### IMPERATIVE OF EMERGING DISEASES AND INVESTEMNT TRENDS IN THE NIGERIAN FINANCIAL SECTOR

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#### Introduction

It is no longer news in the world affairs that one of the most pressing challenges facing the contemporary world is diseases. Most of these diseases are viruses. The complex nature of some of these viruses is quite often beyond the expertise of the health practitioners to tackle. Indeed, there are a lot of health challenges/issues confronting the modern world, Africa, and Nigeria in particular. For instance, the African continent is still battling with the danger and routine burden of illness from malaria, pneumonia, diarrhea, Tuberculosis (TB), malnutrition, diabetes, Human Immune

#### **Abstract**

This study empirically investigated the imperative of emerging diseases and investment trends in the Nigerian financial sector. The multiple regression analysis was used to test the research hypotheses. The regression result reported that Cholera has negative statistical insignificant influence on investment while HIV and Tuberculosis has no significant influence on investment. Meanwhile, Covid-19 Pandemic has negative statistical significant influence on investment. Hence, the study concluded that, among the emerging diseases, Covid-19 pandemic is a strong determinant of investment activities in the Nigerian financial sector. On this note, we recommend that there is need for policy makers to do a postpandemic assessment all the sectors in Nigeria so as to build a disaster preparedness and management system which seems not to be in place at the moment. Again, the current social distancing, regular washing of hands, and the prohibition of large gatherings strategies of mitigating the spread of the virus should be sustained. Lastly, votes given to the health care sector should be increased as well to cover unforeseen outbreak that may ensue.

Virus/ Acquired Immune Deficiency Syndrome (HIV/AIDS), hepatitis, and other chronic diseases, which have continued to shorten life expectancy in the continent. A weak system cannot effectively keep up with those problems, let alone the sudden shock imposed by emerging diseases like Ebola (Centre for Disease Control and Prevention, Atlanta, USA2014). These health issues are really disturbing because of the proportion, dimension, and sophistication it appears to have taken in recent times.

For some industries, the immediate effects are evident. One of such industry is the banking industry. The nationwide school

closures have disrupted learning and access to vital school-learning services in Nigeria. According to UNESCO (2020), almost 40 million learners have been affected by the nationwide school closures in Nigeria, of which over 91 percent are primary and secondary school learners. In a short time, COVID-19 has disrupted the landscape of learning in Nigeria by limiting how students can access learning across the country. However, to prevent the further spread of the virus, citizens are advised to explore the option of social distancing and engage in the use of basic hygiene while the banking industry takes a deep halt with it is in light of the above, this study discusses the effects of emerging Diseases on Investment Trends in the Nigerian financial sector.

## Literature Review Conceptual Clarifications

The issue of emerging diseases remains a core issue in emerging countries like Nigeria. One among the trending issue is Cholera. Etymologically, Cholera is an acute Diarrheal disease caused by Vibrio cholera; a gram negative rod-shaped bacterium. It is a potentially life-threatening, primarily waterborne disease. There are many serogroups of V. cholerae, but only two (O1 and O139) cause outbreaks. There have been seven pandemics of cholera worldwide, the last of which began in Indonesia in 1961, with an estimate of between 1.3 to 4.0 million cases and 21,000 to 143,000 deaths globally due to cholera every year. The World Health Organization has estimated that officially reported cases represent only 5-10% of actual cases (WHO, 2019). This "tip `of the iceberg reporting" is likely due to poor surveillance systems and inadequate disease notification systems in low and middle-income countries are disproportionately affected by the disease.

Cholera can be both endemic and epidemic. A cholera-endemic area is an area where confirmed cholera cases were detected during 3 out of the last 5 years with evidence of local transmission. A cholera outbreak/epidemic can occur in both endemic countries and in countries where cholera does not regularly occur. A cholera hotspot is a geographically limited area environmental, cultural socioeconomic conditions facilitate the transmission of the disease and where cholera persists or re-appears regularly. Hotspots play a central role in the spread of the disease to other regions or areas (NCDC, 2019).

