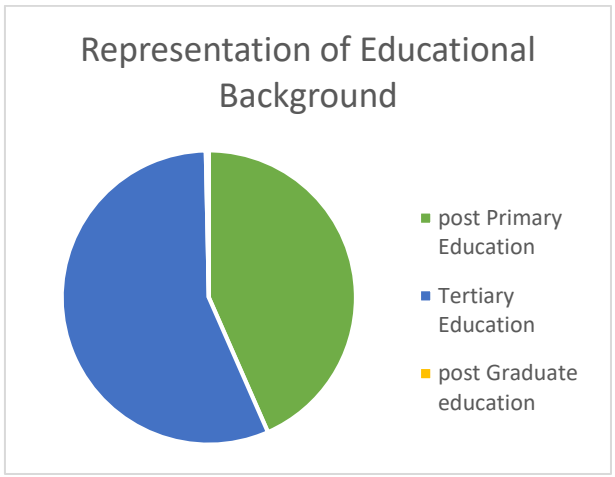
$$EE_i = \phi_0 + \phi_1\beta_1 + \phi_2\beta_2 + \phi_3\beta_3 + \phi_4\beta_4 + \phi_5\beta_5 + \phi_6\beta_6 + \phi_7\beta_7 \quad (2)$$

Where: EE = economic efficiency of the i^{th} business owner; β_1 = Size of the Market (number of persons demanding the product); β_2 = border closure; β_3 = raw materials; β_4 = infrastructure; β_5 = transportation cost; β_6 = production technique; β_7 = loan and interest repayment. a_0 = intercept term; ϕ_1, ϕ_2, …… ϕ_6 are regression parameters to be estimated. A *priori* economic theory between the dependent and independent variables is such that ϕ_1, ϕ_3, ϕ_4 and ϕ_6 would be positive while ϕ_2, ϕ_5 and ϕ_7 would be negative.

Results and Discussion

Descriptive analysis

This section presents descriptive analysis of the data collected from the respondents. Descriptive analysis of data collected shows that 96.2% of the respondents constitute the total number of the questionnaire returned which were also completed, among which 89% were male and 11% were female. Taking cognizance of the age and educational background of the respondents, it was observed that 96.8% of the respondents provided information about their age while 3.2% expressed unwillingness



to reveal age information.

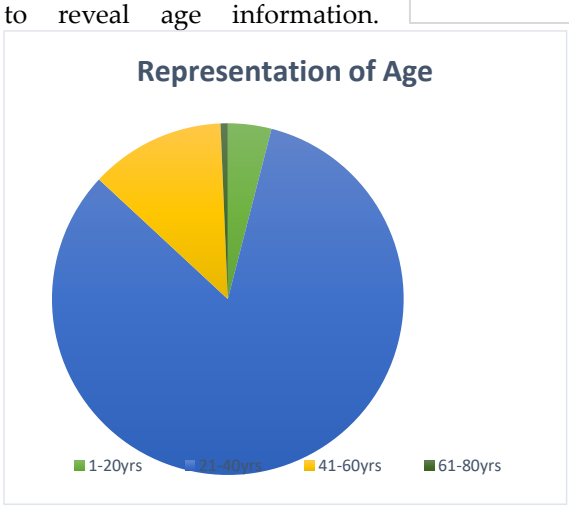


Figure 1: Age distribution of respondents
Source: From authors' field survey, 2020

Figure 2: Educational background of respondents
Source: From authors' field survey, 2020

Similarly, 98.7% completed the information about their educational background leaving the educational background of 1.3% of the respondents unrevealed. Furthermore, it was discovered that 4% of the respondents lies between the age bracket of 1 – 20 years; 82% lies between the age bracket of 21 – 40 years; 12% lies between the age range of 41-60 years while 0.7% was found to be between the age range of 61-80 years. The educational background further reveals that all the respondents attained post primary education as follows; 43% attained secondary education, 56% attained tertiary education while 0.3% obtained minimum of post graduate diploma. The above findings are represented above

Comparatively, figures 1 and 2 above show that the greater number of the micro and small business operators in Anambra South Senatorial District are graduates that fall between 21 – 40 years of age (Educated Youth). This is in conformity with the findings of Preye, (2015) and Theresa et al. (2014:92) in terms of employment creation.

