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Effect of Panic Buying on Individual Savings: The Covid-19 Lockdown Experience

Abdulmumini Baba Alfa[1] & Monsuratu Ohunene Gomina[1]

[1]*Department of Economics, Ibrahim Badamasi Babangida University Lapai,Niger State, Nigeria*

Correspondence Email: balfa80@gmail.com

Abstract
This study analysed the micro economic effect of panic buying on individual savings arising from the lockdown experienced due to the coronavirus pandemic in Niger State. The study used a total sample of 384 individuals and applied a two-stage least square regression analysis using perception, price deferential and expenditure on individual savings. Finding shows that perception, price deferential and expenditure negatively affects individual savings. However, only expenses on groceries and household goods tend to contribute to household expenditure in the endogenous model. The study therefore recommends authorities interplay in the market mechanism especially by maintaining a static price to avoid price fluctuation.

Keywords: Coronavirus, Expenditure, Lockdown, Panic Buying, Savings
JEL Classification:

1. Introduction

Over the last few decades, the world has experienced drastic changes especially in terms of medical advancement which have helped to reduce mortality and health scare. However, despite this advancement in medicine, new life threatening diseases sprung out and the world is often faced with the realisation that there is still a long way to go. The outbreak of the Severe Acute Respiratory Syndrome (SARS) in 2002, Ebola in west Africa in 2014, Middle East Respiratory Syndrome(MERS) in 2015 and the novel coronavirus disease (COVID-19) in 2019 has made it quite obvious that infectious diseases are still a challenge to the world (Jribi, J, 2020). One unique aftermath of the outbreak of any deadly disease is that it changes the behavioural pattern of humans socially and economically. The seriousness of the corona virus disease (COVID-19), coupled with the way it spread without any accepted treatment protocol and with the disease claiming thousands of lives, many countries have chosen to lockdown in order to curb its spread and protect its population. The essence of the lockdown was to reduce the spread of the virus and reverse the growth of the pandemic (CDC 2015). As more than half the world was put on lockdown, forcing people to stay home and only allowed to go out to meet essential needs like purchase of food stuffs and medicine, people are faced with the problem of how to fulfill their basic needs since most income generating activities have been put on hold, especially for those in the informal

sector. The fear of the pandemic, coupled with the lockdown, led to a shift in the purchasing habits of individuals and panic buying as the number of cases continued to rise without hope for a vaccine any time soon (Gayithri & Anura, 2020). This has put a lot of strain on individual income as well as savings.

Panic buying refers to the situation where individuals buy unusually large quantities of products with the anticipation of price increase as well as shortage (Kum, Xueqin, Fei & Kevin, 2020). Large amount of necessities like food and medical supplies are purchased from the market, usually resulting to stock out situations in the market. Panic buying is a socially undesirable behaviour and Gayithri and Anura (2020) attribute the panic buying during the COVID-19 pandemic to fear and apprehension which compels individuals to make hasten decisions in their purchases. In the United States for example, between February and March, 2020, household spending increased by about 50% due to panic buying but as the virus spread, there was fall in the spending (Baker, R *et.al*., 2020). According to Kate (2020), in the UK the coronavirus pandemic has triggered a huge rise in the demand for savings plans due to the fall in the household spending during the lockdown by a third. The rise in savings in the UK stems from a combination of the decreasing household spending and financial fear, making people whose income survived the coronavirus to be eager than ever to save their money. The early days of the pandemic was characterised by increase in household spending due to panic buying which caused a strain in the income and savings of individuals. However, as the lockdown continued, household spending decreased.

After recording its first case of COVID-19 in 27th February, 2020, Nigeria was awakened to a new social and economic reality. The current living conditions of most Nigerians which are characterized with low access to sanitation and the lack of savings to facilitate self-isolation has put Nigerians at a higher risk of contracting the coronavirus. The events following the lockdown initiated in Nigeria on the 6th of April 2020 due to the pandemic clearly shows that most Nigerians do not have emergency savings (Uche, 2020). As the lockdown order sprang panic buying of food items and drugs to stock up, it became obvious that millions of Nigerians lack the resources required to survive such a drastic measure. Although the lockdown did not affect those providing essential services like food distributors and retailers, panic buying ensued for fear of higher cost (Human Rights Watch, 2020).