Another trending Disease is HIV and Tuberculosis (TB). In 2016, the prevalence of TB among HIV-negative people was 27% (95% uncertainty interval [95% UI] 23-31%) in Nigeria. TB incidence rate (new and relapse cases) was 158 per 100,000 people (95% UI; 128-193), while the total number of TB mortality was 39,933 deaths (95% UI; 30,488-55,039) in 2016. Between 2000 and 2016, the age-standardized prevalence and incidence rates of TB-HIV negative decreased by 20.0 and 87.6%, respectively. The agestandardized mortality rate also dropped by 191.6% over the same period. DALYs due to TB among HIV-negative Nigerians was high but varied across the age groups. Of the risk factors studied, alcohol use accounted for the highest number of TB deaths and DALYs, followed by diabetes and smoking in 2016 (WHO, 2019).

Lastly, the new Covid-19 Pandemic ranked the highest. Etymologically, Covid-19 is originated from Latin world "corona" which means a 'crown'. This nomenclature was based on the microscopic attributes and appearance of the virus with a fringeof large, bulbous surface projections creating an image similar to solar corona or halo

(Almeida, 1968). Coronaviruses, therefore, are clusters of Ribonucleic Acid (RNA) viruses that causediseases in mammals and birds. In humans and birds, they cause respiratory tract infections that can vary from mild to a fatal one. Mild illnesses in humans include some cases of the common cold (which is also caused by other viruses, predominantly rhinoviruses), while more deadly types can cause SARS, MERS, and COVID-19 (Feigin& Cherry, 2017). Contextually, Covid-19 is a novel disease that affects the respiratory system of the victims (both men and animals) especially the aged, and sometimes leading to their deaths. It is the worst enemy of humanity in the 21st century as it has caused the worst global health crises and death toll compelling state to embark on the total shutdown of the economy as a preventive measure (WHO, 2020).

Historically, the COVID-19 first appeared in the Wuhan City of Hubei province in China and was declared a global emergency by World Organization (WHO) on 30th January 2020. The 2019 novel Coronavirus disease (2019nCoV or COVID-19) recently reported from Wuhan (China), which has cases in Thailand, Japan, South Korea, and the United States, Africa, including Nigeria has been confirmed a considerable number Coronavirus (WHO, 2020).

The Federal Ministry of Health has confirmed a coronavirus disease (COVID-19) case in Lagos State, Nigeria. The case, which was confirmed on the 27th of February 2020, is the first case to be reported in Nigeria since the beginning of the outbreak in China in January 2020. The case is an Italian citizen who works in Nigeria and returned from Milan, Italy to Lagos, Nigeria on the 25th of February 2020. He was confirmed by the Virology Laboratory of the Lagos University Teaching Hospital, part of

the Laboratory Network of the Nigeria Centre for Disease Control. The patient was clinically stable, with no serious symptoms, and was being managed at the Infectious Disease Hospital in Yaba, Lagos.

The Government of Nigeria, through the Federal Ministry of Health, strengthened measures to ensure an outbreak in Nigeria was controlled and contained quickly. The multi-sectoral Coronavirus Preparedness Group led by the Nigeria Centre for Disease Control (NCDC) immediately activated its National Emergency Operations Centre and worked closely with Lagos State Health authorities to respond to this case and implement firm control measures. This reality woke up the Federal and State Governments to protect her citizens. Having acknowledged the fast rate of morbidity and mortality of various other countries across the globe, they aimed to prevent the outbreak of the disease in the country. The civil societies and government agencies embarked on enlightenment campaigns for good hygiene and social distancing in public places (Olapegba, 2020).

At the early phase of the pandemic in Nigeria, the number of confirmed cases was on increase every day with the availability of rapid testing kits. This pandemic impacted severely the socioeconomic psychological aspects. COVID-19 was considered as devastating as the World influenza epidemic of 1918. Elderly people and individuals with a history of chronic illness were at higher risk of corona attack and mortality (Belluz, 2020). COVID-19 has a broad clinical spectrum with patients showing only mild and subclinical illness at the early phase of the disease. Most of the patients of COVID-19 developed a severe acute respiratory disease which required intensive care and oxygen supplementation (Augoye, 2020).

As of 29th March 2020, the W.H.O confirms database 574444 cases Coronavirus globally with 26654 reported deaths from 201 countries. This number was subjected to change every second. The most affected countries were Italy with more than 86000 confirmed cases and 9000 deaths, the United States with 85000 confirmed cases and 1243 deaths, and china with 82000 confirmed cases and 3300 deaths. However, the total stoppage of the spread of the virus is yet to be achieved since it covers all the states of the country.

