




# The Influence of Delayed Payment Obligation on Purchase Decision of Household: Evidence from Nigerian Data

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## ABSTRACT

The purpose of this study is to examine how delayed payment obligation influences household purchase decision in Nigeria. Unlike the large of existing studies, this study used binary regression model estimation and draws a dataset of 2019 General Household Survey with sample size of 2911 household for the analysis. The stylized facts from the dataset revealed more share of rural household than their counterparts in urban household. Interestingly, the results show that delayed payment obligation is positive and significantly influence purchase decision of household in Nigeria. But when the household is disaggregated into rural and urban household, the result shows that some household that barrowed from friends and family and household that reduced food consumption expenditure have positive and significant influence on purchase decision in both rural and urban household while household that received assistance from friends and family has positive and significant influence on purchase decision by rural household. This study recommends delayed payment obligation for important factor to drive purchase decision by household. This could be achieved through policy formulation that will promote delayed payment obligation.

## Keywords

Delayed payment; Household; strategies; binary regression model

**JEL Classifications:** D4; EH5; O15; P16

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## INTRODUCTION

The significance of delayed payment obligation are well acknowledged in the literature. For instance, [Heller & Lengwiler \(2003\)](#) and [Adelino et al. \(2013\)](#) established that delayed payment obligation promote cash management and create pressures on the suppliers to deliver high quality goods and service on a given time. [Abotaleb & El-adaway \(2017\)](#) explained that delayed payment obligation helps to track and manage business liabilities. The second factor that could be important in understanding the dynamics of delayed payment obligation in Nigeria is the degree of purchase decision. Some studies in the extant literature ([Agarwal et al., 2006](#); [Tracy & Wright, 2012](#); [Fuster & Willen, 2013](#); [Adelino et al., 2013](#)) revealed that purchase decision contribute to lower default risk of hybrid mortgage at the rate reset, helps to lower the rates of default in prime adjustable-rate mortgages and lower re-default rates in modified loans.

According to [Qi et al. \(2021\)](#) purchase decision helps household to identify their needs, which in turn helps the household to have adequate plan for growth. These facts mentioned above, implies that when there is an adequate purchase decision, the trickledown effect is that there will be a lower default risk of mortgage that have a positive and significant impact on the standard of living of the local dwellers. Apart from the fact that Nigeria is a developing country with more than 200 million people, the country has been found to be endowed with both human and diverse natural resources. With consistent improvement on gross domestic product of \$448.12 billion since 2019, it is easily acknowledged that economic potentials on the country can no longer be regarded insignificant ([African Development Bank, 2020](#)). These endowments including consistent improvement on gross domestic product overtime would have guaranteed household in Nigeria a purchasing decision and adequate delayed payment obligation. This has caused a serious worry in terms of stagnation in various business activities and slow in business expansion ([Ojonta, 2023](#)).

[Haughwout et al. \(2009\)](#) also attest to the fact and established that the purchase decision can be harnessed as a means of understanding how buyers think, feel, and decide businesses. However, it has been observed that despite the high rates of dependency ratio and poverty in Nigeria, the country appears not to have determined how best to its purchase decision to help household fill the gap in the market by differentiating needed products from obsolete products. Indeed, some studies in the literature ([Nwosu et al., 2018](#); [Ojonta & Ogbuabor, 2021](#)) revealed that poor purchase decision by household is becoming worrisome especially for business transactions. It has been found that when business transactions are affected due to poor purchase

decision, the effect will not only cause poor living standard but also call up negative effects in marketing and sales (Ojonta & Ogbuabor, 2021).

The poor purchase decision in Nigeria as documented in the literature may be blamed on several factors. Some of these factors include high rate of fake products (Gautam et al., 2009; Klantschnig & Huang, 2019; Adigwe et al., 2022), since household ordinarily would not go to unreliable products; corruption and poor governance, which generally render household purchase decision irrelevant relative to other parts of the world (Aldcroft, 2014; Hope, 2017). Purchase decision in this context is referred to as process of thought that led a buyer from observing a need, sourcing option and make choice for desired product and brand (Mangleburg, 1990; N. V. S. Prasad & Prasad, 2007; Guneri et al., 2008; S. Prasad et al., 2019; Dikcius et al., 2020). This study measures purchase decision in binary where yes=1 if household has purchase decision and No=0, if household do not have purchase decision.