Prior to the outbreak of the pandemic, millions of individuals had little or no savings for emergency which can be traced to the fact that they lacked the necessary resources to afford their basic needs. According to Martinet *et al*. (2020), with no government benefits coupled with job loss, most individuals deplete their savings to smooth consumptions and in cases where government benefits were much, savings increased; just as the case of the UK. The lockdown due to COVID-19 has forced individuals to use their precautionary savings especially in countries like Nigeria where there is a very weak social protection system. The outcome of the stoppage of the income generating activities of people engaged in nonessential services arising from the lockdown is the rise in the prices of food, driven by panic buying.

In order to counteract the impact of the pandemic and lockdown on the income and livelihood of individuals, the governments of the different countries of the world have

passed several relief bills. In the US, the federal policy makers passed four major relief bills including $2trillion Cares Act (Michael et.al 2020). The federal government of Nigeria has also undertaken steps to cushion the effects of the lockdown on the most vulnerable. These include distribution of food rations, cash transfer of ₦20,000 per month, the Central Bank of Nigeria ₦50 billion targeted credit facility towards households, micro, small and medium enterprises affected by COVID-19. In other countries like China, salaries were being paid to workers who were unable to work either as a result of illness or quarantine. Sick leaves were made available to workers in Ireland, Singapore and South Korea while in the UK, in addition to sick pay being paid to those diagnosed with coronavirus or self-isolating, a three-month payment holiday was provided to those struggling with mortgage or rental payments (Tobiloba, 2020). All these relief palliatives and care packages are critical for the sustainability of the well beings of families and also cushion the economic and social cost of the virus.

Savings has always been used as a tool to minimize and manage the weight of expenditure on individual income. However, this only works for individuals who earn income above their basic needs and for a vast majority of Nigerians, this concept is not feasible (Thelma, 2020). This is so because vast majority of Nigerians who are micro/small business/daily earners, savings/investments is a luxury. The fear of governments and economists over the world is not just on the survival of people during the pandemic but concerns are being raised on how individuals are to survive post pandemic. The impact of the lockdown hit the individuals on two periods: during the crisis period where some individuals experienced decline in income and used precautionary savings to maintain consumption and the recovery period when individuals saved to replenish their dwindling savings to the pre-pandemic level (Martinet.al, 2020). When the pandemic began and individual engaged in panic buying to survive the lockdown, a large amount of individuals' income went into meeting those needs and in most cases, those savings. The fear now became what will happen to households post crises period? Would people's perception of savings change after the pandemic? What is the magnitude of the impact of the lockdown on the savings of individuals especially those whose income were affected by the pandemic?

Since the pandemic started, a lot of research as well as inquiries have been undertaken on the health, social, economic impact of the coronavirus pandemic on individuals and the general economy. In March, 2020, Martinet.al carried out a research on the socio-economic impact of Covid-19 on household consumption and poverty. Jribi et.al (2020) also conducted a study on the impact of Covid-19 on household food wastage. As a new area of study, most researches are focused on the health impact as well as the macroeconomic effect of the lockdown on countries. However, this study focuses on analysing the micro economic effect of panic buying on individual savings arising from the lockdown experienced due to the coronavirus pandemic.

2. Literature Review

The coronavirus pandemic has had different economic impact on both the micro and macro level. The impact of COVID-19 on each nation individually has had a manifold impact on the global economy at large (Amit and Richard, 2020). The studies conducted by Baker et.al (2020), Crawford et.al (2020) and Martinet.al (2020) were focused on the impact of the corona virus pandemic on household consumption/spending. However, some studies like

Paolo and Andrea (2020), Anant (2020) and Kartseva and Kuznetsova (2020) focused their research on the macro economic impact of the coronavirus pandemic. The study by Jribi et.al (2020), unlike others was focused solely on the determination of the impact of the COVID-19 lockdown on Tunisian consumer awareness, attitudes and behaviours related to food wastage. As a lot of studies were focused on the economic consequences of the pandemic, Gayithri and Anura (2020) and Kum Fai et.al (2020) analysed the psychological and behavioural causes of panic buying following the pandemic. Both studies suggest that panic buying is influenced by individual perception, fear and a coping behaviour used to relive the anxiety individuals had about the pandemic.