Furthermore, the Nigerian financial has been considered one of the fastest growing sectors before the advent of the Covid-19 Pandemic. Apparently, the Nigerian Financial Services sector is a star performer in Nigeria's macro-economy. It constitutes approximately 70% of the capitalization in one of the fastest growing emerging markets in the world. First, since the reform measures are meant strengthen the banking system adequately play its intermediary between the surplus and deficit unit, there is need to assess the efficacy of the measures in raising the lending ability of banks. Second, since the ultimate aim developments/reforms in the banking sector is boosting of economic activities, there is need to determine the impact of emerging diseases on investment trends in the Nigerian financial sector.

#### **Theoretical Framework**

This paper adopted the Social Distance Theory. This theory argues that effective distance between and amongst groups is paramount in reducing the spread of the COVID-19 pandemic in Nigeria. In other words, social distance as a theoretical construct originates in the works of Georg Simmel (1908): *The Sociology of Space* in

which he outlined the 'geometry of social life'. He saw social distance as a complex interpretation of sociality as forms of 'distance' in both a geometric and a metaphoric sense. In his other work titled: The Stranger, Simmel sheds light on the root and his conception of social distance theory. The theory was later on modified by Simmels's American student Robert Park and his associate at the Chicago school of sociology, Emory Bogardus in 1933. For Bogardus (1933), social distance is a function of the effective distance between the members of two groups: social distance studies the center of attention which is on the feeling reactions of persons toward other persons and toward groups of people. Thus, for him, social distance is essentially a measure of how much or little sympathy the members of a group feel for another group.

Putting into consideration how social distance can mitigate transmittable epidemics, Reluga (2010) notes that social distancing practices are changes in behavior that prevent disease transmission by reducing contact rates between susceptible individuals and infected individuals who may transmit the disease.

#### **Empirical Studies/Perceived Gaps**

The current COVID-19 pandemic is an issue that demands the swift attention of all and sundry. Although, it is a current issue but some scholars have indicated interest on the construct. Again, we intended to explore at least twenty prior studies but because of the purpose of this proposal, we were explored few prior studies.

Lately, Ishola, Ityonzughul, and Gbamwuan, (2020) did a desk survey on the debilitating effects of COVID-19 on Nigeria's entertainment industry using the documentary method of data collection and social distance theory. The study reported

that the pandemic has affected the entertainment industry thereby retarding the development of the sector. Hence, the study concluded that, for the industry to be stable and vibrant, the further spread of the pandemic must be regulated. In this wise, the study recommends amongst other measures like social distancing, regular washing of hands, and the prohibition of large gatherings as part of the ways to reduce the spread of the virus. Like the previous research cited above, it just an explorative research; empirical research would have been a better option. However, the study is just an explorative research. However, the study was just an explorative research; empirical research would have been a better option. Again, this research did not consider how COVID-19 pandemic affected the Nigerian banking industry. Based on this, we therefore motivated to fill this perceive gap.

Again, Nhamo, Dube, and Chidodzi (2020) did an explorative research on the effect of Covid-19 pandemic on the gaming, leisure and entertainment industry. Using the archival secondary data authoritative sources, the study discovered that the Covid-19 pandemic has a negative impact on the gaming, leisure entertainment industry (music, television, special events). More so, researchers reported that the Covi-19 pandemic disrupted both the demand and supply side of business in the entertainment industry vis-à-vis music, television, and special events. Hence, the researchers recommend that there is need for policy makers to do a post-pandemic assessment all the sectors in Nigeria so as to build a disaster preparedness and management system which seems not to be in place at the moment.

In a related study, Orunoye and Ahmed (2020) explored the potential influence of the current COVID-19 pandemic on the Nigerian tourism sector. The researchers used a desk survey. The study revealed arising from the shutdown strategy of the Nigerian government; the Nigerian tourism sector has experienced patronage, cancellation of business trips, hotels and travel online bookings. The researchers also noted that, this would as well continue if the COVID-19 pandemic keeps increasing by the day. Based on this, advocated researchers that for diversification into similar sectors like Agricultural sector as a tool to withstand the scorch of the virus. However, the study was just an explorative research; empirical research would have been a better option. Again, this research did not consider how COVID-19 pandemic affected the Nigerian banking industry. Based on this, therefore motivated to fill this perceive gap.