However, some factors that could be negative in explaining the dynamics of purchase decision by household in developing countries like Nigeria are the high poverty and low income. Indeed, some current studies (Abdul-Rahman et al., 2006; Nwosu et al., 2018) have shown that the high poverty constitute huge effect on purchase decision by household. The high rate of poverty in Nigeria may have somewhat accounted for the country's poor purchase decision development. Often this poor purchase decision by household has been traced to the level of business skill acquisition since business skills have a way of reducing various form of decision in a business (Odeh & Battaineh, 2002). This means that a large scope still requires to be covered towards a more comprehensive understanding of this relationship in Nigeria.

Recent studies in extant literature (Christiano et al., 1996; deRitis et al., 2010; Arabi, 2019; Okiemy & Mbongo, 2021) revealed factors that influencing the performance of purchase decision. These studies emphasized that opportunity cost is a significant factor that influences purchase decision by household. According to Yogesh & Yesha (2014), social media opinions is an important driver of purchase decision by household. Cameron & Worswick (2003)'s investigation on the determinants of purchase decision attests the fact that social media form large opinion of purchase decisions. The importance of delay payment obligation and how such payment obligation influences purchase decision of household is yet to be studied. This forms the knowledge gap this study seeks to address in the literature.

This study intends to fill the knowledge gap by considering the importance of delay payment obligation and how such payment obligation influences purchase decision of household. The focus of the study is to get further evidence on purchase

decision and delayed payment obligation by household in Nigeria. In doing so, this study is guided by the following research questions: i) how does delay payment obligation influences purchase decision of household in Nigeria? and ii) how does other factors influence purchase decision of household in Nigeria? The specific objectives of study include: i) to examine influence of delay payment obligation on purchase decision of household in Nigeria; and ii) to investigate influence of other factors on purchase decision of household in Nigeria.

The delayed payment obligation in this context is defined as act of putting hindrances for all monies payable by the applicant under contract under terms and condition (Kwon et al., 2010). The study measures delayed payment obligation in binary where 1=yes if household delayed payment obligation and 0=No if household do not delay payment obligation. The other relevant sections that should be considered in this study are: The next section focuses on general overview of related literature such as empirical and various theories, while the third Section describes the dataset and the method section of the study analyses. The results are presented and exhaustively discussed in the fourth section. The last fifth section discusses the conclusion of the paper.

## **LITERATURE REVIEW**

### ***Theoretical Literature***

Some theories underpin this study. These are monetary theory of business cycles, theory of demand shock, theory of total spending and consumer choice theory. The monetary theory of business cycles as propounded by Hawtrey (1927) explained the process formations of the theory. The theory explained that the changes in effective demand and changes in bank are the process formation of monetary theory of business cycles. The theory established that the creation of credit contributes to increase in money supply and such supply affects the effective demand. This implies that when effective demand is affected resulting from money supply, it increases a sufficient cash liquidity chasing fewer commodities thereby causing devaluation of currency. The trickledown effect is that when there is devaluation of currency, the purchasing decision would be influenced while the irrevocable payment obligation would tend to be delayed. The theory also established that the monetary factors are responsible for changes in overall economic activities. This suggests that monetary factors have a major key role for the occurrence of business cycles. Empirical studies like Arora et al. (2019) are accurate in regards of this theory.

The theory of demand shock by Lorenzoni (2009) explained the behavior of consumers and changes in aggregate productivity. The theory is of twofold. First is

that the consumers take time to identify permanent changes in aggregate productivity irrespective of good information they may have on the present state of individual firm where they work. The theory establishes that the consumers have a limited information on the issue of long-run determinants of aggregate productivity. Second is that the consumers have access to public information that is significant to estimate the long-run productivity such as technological innovations and financial market prices. The theory also imposes restrictions on the relative responses of output, employment, and inflation. The limited information on the issue of long-run determinants of aggregate productivity could cause moral hazard of asymmetric or unbalanced information. The situation where the determinant of aggregate productivity is unbalanced, the effect is that the purchase decision and delayed payment obligation will also be affected due to the limited information. Besides, limited information has been identified as a pervasive phenomenon in several developing countries across the world, especially in Nigeria (Azuh et al., 2017). Empirical studies, like del Rio-Chanona et al. (2020), are underpinned the viewpoint of this theory of demand delay.