Karpmanet.al (2020) explained that the response of any government to the economic consequences of the pandemic is crucial for the sustenance of the health and wellbeing of families as major sectors of the economy are closed. Such response undertaken by any government is necessary to maintain the support of the public on the stay at home order which is essential to the much needed recovery. This response from the government arose from the fact that even before the pandemic and the stay-at-home order was issued, millions of families all over the world had little or no savings for emergency and struggled to meet up with their basic needs. Governments are paying a lot of attention on a wide range of policy interventions meant to mitigate the economic and social costs of the pandemic. Most discussions on panic buying are recent and driven by the recent outbreak of COVID-19 pandemic, however, the discussions are based on different opinions by academics, medical personnel's and reporters (Yuen et.al, 2020) and as a result, focused their study on reviewing, identifying and synthesizing the causes of panic buying.

Baker et.al (2020) examined how household consumption responds to pandemic, using transaction-level household financial data to analyse the impact of the coronavirus. While exploring heterogeneous data across demographics and income, the results reveal that initially, spending increased (the result of panic buying) especially in retail, food and credit card spending but was followed by a sharp decline in household spending as the pandemic progressed. Crawford *et al.* (2020) opined that during the pandemic, if households spend much of their budget on essentials, they have less opportunity to adjust to a lower income by spending without incurring hardship and hence this is likely to run down its savings. Evaluating the socio-economic impact of COVID-19 on individuals, Martinet.al (2020) developed a micro-economic model to estimate the direct impact of the lockdown on household income, consumption, savings and poverty. The study concluded that the lockdown led to a significant drop in household savings and consumption in San Francisco Bay Area and the average recovery period for individuals is a year.

In Russia, Kartseva and Kuznetsova (2020) estimated the impact of the pandemic on the Russian labour market and household income. The outcome of the study demonstrates that the pandemic significantly affected the Russian labour market. The study shows that workers are made vulnerable in the labour market as they are being faced with the risk of dismissal and are also vulnerable to income reduction as a result of the pandemic. This situation is similar in labour market all over the world, as due to the lockdown imposed by workers all over the world are made vulnerable to potential job loss, where they do not receive social benefits and are made to rely on their savings and assistance from social protection. In India, Anant (2020) concludes that given the Indian population, coupled with

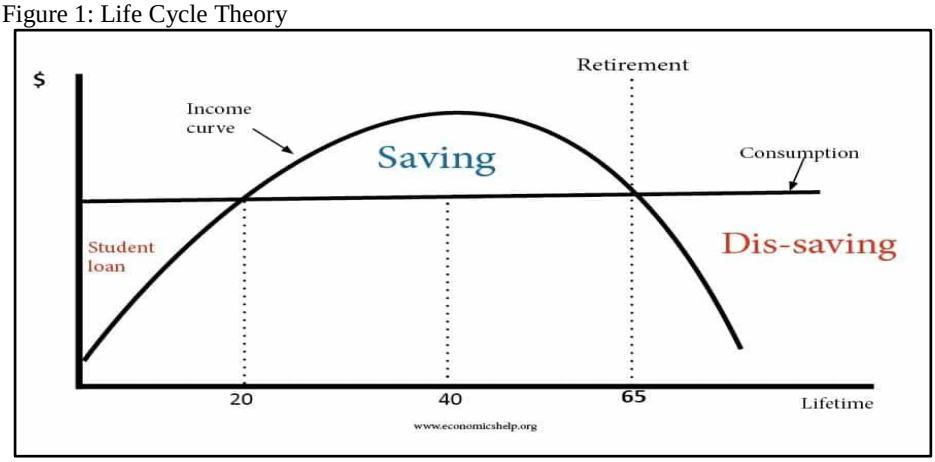
the unstable situation of the economy in the pre-pandemic period, the lockdown would be highly disruptive. The response of policy makers therefore was on how to minimize the overall impact of the shock of the lock down on the individuals.

The lockdown due to the coronavirus pandemic has revealed the vulnerability of Nigerians due to the absence of national social welfare program that could offer assistance to individuals and families in need such as food stamps, unemployment compensation, disaster relief and educational assistance (Peterson, 2020). The literature have revealed that as the governments initiated lockdown in their countries, restricting the economic activities, individuals sprang into panic and started stocking their houses with food and basic supply. This act however put a lot of strains on their income and savings.