Similarly, Maryla, Aaditya, Dominique, (2020) did a preliminary assessment of on the potential impact of COVID-19 pandemic on GDP and trade. The researchers used a global computation model to assess this potential impact on both the economy and trading activities. The researchers discovered that the emergence of the COVID-19 has brought about pains, reduced investors' economic confidence on trading activities generally, and has enthroned fear and panic on all trading activities to the inclusion of the tourism sector. Like the previous research cited above, it just an explorative research; empirical research would have been a better option. Again, this research did not consider how COVID-19 pandemic affected the Nigerian banking industry. Based on this, we therefore motivated to fill this perceive gap.

Ozili (2020) examined the effect of Covid-19 pandemic on economic crises alongside the structural causes that worsen the Covid-19 crisis. The researcher discovered that the economic crises was triggered by a combination of oil price fluctuation and spillover from the downturn in Nigeria Again, all efforts made by the Nigerian government in ensuring that the effect of the Covid-19 pandemic on sectors proved to be inefficient and also slow down patronage. This is because individuals were not willing to contact the deadly disease due to contact with others. Like the previous research cited above, it just an explorative research; empirical research would have been a better option. Again, this research did not consider how COVID-19 pandemic affected the Nigerian banking industry. Based on this, we therefore motivated to fill this perceive gap.

#### Based on the foregoing, we hypothesize:

- Cholera has no significant influence on investment trends.
- ii. HIV has no significant influence on investment trends.
- iii. Tuberculosis has no significant influence on investment trends
- iv. Covid-19 Pandemic has no significant influence on investment trends.

#### Methodology

This study employed the interdisciplinary approach to examine the debilitating effects of Emerging Diseases on the Nigerian financial system. A wellstructured questionnaire was shared across banks located in Asaba, Agbor, and Warri Metropolis. Considering the nature of this paper, time, and cost, it is considered thoughtful that а sample of 180 questionnaires will be sufficient enough to assist us draw useful inferences. The research questionnaire was grouped into 2 sections. The first section covered the respondents' bio-data while the second section contains all the research questions into further questions. Their broken responses were arranged in 5-likert scaling ranging from secondly, the study made use of printed materials in form of books, journal articles, and internet materials that treat the issue of Emerging Diseases in Nigeria and elsewhere in the world. This information was sourced and marched with each other to corroborate the views on the subject matter to enhance a better understanding of the negative effects of Emerging Diseases on Investment Trends in Nigeria. For data analysis purposes, we used the multiple regression analysis. The model is therefore specified below:

INVD =  $\beta 0 + \beta_1 CHL + \beta_2 HIV + \beta_3 TB + \beta_4 COVD + Eit.....(1)$ 

#### Where:

INVD = Investment Trends

CHL = Cholera

HIV = Human Immunodeficiency

Virus

COD = Covid-19 Pandemic  $\epsilon$  = Error term of the model

β0 = Constant value

 $\beta$ 1,  $\beta$ 2,  $\beta$ 3,  $\beta$ 4 = Regression model coefficients.

#### **Decision Rule**

Reject the null hypothesis if the p-value is lesser than the significance level, Significance level is 5%.

#### **Results and Discussion**

Data were presented using simple percentage (%) and narrative approach. This is geared towards simplifying the data collection and analysis procedure utilized herein:

#### **Questionnaire Administration and Retrieval**

**Table 2: Questionnaire Retrieval Analysis** 

Questionnaire Distributed and Retrieved	Score Card	Percentage (%)
Numbers of Questionnaire Retrieved	161	89.44
Numbers of Questionnaire Not Retrieved	19	10.56
Numbers of Questionnaire Distributed	180	100

**Source: Field Survey (2020)** 

A total of 180 responses were received, 19 were detected to be incomplete or with errors. Correct and defect free responses summed up to 161 and formed the basis for this analysis.