The theory of human behavior is propounded by Runyon & Stewart (1987). The theory represents the beliefs held regarding the nature of human beings and the causes of their behaviour. The theory established that human beings can be viewed from many perspectives. This suggests that if human beings are viewed from an economic perspective, marketers may come up with economic incentive to influence them. But, if however, from a social perspective, marketers will as well come up with social incentive to influence them. Thus, studies like Omotoyinbo et al. (2017) emphasizes the need for dealing with the nature of human beings and the causes of their behaviour. The study revealed that human beings and the cause of their behaviour contributes to the dynamism of purchasing decision and delayed payment obligation.

The consumer choice theory as propounded by Armstrong (1958) established that money spending is based on individual preferences and budget constraint. The theorist shows how individuals make choices subject to how much income they have available to spend and the prices of goods and services. The assumptions of this theory: First is that individuals choose to purchase things based on agreed decision about what will make such individual happy (utility maximization). Second, the theory assumes that human being can never be satisfied no matter how much such individuals have spent. The theory affirms that the amount of pleasure an individual has from each commodity decreases with the more such individual consumes.

### ***Empirical Literature***

Some studies have been carried out on how different payment criteria and its determinants drive growth in various perspective both within and outside Nigeria. In Nigerian context, [Onwujekwe et al. \(2010\)](#) and [Ezeoke et al. \(2012\)](#) found that payment strategy is a significant driver for access to healthcare and cost of illness to different population groups. Another study by [Etiaba et al. \(2015\)](#) found that cash payment significantly impact health management. Evidence also revealed that payment strategy impacts positively and significantly on the disease treatment ([Ewelukwa et al., 2013](#); [Obembe et al., 2020](#)).

Other studies outside Nigeria, like [Kochar \(1999\)](#), revealed that labour payment, as a strategy, significantly influences income delay of household enterprises. [Cameron & Worswick \(2003\)](#) estimated the impact of augmented labour supply on household payment strategy. Their findings revealed that augmented labour supply has essential role in influencing household payment strategy. Another study by [Corbett \(1988\)](#) examined how payment strategies impact on household famine in Africa. [Mehtar et al. \(2016\)](#) also revealed that transfer payment has a significant impact on drought climate delay in India. Overall, the different approach of the related empirical literature concerning how difference aspects of payment strategies influence other factors in various perspectives show that the influence of delay payment obligation on purchase decision by household is still not to be investigated. Herein lies the new contribution of our study to the literature.

## **METHOD**

### ***Data Description***

The household dataset drawn from the sample of households were interviewed in the post-harvest visit of wave 4 of the General Household Survey-panel (GHS-P) in 2018/19. The GHS- Panel sample of 2911 households with contact details are the data for the household delayed payment and these were included in this study. The sample of household is a representative nationally across all the 6 geo-political zones of the country in both urban and rural households that made up the country. The geo-political zones include North-central, North-east, North-west, South-south, South-east and South-west. Given the abundance of auxiliary data found in the GHS- Panel, a balanced sampling method (using the cube method) was used.

The balanced sampling method makes it possible to select a random sample that still maintain the properties of the frame across selected explanatory variables. This study also considers the problems of spurious regression which include outliers

and homogeneity. A few outliers of 10 were not considered from the observation to ensure that we do not get to the trap of spurious result. Overall, the sample survey was balanced across several relevant dimensions such as geo-political zone, sector, household delayed payment and household payment decision.

### ***Theoretical Framework***

This study framework is anchored on the consumer choice theory as propounded by [Armstrong \(1958\)](#). The theory established that money spending is based on individual preferences and budget constraint. The theorist shows how individuals make choices subject to how much income they have available to spend and the prices of goods and services. The theory is built on three assumptions: First is that individuals choose to purchase things based on agreed decision about what will make such individual happy (utility maximization). Second, the theory assumes that human being can never be satisfied no matter how much such individuals have spent and third, the theory affirms that the amount of pleasure an individual has from each commodity decreases with the more such individual consumes.