Theoretical Framework

There are lots of theories on consumption and savings because they are both very important variables which have prompted different research over the years. This study adopts the life cycle theory of consumption, which was developed by Frank Modigliani and Alberto Ando in 1957. The theory postulates that individual/household consumption does not depend on current income but on the income expected to be earned over their life time. It explains that individuals tailor their consumption pattern based on what they expect to earn over their life time (Angus, 2005). The theory opines that consumption and savings decision of individuals reflects an attempt of distributing consumption over the individual's life cycle, which is restrained by income earned over their life span. In this theory, consumption is solely determined by perceived income to be earned over the years. Consumption is said to be held stable in the early years of individual life to allow for savings which is to be used in the future years. It is further explained in the graph below

Figure 1: Life Cycle Theory



Source: Pettinger (2019)

From the graph above, the savings done by individuals in their working years is equal to their dissaving in their earlier years and at retirement. The curve shows the pattern of the income earned by the individual with consumption slightly increasing over the years. The

graph demonstrates that as the individual earns income during his working years, he maintains consumption at a level lower than income which allows for savings which is to be used at retirement when income falls below consumption.

As the world was faced by the COVID-19 pandemic which necessitated the lock down in countries, people went into panic mode and increased their expenditure to buy food and other basic necessities they would need to survive the lock down order. However, as panic buying led to increase in expenditure of households, income decreased drastically as most income generating activities were put on hold by the lockdown and as a result, individuals had no other choice than to use some or all of their savings to purchase basic necessities. Based on the life cycle hypothesis, people save in their youth to cater for their needs at retirement; however, as a result of the lockdown necessitated by the COVID-19 pandemic, which led to panic buying, the savings of individuals meant for retirement have been greatly depleted. This shows the deficiency of the life cycle hypothesis since it does not account for unforeseen circumstances like pandemic that could potentially disrupt the hypothesis.

3. Methodology

Despite the continuous spread of Corona virus, the rate of panic buying cannot be under estimated as some states are still considering returning back to lockdown. By implication, the micro economic effect of panic buying on individual savings will still persist any time soon, due to anticipation of Covid-19 second wave. In analysing the microeconomic effect of panic buying, this study used cross sectional data obtained from Minna metropolitan area (see Baker *e .al*., 2020; Jribi *et al.*, 2020; Gayithri & Anura, 2020; Yuen *et al.*, 2020). The data were obtained from household heads that are the sole heads of the families' saddled with the responsibilities of daily upkeep on consumption. The study used availability sampling techniques due movement control order and recent culture of social distancing, to sample 384 household heads using Saunders et al (2007) from a total population of 29,459 household heads in Minna, given the average family size on 6 persons living in household (see Samuel, Samson & Joel, 2018). Minna metropolitan was chosen due to its compliance to total lockdown, with a series of extension, as Niger State was among the first set of states to enforce lockdown with a minimal corona virus cases. The variables emphasized on this study include amount of saving used up in purchases of goods and services in a month as dependent variable, perception on increase and decrease in prices with binary outcome, price differential measured by changes in prices, expenditure is measured by cost on groceries, utilities, household goods, transport services as independent variables. Other household characteristics include age measured by number of years, gender with binary outcome of one male and zero otherwise, family size measured by number of dependants under a household, education based on number of years schooling and occupation measured by binary with one for skilled and zero otherwise (Jribi, *et al*., 2020; Yuen, et al., 2020; Baker, et al., 2020; Crawford, et al., 2020; Kartseva & Kuznetsova, 2020).

The amount of saving can be estimated given the regression model below:

$$SV_i = \beta_1 + \beta_2 PC_i + \beta_3 PD_i + \beta_4 EP_i + \beta_5 AG_i + \beta_6 GN_i + \beta_7 FZ_i + \beta_8 ED_i + \beta_9 Oc_i + \mu \quad \ldots\ldots 1$$

Where SV is the amount of saving used, PC is signifies perception, PD denotes price differential, EP stands for expenditure, AG and GN are household age and gender

respectively. Also, FZ refers to family size, ED indicates educational, OC represents occupation, with i and μ refering to individual observation and error term respectively. Expenditure in this case is associated with panic buying as it consists of many items within the household reach. In order to avoid measurement error in the expenditure variable as it component consist of other variables, and as well to stay clear of endogeneity problem, the two stages least square (2SLS) was emphasized. The models are written as

Stage I: $EP_i = \propto_0 + \propto_1 GR_i + \propto_2 UT_i + \propto_3 HG_i + \propto_4 TS_i + \mu$……..2