#### **Demographic Information of Respondents**

Demographic variables included in the study are: Gender, Age, Marital status, Organizational tenure, Educational Qualification and Job Rank. The results in Table 1 represent distribution of sample individuals according to demographic variables.

Table 3: Descriptive Analysis of Respondents' Background

	Analysis of Respondent		Valid	Cumulative
Respondent		Frequency	Percentage	Valid
Information	Particular	(N)	(%)	Percentage (%)
Gender	Male	156	60.00%	60.00%
Gender	Female	104	40.00%	100.00%
Grand Total		260	100.00%	
	SSSC	45	17.31%	17.31%
Educational	Diploma	65	25.00%	42.31%
Background	University Degree	61	23.46%	65.77%
	Postgraduate Degree	89	34.23%	100.00%
Grand Total		260	100.00%	
	30- 35 Yrs	49	18.85%	18.85%
Ago Group	36-45 Yrs	55	21.15%	40.00%
Age Group	46-60 Yrs	98	37.69%	77.69%
	60- 65 Yrs	58	22.31%	100.00%
Grand Total		260	100.00%	
	0-2 Yrs	45	17.31%	17.31%
	2-5 Yrs	72	27.69%	45.00%
Length of Service	5-10 Yrs	41	15.77%	60.77%
	10-15 Yrs	47	18.08%	78.85%
	15 Yrs and Above	55	21.15%	100.00%
Grand Total		260	100.00%	

Source: Field Survey, 2020.

**Presentation of Regression Result** 

The analysis of employee compensation system variables and

employees' commitment variables was carried out using statistical package for

social sciences and is presented in table 4.6 below:

Table 2: Regression Result Coefficients<sup>a</sup>

		Unstandardized Coefficients		Standardized Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	2.176	.422		5.153	.000
	CHL	047	.096	050	489	.626
	HIV	.166	.089	.189	1.869	.065
	ТВ	.011	.086	.012	.123	.902
	COVD	238	.082	.299	-2.923	.004

a. Dependent Variable: INVD

R = 0.992, R2 = 0.984 P values are 0.000 respectively which are all less than 0.05 alpha.

Source: Statistical Package for Social Sciences version 23.0 (2021)

Table 3 gives details of the combined influence of emerging diseases on investment in the Nigerian financial sector. The multiple correlation of the analysis is given as 0.992 which indicates that a 99.2% relationship exists between reward system variables and employee performance. The multiple coefficient of determination is given as 0.984 which indicates that 98.4% of the change in investment in the Nigerian

financial sector can be attributed to the variables that are used to measure investment trends in the Nigerian financial sector.

From the analyses, it was discovered that three of the null hypotheses were rejected and only one was accepted. The table below shows the hypotheses and the conditions at which they were treated.

**Table 4: Summary of Test of Hypothesis** 

S/	Hypotheses	Condition	Coefficients	Remarks
N				
1	Cholera has no significant influence on investment trends.	0.05 alpha and 95% confidence level	P-Value = 0.626	Ho1 was sustained
2	HIV has no significant influence on investment trends.	0.05 alpha and 95% confidence level	P-Value = 0.065	Ho2 was rejected
3	Tuberculosis has no significant influence on investment trends.	0.05 alpha and 95% confidence level	P-Value = 0.902	Ho3 was sustained
4	Covid-19 Pandemic has no significant influence on investment trends.	0.05 alpha and 95% confidence level	P-Value = .004	Ho4 was sustained

Source: Researcher's Compilation Based on SPSS Output (2021)

Furthermore, table 3 above clearly revealed that cholera exerted negative insignificant influence on investment activities in the Nigerian financial sector. This is adjudged form the negative coefficient value of -.047and -.489. Again, both HIV and tuberculosis have positive significant influence on investment activities in the

Nigerian financial sector. Lastly, Covid19 pandemic has negative statistical significant impact on the Nigerian financial sector. This is based on the negative t-statistics and low p-value estimated at -2.923 and .004. This was reaffirmed by Again, Nhamo, Dube, and Chidodzi (2020). The researchers reported that the Covi-19 pandemic disrupted both the demand and supply side of business in the entertainment industry vis-à-vis music, television, and special events. Orunoye and Ahmed (2020) discovered that the current COVID-19 pandemic affected the Nigerian tourism sector negatively. This again is in line with the Social distance theory.