The theory was established in the premises of two different group of individuals and choice of their consumption. These individuals have a uniform purchase decision, but some have utility maximization in purchase decision, others do not have utility satisfaction even at the position of consuming up to the marginal utility. Thus, some household believe on delayed payment obligation regardless of the purchase decisions. However, the theorist establish to situation in which individuals can be viewed from many perspectives even though that such view was not caused by purchase decision. The situations where household is willing to embark on delay payment obligation despite their purchase decision can greatly cause a serious impediment on household choice of spending on consumption.

When household spending that is based on individual preferences and budget constraint can come by because of purchase decision, the trickledown effect is that the household will face a problem of adverse selection or moral hazard due to delayed payment obligation. This problem if continue will adversely affect the purchase decision by household ([Kochar, 1999](#)). In other hand, delayed payment obligation by household is important to deter the purchase decision. The theory propounded by [Armstrong \(1958\)](#) indicates that if household could not deal with many perspectives through which individuals can be viewed can lead to negative influence on the delayed payment obligations by household. Thus, the consumer choice theory ([Armstrong, 1958](#)) brought support of the underlying approach in this study.

### Model Specification

This study adopted binary regression approach which is a non-linear probability model to explore the association between a dependent variable and set of independent variables. In a case of one independent variable  $X$  with a case of dependent variable of one binary outcome variable  $Y$ , the logistic model predicts the log-odds of dependent variable ( $Y$ ) from set of independent variables ( $X$ ). The prediction represents a natural logarithm of odds of  $Y$ . The model can be shown based on Peng et al. (2002):

$$\ln\left(\frac{\pi}{1-\pi}\right) = \alpha + \beta x \quad (1)$$

Following the equation (1), the left hands side of the equality represents the log-odds. The logistic regression model has a log-odds that is linear in  $X$ . Hence:

$$\pi(x) = E(Y | X) = \frac{e^{\alpha + \beta x}}{1 + e^{\alpha + \beta x}} \quad (2)$$

Where  $\pi$  represents the probability of the result of interest given that  $X=x$  while  $\alpha$  denotes the parameter that represents the constant. The  $\beta$  is the slope parameter, the set of  $X$  captures either dummy or categorical variable. The value ( $Y$ ) is always dummy or categorical. The equation (1) can be transformed and extended to linear regression from simple to multiple as follows:

$$\ln\left(\frac{\pi}{1-\pi}\right) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k \quad (3)$$

Therefore

$$\pi(x) = \frac{e^{\alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k}}{1 + e^{\alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k}} \quad (4)$$

Where  $\pi$  represents the event of probability. The  $\alpha$  denotes the  $Y$ - constant,  $\beta$ s are the model parameters of the slope, and  $X$ s are sets of independent variables. The  $Y$ - constant,  $\alpha$ , and model parameters  $\beta$ s are estimated through the technique of maximum likelihood estimator (MLE).

**Table 1.**

*Measurement of variables in the Model*

Variable Name	Variable Label	Coding	Expected Sign
Dependent variable: Purchase decision (Y)	PURCHASE	Yes=1; No=0	Unapplicable
Market price (X1)	MARKET	Yes=Increase; No=Decrease	(+/-)
Engaged in additional income generating activities (X2)	INCOME	1= yes; 0= No	(+/-)
Received assistance from friends and family (X3)	ASSISTANCE	1= yes; 0= No	(+/-)
Borrowed from friends and family (X4)	BORROWED	1= yes; 0= No	(+/-)
Delayed payment (X5)	PAYMENT	1= yes; 0= No	(+/-)



Variable Name	Variable Label	Coding	Expected Sign
Sold harvest in advance (X6)	ADVANCE	1= yes; 0= No	(+/-)
Reduced food consumption (X7)	FOOD	1= yes; 0= No	(+/-)
Reduced nonfood consumption (X8)	NONFOOD	1= yes; 0= No	(+/-)
Relied on savings (X9)	SAVINGS	1= yes; 0= No	(+/-)
Did nothing (X10)	NOTHING	1= yes; 0= No	(+/-)
Sector (X11)	SECTOR	1=urban; 0=No	(+/-)

Source: Author's compilation from National Bureau of Statistics (2019) using IBM® SPSS® Statistics.