Where expenditure (EP) is a function of groceries (GR), utilities (UT), household goods (HG), and transport services (TS) in the first stage, while the second is expressed as:

Stage II: $SV_i = \gamma_1 + \gamma_2 EP_i + \gamma_3 X_i + \mu$ ……..3

Where X denotes other explanatory variables

4. Results

The result consist of both descriptive and inferential statistics

Table 1: Descriptive Statistics

Variable	mean	Standard deviation	skewness	Kurtosis
Saving	34.90	22.72	0.93	2.83
Perception	0.71	0.45	0.87	1.76
Price differential	1.73	0.57	0.16	2.95
Expenditure	26.93	1.64	-0.09	1.78
Age	35.31	11.38	0.71	3.09
Gender	0.58	0.49	-0.33	1.11
Family size	3.73	3.02	1.20	3.67
Education	2.03	1.08	0.81	3.13
Occupation	0.54	0.49	-0.16	1.02
Groceries	53.90	15.00	0.29	2.83
Utility	38.19	10.94	0.54	2.90
Household goods	35.08	10.59	0.65	4.27
Transport Service	38.19	10.80	0.50	2.81

Source: Author computation

The result in Table 1 shows the mean of the saving rate to be 34.90 with a standard deviation of 22.72 which indicates individuals with a certain level of saving despite its low. Larger individuals believed that changes in price affects the nature of purchase which either increases or decreases. These changes lead to price differential as the mean indicates 1.79, whereas the average expenditure rate is 26.93 and a difference of 1.64. Other characteristics include an average age of 35.31 with majority of them being male and having an average family of 4. They mostly have acquired a basic education and are mostly skilled workers. This enables them to buy some classes of goods for their upkeep. However, the data distribution is accurate with Skewness and Kurtosis values within the acceptable range.

Table 2: Regression Result

Variable	Saving	Saving	Expenditure	2SLS
Perception	-5.0020**	-5.4281**		-4.4745
	(2.4891)	(2.4516)		(2.7948)
Price differential	-3.3670*	-3.4291*		-3.5267*
	(1.9711)	(1.9401)		(1.9780)
Expenditure	-3.0568***	-2.1296***		0.6220
	(0.6908)	(0.7592)		(3.7200)
Age		-0.1314		-0.1467
		(0.0978)		(0.1016)
Gender		-3.6678		-3.9444*
		(2.2575)		(2.3257)
Family size		-1.5896***		2.3563**
		(0.4833)		(1.1269)
Education		3.0345***		2.7850**
		(1.1197)		(1.1860)
Occupation		4.1998		6.8643
		(2.8052)		(4.5344)
Groceries			0.0103*	0.0103*
			(0.0055)	(0.0055)
Utility			-0.0112	-0.0112
			(0.0076)	(0.0076)
Household goods			0.0248***	0.0248***
			(0.0078)	0.0078
Transport Service			-0.0072	-0.0072
			(0.0077)	(0.0077)
N	384	384	384	384

*Notes: Robust standard errors are in parentheses, P values: significance *10%; **5%; ***1%*
Source: Author computation

The regression result in Table 2 shows perception to be negative and significant, indicating that an increase or decrease due to panic buying negatively affects individual savings. This implies that if individual's perception on the rise in the prices of goods which sprung panic buying due to the lockdown increases, savings decreases as it will be used up to purchase such goods. Under this situation, individual tends to purchase goods at the expense of time. Price differential and expenditure on goods are negative and significant with 3.4 and 2.1 effects on amount saved respectively. This signifies that price changes during the period of lockdown led to people buying more of items than expected. It further shows that the variation in prices experienced during the COVID-19 lockdown affect individual savings inversely. Family size is equally negative and significant, which indicates that an increase in family decreases amount of savings. Increase in family leads to depletion of savings as more resources are used up to cater for the addition to the family, since most sources of income have been impaired due to the lockdown. During the Covid-19, people with larger families have their savings to be more used up than the way it used to be. The coefficient for

education is positive and significant; this indicates that the respondents are highly enlightened based on the advantages on savings. In fact, most of them have made it a culture for precaution against any unforeseen circumstance, which is now useful during the lockdown period.