It was pointed out that during the period under review; there were factors that are believed to affect the profit of their businesses within the period under review. They include: transport cost, size of the market, infrastructure, border closure, access to raw Material, production technique and loan and interest re-payment. The degrees to which it affected the businesses are represented below:

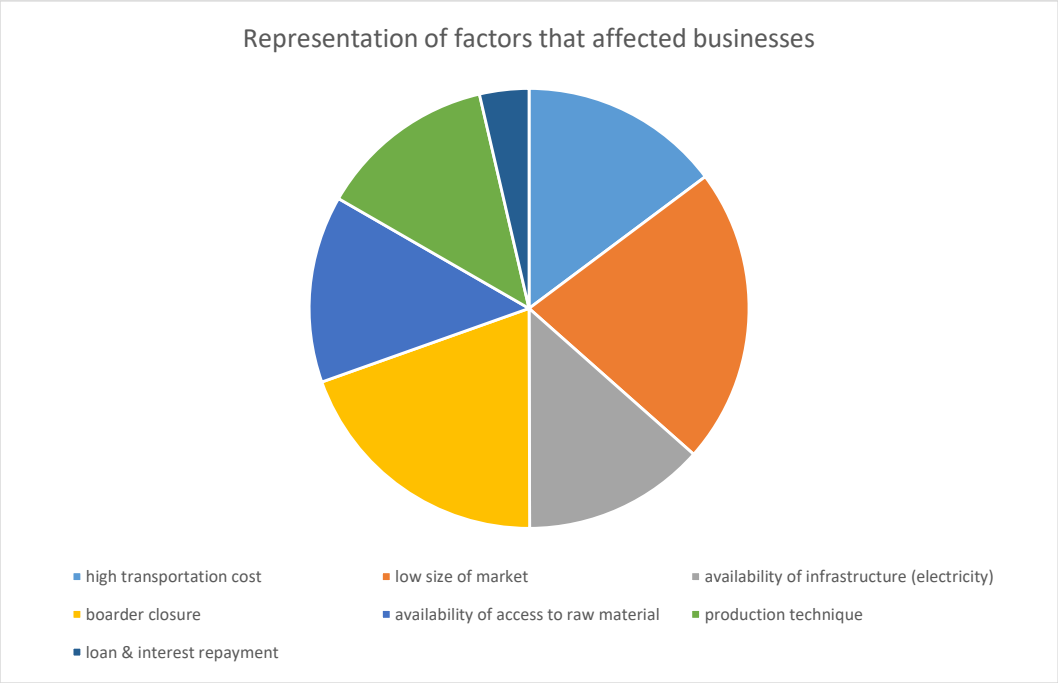


Figure 3: Factors that affect business profit
Source: Authors, 2020

Figure 3 above shows that increased transportation cost had about 14.4%, impact on the estimated daily profit of the business, low size of Market had 21.9%, Infrastructure (Electricity) has 13.4%, border closure had 19.5%, inadequate access to raw material had 13.7%, production technique 13% and interest and loan payment had 3.8%. This result suggests that size of the market, border closure had the greatest impact on small businesses in Anambra State. The implication is that continuous border closure, which shrinks the size of market for small businesses, would lead to loss of economic efficiency and closure of business.

Analyzing further the impact of Covid 19 on the profit margin of the respondents for essential and non-essential small businesses, descriptive statistics shows that 37.9% of the respondents are essential business operators while 62.1% are none essential business operators. 96.6% of business owners reveal that they have experienced varying decrease in the estimated daily profits of their businesses during the period of Covid–19 while 0.4% responded that there was a little increment in the daily profit of their business. Meanwhile, 3% of the respondents acknowledged decrease but were not comfortable to reveal the extent of the decrease. Below is the representation of the estimated daily decrease in the profit of both essential and none essential businesses.