- Y denoting PURCHASE is a dependent variable. The variable is defined as purchase decision. It is a binary variable assigned yes=1 if the household has purchase decision and No=0, if the household do not have purchase decision. [Etiaba et al. \(2015\)](#) showed a positive coefficient for purchase decision, but [Onwujekwe et al. \(2010\)](#) had the opposite which is a negative coefficient. Hence, our a priori expected sign shows that the coefficient of delayed payment could neither be positive nor negative.

The independent variables as presented and assigned in equation (1) are discussed in Table 1. The set of independent variables are measured as follows:

- $X_1$  denoting MARKET is defined as changes in commodity market price. It is also a binary variable that takes a value of Yes=1 if the household had an increase in the commodity market price and No=0 if the household had a decrease in commodity market price. Following [Rothan & Byrareddy \(2020\)](#), a priori expected sign in changes in commodity market price is either positive or negative.

- $X_2$  denoting INCOME said Yes=1 if the household engaged in additional income generating activities while No=0 if the household do not engaged in additional income generating activities. [Amzat et al. \(2020\)](#)'s study shows a positive coefficient for additional income generating activities, while [Tuccio et al. \(2019\)](#)'s findings show the opposite which is coefficient with negative a priori. Thus, the expectation of our a priori is that the coefficient for additional income generating activities could be either negative or positive.

- $X_3$  denoting ASSISTANCE is a dummy variable assigned Yes=1 which implied that the household received assistance from friends and family but No=0 if household do not received assistance from friends and family. Following [McDonald \(1999\)](#), the expectation of a priori for assistance by household is positive.

- $X_4$  represents BORROWED which implies that the household borrowed from friend and family. It is also a dummy variable assigned yes=1 which represent that household borrowed from friends and family and No=0 if the household did not borrow. Following [Ojonta & Ogbuabor \(2021\)](#), the expectation a priori for access to borrow is positive.

- $X_5$  denoting PAYMENT represents delayed payment obligation by household. It is a dummy variable that takes a value of yes=1 if the household delayed payment obligation while No=0 if household do not delay payment obligation. Following [Ezeoke et al. \(2012\)](#), the expected a priori for delayed payment obligation is positive.
- $X_6$  denoting ADVANCE represents sold harvest in advance by household. It is a dummy variable that takes a value of yes=1 if the household sold harvest in advance while the No=0 if the household do not. Following [Ezeoke et al. \(2012\)](#), the expected a priori for harvest in advance is positive.
- $X_7$  denoting FOOD represents reduced food consumption expenditure by household. It is a dummy variable that takes a value of yes=1 if the household food consumption expenditure is reduced but No=0 if food consumption expenditure by household do not reduced. Following [Ezeoke et al. \(2012\)](#), the expected a priori for food consumption expenditure is positive.
- $X_8$  denoting NONFOOD represents reduced nonfood consumption expenditure by household. It is a dummy variable that takes a value of yes=1 if the household nonfood consumption expenditure is reduced but No=0 if nonfood consumption expenditure by household do not reduced. The nonfood consumption expenditures include expenditures on utility bills, tax, vehicles, cooking utensils and household properties. Following [Ezeoke et al. \(2012\)](#), the expected a priori for nonfood consumption expenditure is positive.
- $X_9$  denoting SAVINGS represents relied on savings. It is a dummy variable that takes a value of yes=1 if the household is relying on their savings but No=0 if household do not rely on their savings. Following [Ezeoke et al. \(2012\)](#), the expected a priori for savings is positive.
- $X_{10}$  represents NOTHING which implies that household did nothing. It is a dummy variable that takes a value of yes=1 if household did nothing but No=0 if household did something. Following [Ezeoke et al. \(2012\)](#), the expected a priori for doing something is positive.
- $X_{11}$  represents SECTOR denotes sector. It is a dummy variable that takes a value of yes=1 if household located in urban area but No=0 if household is located in rural area. Following [Ezeoke et al. \(2012\)](#), the expected a priori for household location is positive.