Table 3: Regression Result with Perception as defined Group

	Dependent Variable: Saving Rates		Dependent Variable: Expenditure	
	Perception = 1	Perception = 0	Perception = 1	Perception = 0
Price differential	0.6433208 (4.440185)	-0.1750667 (5.556409)		
Expenditure	-3.591218 (2.367907)	-3.973084 (3.573051)		
Age	-0.1838215 (.12478)	-0.0714705 (0.1782789)		
Gender	-5.014845* (2.633303)	-1.287933 (4.747373)		
Family size	-2.377805* (1.276226)	-2.128813 (1.923176)		
Education	2.447374* (1.304882)	4.080672* (2.390565)		
Occupation	9.427474 (6.260752)	0.5098227 (5.814044)		
Groceries			0.0158** (0.0071)	-0.0001 (0.0086)
Utility			-0.0045 (0.0095)	-0.0203 (0.0126)
Household goods			0.0212** (0.0097)	0.0255* (0.0134)
Transport Service			-0.0083 (0.0096)	-0.0085 (0.0128)
N	269	115	269	115

*Notes: Robust standard errors are in parentheses, P values: significance *10%; **5%; ***1%*
Source: Author computation

However for the endogenous model, the dependent variable was expenditure with a set of regressors. Expenses on groceries and household goods were positive and significant, which suggest that household spending on those items were paramount during the lockdown than any other expenses. The panic buying by households were concentrated on necessity goods than luxury goods as they are most needed for surviving the lockdown. The expenditure on utility and transport service were negative and not significant because total lockdown has rendered the service provider impossible as their operations are concerned. The result for the 2SLS shows price deferential and gender to be negative and significant. What is surprising is the family size result as it indicates a positive and significant result, in this case as the family size increases, the tendency of increasing their savings is higher. But education still

remains positive and significant, likewise expenditure on groceries and household goods were still positive.

The result in Table 3 shows a group difference on household perception on price fluctuations. For those that perceived increase in price due to lockdown have gender and family size to be negative and significant, with a probability of being male to be *-5.01 and a decrease in savings by 2.37; whereas education is positive and significant. This indicates that those who perceived increase in price spend more of their savings during the lockdown when there is an increase to the family size. In the case of those that presumed no changes in price only found education to be positive and significant. Looking at the endogenous expenditure model, groceries and household goods were positive and significant, which shows that they are the items that influenced expenditure for those that perceived changes in prices. But those with the belief of no changes in price have only household goods to only influence their expenditure.

5. Conclusion and Recommendation

In analysing the micro economic effect of panic buying on individual savings due to lockdown experienced during the coronavirus pandemic, the result shows that the component of panic buying notably perception of price fluctuation, price differential and expenditure do negatively affect the individual saving rate. Also, groceries and household goods do account for most of the expenses during the lockdown given the endogenous expenditure model. The study therefore recommends a standard measure of maintaining a static price to avoid price fluctuation. Price differential that warrant panic buying through supply shortage should be addressed by the authorities by embarking on mobile and community sales of essential commodities, so as to forestall movement. In addition, individuals should increase their level of savings so as not to be hit hard by any future circumstances that may have negative impact on income as is the case with the COVID-19 pandemic.

Reference

Anant, B. M. (2020). Impact of COVID-19 pandemic on Indian economy. *UGC Care Journal*, 31(44).

Amit, K. & Richard, D. (2020). Indian lockdown: View: A new economic order is afoot. Retrieved from: https://m.economictimes.com/news/economy/policy/view-a-new-economic- order-is-afoot/articleshow/75374832.cms

Angus, D. (2020). Franco Modigliani and the Life Cycle Theory of Consumption. Retrieved from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=686475

Bankole (2020). Vanguard Newspaper, March 25, 2020. Amidst panic buying, experts urge Nigerians to buy basic needs. Retrieved from: https://www.vanguardngr.com/2020/03/amidst-panic-buying-experts-urge-nigerians-to-buy-basic-needs/

Baker, S. R., Farrokhnia, R. A., Meyer, S., Pagel, M. & Yannelis, C. (2020). How does household spending respond to an epidemic? Consumption during the 2020 COVID-19 pandemic. *National Bureau of Economic Research, Cambridge, MA 01238*

Crawford, R., Davenport, A., Robert, J. & Levell, P. (2020). Household spending and coronavirus. Economic and Social Research Council.