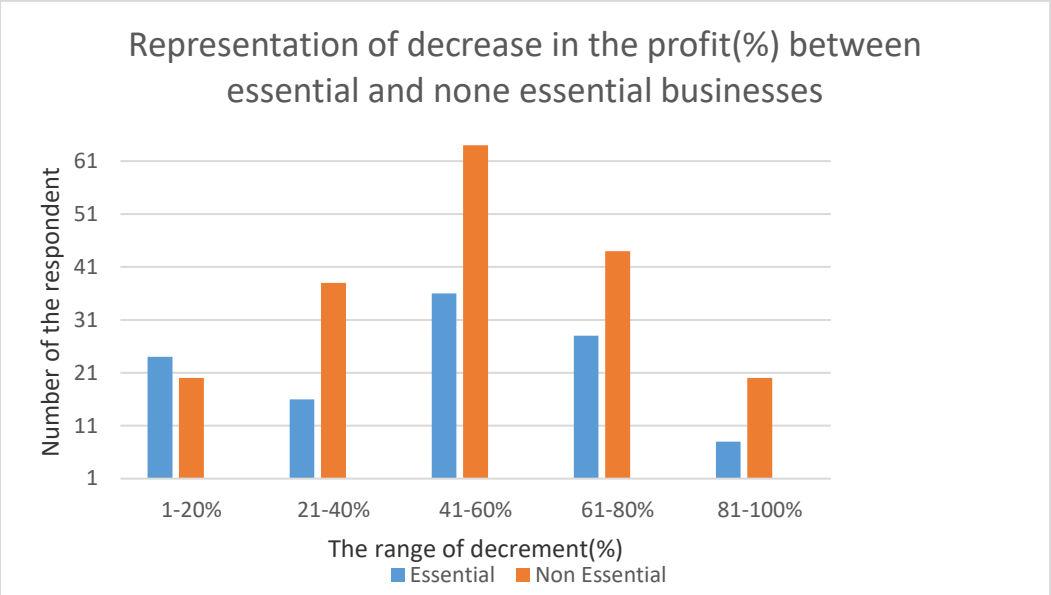


Figure 4: Impact of factors on business operators of essential and non-essential products
Source: Authors compilation from field survey, 2020

The researchers thought that restriction on movement within the Covid-19 period differed for business operators of essential and non-essential products, hence, the categorisation of micro and small business according to the type of product they engage in so as to determine the real impact of their economic efficiency. As presented in figure 4 above, 8% (23) and 6.7% (18) of the respondents representing essential and none essential businesses respectively show that the estimated daily profit was decreased by 1-20% within the period under review while 5.4% (15) and 12.8% (38) respondents of essential and none essential businesses operators indicated that the decreased in the profit of their businesses lies between 21-40% due to the same factors. Similarly, 12% (35) and 21% (63) the respondents for essential and none essential business operators respectively noted that the decrease in profit of their businesses was between 41-60%. Furthermore, 9.4% (28) and 14.8% (43) of the respondents representing essential and none essential business operators revealed that the profit of their business was decreased by 61-80%. Finally, 1.7% (5) and 6.7% (20) of both essential and none essential respondents respectively identified that owing to the factors, outlined in figure 3, there was 81-100% decrease in the profit of their businesses. Figure 4 above, however, shows that non-essential businesses suffered more loss in profit than essential businesses. It further revealed that 67.2% of both essential and none essential businesses lost over 41% of their estimated daily profit during the period of Covid-19.

Furthermore, the returned copies of the questionnaires were also analysed using mean score. A four-point rating scale was given values as follows: Ad (adverse) assigned 4, Mo (moderate) received 3, Mi (minor) was assigned the value of 2 and ND (not decided) received 1. Note that EX=Sum of observation and X=Mean of Observation such that any score that is from 2.50 and above is accepted (this is perceived as arbitrary score), while any score that is below 2.50 is rejected.

Table 3: MEAN RESPONSE OF THE FACTORS THAT AFFECTED THE PROFIT OF THE MICRO AND SMALL BUSINESSES IN AWKA DURING COVID-19

S/N	Item	Adverse 4	Moderate 3	Minor 2	Not decided 1	EX	X	Decision Rule
1	High trans-portation cost	170	70	52	8	300	3.34	Accept
		(680)	(210)	(104)	(8)	1002		
2	Loan & Interest repayment	35	56	198	11	300	2.38	Reject
		(140)	(168)	(396)	(11)	715		
3	Size of market	173	97	23	7	300	3.45	Accept
		(692)	(291)	(46)	(7)	1036		
4	Availability and access infrastru-cture (electricity)	61	179	50	10	300	2.97	Accept
		(244)	(537)	(100)	(10)	891		
5	Border closure	181	88	22	9	300	3.47	Accept
		(724)	(264)	(44)	(9)	1041		
6	Availability and access to raw material	67	176	49	8	300	3.00	Accept
		(268)	(528)	(98)	(8)	(902)		
7	Production technique	75	174	39	12	300	3.29	Accept
		(375)	(522)	(78)	(12)	987		

Source: Field Survey, 2020. N/B: Figures in parenthesis represent totals of (4 by 170; 3 by 70 etc)

The cutoff mean point chosen is 2.5 for decision taking under mean score statistic. Table 3 shows that all the items have mean score above the mean decision rule of 2.5 indicating that the factors under consideration are all the significant in determining the profit margin/size of micro and small businesses within the period under review in Anambra state except interest repayment on loans. However, size of the market and border closure still exerted upper influence on economic efficiency or profits of firms within the period under review.

Determinants of economic efficiency of business owners within the period under review

The estimated determinants of economic efficiency of business owners are presented in Table 4. From Table 4 below, production technique and availability of raw materials are significant and an increasing function of economic efficiency of business owners at 5 percent level of significance, while border closure, market size, high cost of transportation, and infrastructure are also significant but negative functions of economic efficiency. This inverse relationship does not conform to a priori expectation and the reason is simply related to the negative influence of Covid 19. The factors which ought to enhance economic efficiency are negatively tuned within the period under review to diminish efficiency. Loan and interest repayment are non-significant.