#### **Conclusions and Recommendations**

The current disease outbreak being COVID-19 Pandemic posed questions on the efficacy of Natural medicine. More so, the past year, months, and weeks clearly show gaps in customer experiences, investment trends, and opportunities for sustainable new business model due to emerging diseases. In this wise, this study south to examine the influence of emerging diseases on investment trends in the Nigerian financial sector. Base on the findings of this study, the study concluded that, among the emerging diseases, Covid-19 pandemic exerted negative statistical significant influence on investment activities in the Nigerian financial sector. Meanwhile, Cholera, HIV, and TB were statistically insignificant though they reported mixed results. Hence, we recommend that there is need for policy makers to do a postpandemic assessment all the sectors in Nigeria so as to build a disaster preparedness and management system which seems not to be in place at the moment. Again, the current distancing, regular washing of hands, and the prohibition of large gatherings strategies of mitigating the spread of the virus should be sustained. Lastly, votes given to the health care sector should be increased as well to cover unforeseen outbreak that may ensue.

#### References

- Aguda, O. (2020). How Covid-19 pandemic has affected the film industry. Business News, 26<sup>th</sup> May.
- Augoye, J. (2020). Nigerian Actors, Practitioners Lament Coronavirus Impact on Movie Industry', *Premium Times*, 3rd May.
- Bogardus, E.S. (1933). Social Distance Scale', in *Journal of Sociology and Social Research*, 17(1), 20-30.
- Feigin & Cherry (2017). *Textbook of Pediatric Infectious Diseases*, 8th Edition.
- Ishola, J.A. Ityonzughul, T.T. & Gbamwuan, A. (2020). Coronavirus pandemic and the Nigeria's entertainment industry. *International Journal of Development and Economic Sustainability*, 8(4), 60-73.
- Maryla, M. Aaditya, M. & Dominique, D.D (2020). The potential impact of COVID-19 on GDP and Trade: A preliminary Assessment. *Policy Research Working Paper*, 1-24.
- NCDC (2019). Update on Disease Outbreak.

  Available at https://www.ncdc.gov.ng/themes/common/docs/protocols/45\_1507196550.pdf
- Nhamo, G. Dube, K. & Chidodzi, D. (2020). Implications of Covid-19 on gaming, leisure, and entertainment industry. Available at https://doi.10.1007/978-

- <u>3-030-56231-1-1 12</u>. Accessed on 13<sup>th</sup> March, 2021.
- Njoku, B. (2020). Nigeria: 'Aftermath of Covid-19 as Music Stars Concel Shows', in *Vanguard Newspaper*, 21st March.
- Ojeniyi A., Enegesele D. & Obafunmiso C. K., (2020). Factors militating against elearning platform effective utilization during Covid-19 pandemic. International Journal of Computing and Technology, 7(6), 40-50.
- Olapegba, P.O. (2020). A Preliminary Assessment of Novel Coronavirus (COVID-19) Knowledge and Perception in Nigeria. Retrieved from <a href="https://doi.org/10.1101/2020.04.11">https://doi.org/10.1101/2020.04.11</a>. Accessed on 13<sup>th</sup> March, 2021.
- Orunoye, E. D. & Ahmed, Y.M. (2020). An appraisal of the potential impacts of covid-19 on tourism in Nigeria. Journal of Economics and Technology Research, 1(1), 32-41.

- Ozili P. K., (2020). Covid-19 pandemic and economic crisis: the Nigerian experience and structural causes. In SSRN Electronic Journal, April 2020 DOI: 10.2139/ssrn.3567419
- Reluga, T.C. (2010). Game theory of social distancing in response to an epidemic. Retrieved from https://doi.: 10.1371/journal.pcbi.1000793. Accessed on 13<sup>th</sup> March, 2021.
- Simmel, G. (1908). 'The Stranger', in Ethington P. J. (1997). The Intellectual Construction of Social Distance': Towards the Recovery of Geog Simmel's Social Geometry enAccueil>Rubriques>Epistemologie, Histoire de la Geo...>1997>.
- Touchi, (2020). Okayafrica.com. accessed on 28-09-2020.
- WHO (2019). Update on Disease. https://www.who.int/news-room/fact-sheets/detail/cholera.

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