Chukwuka, O. & Mma, A. E. (2020). Understanding the impact of the COVID-19 outbreak on the Nigerian economy. Retrieved from: https://www.brookings.edu/blog/africa-in-focus/2020/04/08/understanding-the-impact-of-the-covid-19-outbreak-on-the-nigerian-economy/

Coronavirus perceptions and economic anxiety. Retrieved from: https://voxeu.org/article/coronavirus-perceptions-and-economic-anxiety

Thiemo, F., Lukas H., Johannes H. & Chris R. (2020). CDC. (2020). Coronavirus (COVID-19). Retrieved from: https://www.cdc.gov/coronavirus/2019-ncov/index.html

Emilie, K.B. (2020). COVID-19 (coronavirus): Panic buying and its impact on global health supply chains. Retrieved from: https://blogs.worldbank.org/health/covid-19-coronavirus-panic-buying-and-its-impact-global-health-supply-chains

Garbe, L., Rau, R. & Toppe, T. (2020). Influence of perceived threat of Covid-19 and HEXACO personality traits on toilet paper stockpiling. https://doi.org/10.1371/journal.pone.0234232

Gayithri, N.K. & Anura, D.Z. (2020). COVID-19 and panic buying: An examination of the impact of behavioural biases. *SSRN Electronic Journal*

James, C. (2020). Panic buying. Retrieved from: https://www.investopedia.com/terms/p/panicbuying.asp

Jribi, S., Ismail, B.H., Doggui, D. & Debbabi, H. (2020). COVID-19 virus outbreak lockdown: What impacts on household food wastage? *Environment, Development and Sustainability (2020) 22:3939-3955. https://doi.org/10.1007/s10668-020-00740-y*

Kartseva, M. & Kuznetsova, P.O. (2020). The economic consequences of the coronavirus pandemic: which groups will suffer more in terms of loss of employment and income? *Population and Economics 4(2): 26-33.* Doi 10.3897/popecon.4.e53194

Kum, F.Y., Xueqin, W., Fei, M. & Kevin, X.L. (2020). The psychological causes of panic buying following a health crisis. *International Journal of Environmental Research and Public Health 2020,17,3513*

Kate, H. (2020). Coronavirus turns UK into a nation of savers. Retrieved from: https://www.independent.co.uk/money/spend-save/coronavirus-saving-emergency-furloughed-income-redundant-recession-bills-a9509816.html

Martin, A., Hallegatte, S., Markhvida, M. & Walsh B. (2020). Socio-Economic impacts of COVID-19 on household consumption and poverty.

Michael, K., Stephen, Z., Dulce, G. & Kenney, G.M. (2020). The COVID-19 pandemic is straining families' abilities to afford basic needs. Low-income and Hispanic families the hardest hit.

Megan, H. (2020). Can global food systems cope with COVID-19 panic buying? Retrieved from: https://thepigsite.com/articles/can-global-food-systems-cope-with-covid-19-panic-buying

Paolo, S. & Andrea, G. (2020). The economics of a pandemic: the case of COVID-19. European Research Council

Pettinger, T. (2019). Life cycle hypothesis. Retreve from https://www.economicshelp.org/blog/27080/concepts/life-cycle-hypothesis/

Saunders, M., Lewis, P. & Thornhill, A. (2007). Research methods for business students (4th Edition ed.). Harlow: Prentice Hall.

Samuel, O. A., Samson, F. O. & Joel, O. (2018) Households' socio-economic characteristics and urban travel behaviours in Minna metropolis, Nigeria. *International Journal of Research Publications,* 9(1)

Toyin, A. (2020). Coronavirus: Nigeria's informal economy hit hard. Retrieved from: https://www.theafricareport.com/28694/coronavirus-effects-of-covid-19-on-nigerias-informal-economy/

Thelma, A. (2020). COVID-19 and the Informal Sector in Nigeria: The Socio- Economic Cost Implications. Retrieved from: https://businessday.ng/opinion/article/covid-19-and-the-informal-sector-in-nigeria-the-socio-economic-cost-implications/

Tobiloba(2020). From pandemic to poverty: Nigeria's future with COVID-19. Retrieved from: https://nairametrics.com/2020/05/17/from-pandemic-to-poverty-nigerias-future-with-covid-19/

Uche, N. (2020). COVID-19 reveals that many Nigerians have no emergency savings. Retrieved from: https://nairametrics.com/2020/05/28/covid-19-reveals-that-many-nigerians-have-no-emergency-savings/