Table 4: **DETERMINANTS OF ECONOMIC EFFICIENCY OF BUSINESS OWNERS**

	Essential Business owners		Non-essential Business Owners	
Variable	Coefficient	t- ratio	Coefficient	t- ratio

Intercept	0.513	5.160	3.468	3.480
Market size	- 0.753	- 7.525	- 0.460	- 5.523
Border closure	-0.491	-3.624	-0.531	-2.574
Raw materials	0.073	4.017	0.350	3.044
Infrastructure	-0.053	-0.409	-0.216	-1.457
Transport cost	-0.225	-2.412	-0.280	-2.284
Production technique	0.427	3.356	0.112	2.167
Loan & Int. Repayment	-0.010	- 0.075	-0.004	-0.068

Source: Computed from Frontier 4.1 MLE/Survey data, 2020 by the Authors.

Distribution of business owners according to economic efficiency

The frequency distribution of the economic efficiency of business owners was summarized and presented in Table 5.

Table 5: ECONOMIC EFFICIENCY DISTRIBUTION OF BUSINESS OWNERS

	Essential Business Owners		Non-essential Business Owners	
Range of Efficiency	Frequency	Percentage	Frequency	Percentage
0.01-0.20	7	13.2	3	9.8
0.21-0.40	7	13.6	5	13.7
0.41-0.60	12	27.1	4	12.8
0.61-0.80	9	20.6	7	15.6
0.81-1.00	11	44.1	15	12.9
Minimum	0.068		0.074	
Maximum	1.00		1.00	
Mean	0.531		0.767	

Source: computed from Frontier 4.1 MLE/Survey data, 2020 by the Authors

According to Table 5 above, economic efficiency indices for essential businesses ranged from 0.068 to 1.00 with a mean of 0.531, while that of the non-essential businesses ranged from 0.074 to 1.00 with a mean of 0.767. About 64.7 per cent of owners of essential businesses have an economic efficiency index of above 60 per cent, whereas about 28.5 per cent of owners of non-essential business have an economic efficiency index of above 60 percent. This buttresses the fact that non-essential businesses suffered the most within the period under review.

Test for difference in economic efficiency

A statistical test for differences in economic efficiency between owners of essential businesses and non-essential businesses was carried out and presented in Table 6. The test indicated that a significant difference in economic efficiency existed between the two groups of business owners at 5 percent level significance.

Table 6: TEST FOR DIFFERENCE IN ECONOMIC EFFICIENCY OF OWNERS OF ESSENTIAL AND NON-ESSENTIAL BUSINESSES

Variable	Observation	Mean	Standard Error	Standard Deviation	Z-ratio
Essential	114	0.561	0.031	0.270	-2.718
Non-essential	186	0.748	0.065	0.284	
Combined	300	0.652	0.052	0.294	
Difference		-0.147	0.648		

Source: Authors' from Frontier 4.1 MLE/Stata 15.0/Survey data, 2020

The Z-value was - 2.718. This implies that the essential business owners were more economically efficient than the non-essential business owners within the period under review. Their higher level of economic efficiency could have resulted from the bloated market size and ease of restriction for such businesses leading to higher output and income.

Conclusion, Recommendations and Policy Implications

This study set out to investigate the economic efficiency of small businesses under Covid 19 period with a view to determining the factors that enhance or diminish economic efficiency of small businesses in Anambra State. Results show that size of the market, border closure, high cost of transportation and infrastructure were highly significant determinants of economic efficiency for micro and small business owners during this period Covid-19 pandemic while production technique and availability of raw materials were weaker but significant determinants of economic efficiency whereas interest on loan repayment is non-significant. Results further show that essential businesses owners performed better in terms of economic efficiency than non-essential business owners within the period under review.

Consequently, in order to cushion the negative effect of Covid-19 and inter-state border closure on micro and small businesses in Awka, Anambra State, this study recommends that government should make empowerment programs for the businesses under these categories a top priority with more emphasis on soft loan accessibility. Furthermore, tax holiday should be granted to micro and small businesses in the state to enable small business operators recoup their losses faster. This will restore the economy of the state to normalcy and prevent the societal menace that would result from loss of profit in businesses as a result of Covid-19.

In terms of policy, Anambra State government is advised to reconsider its policy of shutting down the economy as an effective way of containing the spread of Coronavirus and look at other ways that allow the economy to function while still containing the spread of the virus. In this regard, this study also adopts the recommendation of Uzoechina (2020) is stated that post Covid Nigeria is time for more innovation in agricultural sector and micro and small-scale businesses by making technology, information and credit accessible to them as well as mid-wife the widespread of skill-development policies alongside integrated measures to deal with job displacement and unemployment in post Covid Nigeria in general and Anambra State in particular.

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