## RESULT AND DISCUSSION

### Descriptive Analysis

Table 2 represents the household characteristics. The household characteristics shows different tasks and household factors. The table captures ten different characteristics of household which represent independent variables. As shown in table 2, the sample size of the data is 2911 observations, and the data set were classified into two groups including details about their percentage share.

**Table 2**

*Household Characteristics*

<b>MARKET</b>			<b>INCOME</b>		
	Observations	% share		Observations	% share
Decreased	390	13.4	No	2742	94.2
Increased	2521	86.6	Yes	169	5.8
<b>ASSISTANCE</b>			<b>BORROWED</b>		
	Observations	% share		Observations	% share
No	2651	91.1	No	2677	92
Yes	260	8.9	Yes	234	8
<b>PAYMENT</b>			<b>FOOD</b>		
	Observations	% share		Observations	% share
No	2762	94.9	No	1767	60.7
Yes	149	5.1	Yes	1144	39.3
<b>SAVINGS</b>			<b>ASVANCE</b>		
	Observations	% share		Observations	% share
No	2286	78.5	No	2772	95.2
Yes	625	21.5	Yes	139	4.8
<b>NOTHING</b>			<b>NONFOOD</b>		
	Observations	% share		Observations	% share
No	2436	83.7	No	2375	81.6
Yes	475	16.3	Yes	536	18.4

Source: Author's compilation from National Bureau of Statistics (2019) using IBM® SPSS® Statistics.

For instance, the market price by household has two groups, the first represents increase in market price and the second decrease in market price. The first observation has a total of 2521 observations with 86.6 percent individuals believe for increased market price while 390 observations with 13.4 percent individuals believe for decreased market price. Other characteristics such as household engaging in additional income generating activities is classified into two groups that is assigned Yes for 1 and No for 0. The sample size for Yes groups is 169 observations represent 5.8 percent and the second group which is No with 2742 observations represent 94.2 percent. Household receiving assistance from family and friends is also classified into

two groups which are Yes or No group. The Yes group with 2651 observations represent 91.1 percentage share of the observation while the second group which is No has 260 observations to represent less share worth about 8.9 percent.

Borrowed from friends and family has 234 observations for yes group with 5 percent share while the second group which is No has 2677 observations which is representing a share of 95 percent. Purchase decision has 2762 for No and 149 for yes representing a share of 94.9 and 5.1 percent respectively. But, sold harvest in advance by household recorded 2772 observations for No and 139 observations for yes with a share of 95.2 and 4.8 percent respectively. Again, reduced food consumption captures 1767 observations for No group with 60.7 percent share while 1144 observations were captured for yes group to represent 39.3 percent share. Considering the reduced nonfood consumption, the first group which is No captures 2375 observations which represents 81.6 percent of the observations while the second group which is yes holds observations worth of 536 with 18.4 percent of the observations.

Relied on savings by household has 2286 observations for the groups assigned No with 78.5 percent representing the observations while the second groups which is yes captures 625 observations and 21.5 percent share of observations. The table also provided the observations and percentage share of household that did nothing in terms of coping strategies. The first groups which is No which was not in support has 2436 observations with 83.7 percent share while the second groups which is yes have 475 observations with 16.3 percent share of observations.

**Table 3**

*Percentage Distribution of Household Purchase decision and delayed Payment obligation by sector*

Purchase decision	Payment obligation	
	No: Frequency (%)	Yes: Frequency (%)
No	95.33	28
Urban Area	94.06	40
Rural Area	96.61	16
Yes	4.67	72
Urban Area	5.94	60
Rural Area	3.39	84
Total	100	100
Urban Area	100	100
Rural Area	100	100

Source: Author's computation from National Bureau of Statistics (2019) using IBM® SPSS® Statistics.

Table 3 provided an empirical report for percentage share of household delayed payment obligation according to their purchase decision by sector in Nigeria. The

table shows that when the purchase decision of household is “No”, the household will have more share of “No” delayed payment obligation and less share of Yes delayed payment obligation for both rural and urban household. This implies that when household purchase is undecided, more of household who do not support delayed payment obligation increases while household that supports delayed payment obligation declines. The result of this table is in line with previous studies (Heller & Lengwiler, 2003; Adelino et al., 2013) attest the fact. Conversely, the table also revealed that when the purchase decision of household is “Yes”, the household will have more share of “Yes” delayed payment obligation and less share of “No” delayed payment obligation for both urban and rural household. The outcome of the table agreed with previous studies (Agarwal et al., 2006; Tracy & Wright, 2012; Fuster & Willen, 2013; Adelino et al., 2013). The current study attests that purchase decision by household plays an important role in increasing the delayed payment obligation by household.

### **Diagnostic Checks**

This study further investigated a diagnostic test for model suitability in Table 4. The suitability test depends on the results provided by pseudo  $R$ -square and statistical level in the model. Conversely, the statistical level for this study indicates that the model is positive at 1% level of significance. The pseudo  $R^2$  for Cox & Snell is equal to 0.086 and Nagelkerke = 0.259 are accurate. The test is in conformity values got by Aziz et al. (2017) and Astari & Kismiantini (2019). Additionally, the percentage of correct prediction shows that 95.7% is accurately predicted by the model. In conclusion, the diagnostic checks show that the adopted model is suitable for inference.

**Table 4**

*Tests for Model Suitability*

Test Statistics	Value	Significance
-2log-Likelihood	908.207	
Cox and Snell $R^2$	0.088	
Nagelkerke $R^2$	0.265	
Chi-square	268.799***	0.000
Percentage correct prediction	95.7	
Number of Observations	2911	

Source: Authors. Note: \*\*\* denotes significance at 1% level.

Moreover, this study also considered the importance of classification tests in our model. We further estimated classification tests as indicated in Table 5. The classification results for the binary logistic model reveal that the Visible Error Rate (VER) is 12.67% while the overall Visible Correct Classification Rate (VCCR) is 87.33%. Those findings confirm that the model is adequate in terms of classification. These results are consistent with study by El-Habil & El-Jazzar (2014) and Abdulqader (2017).

**Table 5***Final classification results for the binary logistic model*

Test	Delayed	Not-Delayed	Total
Delayed	123	26	149
Not-Delayed	2759	3	2762
VER		12.67%	
VCCR		87.33%	

Notes: VER: represents Visible Error Rate while VCCR: represents Visible Correct Classification Rate

### Estimation Results

Table 6 presents the estimates of the binary logistic regression model. The values for variables coefficient and their corresponding p-values for the two dummies of delayed payment obligation by household: i.e. household had delayed payment obligation and household do not have delayed payment obligation as bench mark category variable. The table indicates that intercept of model has a negative coefficient which is statistically significant at 1% level. This shows that the intercept has a negative impact on purchase decision by household in Nigeria.

**Table 6***General estimation results of binary regression model*

Dependent variable: PURCHASE				
Variables	B	S.E.	P-value	Exp(B)
INTERCEPT	(-4.535)***	0.443	0.000	0.011
SECTOR	(0.534)***	0.195	0.006	1.705
MARKET	0.461	0.441	0.297	1.585
INCOME	-0.001	0.44	0.999	0.999
ASSISTANCE	(0.494)*	0.262	0.059	1.639
BORROWED	(1.568)***	0.236	0.000	4.798
PAYMENT	(3.245)***	0.519	0.000	25.655
ADVANCE	0.38	0.41	0.353	1.463
FOOD	(1.182)***	0.228	0.000	3.26
NONFOOD	-0.114	0.236	0.63	0.892
SAVINGS	-0.259	0.249	0.297	0.772
NOTHING	(-2.229)**	1.018	0.029	0.108

Notes: Observation: 2911, pseudo R<sup>2</sup>: 0.259, correctly predicted: 95.7, dependent variable: purchase decision. Abbreviation: 1= B: relative risk ratio value, which represents the estimated coefficients, 2=S.E: denotes robust standard error, 3= p-value: represents probability value of estimated model, 4= Exp(B): denotes exponential of B (coefficient).\*, \*\* and \*\*\* indicate the significance level at 5% and 1% respectively.

The table indicates that delayed payment obligation by household (PAYMENT) has a positive coefficient of 3.275, which is statistically significant at 1% level. This implies that the higher the delayed payment obligation, the higher will be the tendency for household to make purchase decision. The 26.452 is odds-ratio to 1 in favour of purchase decision by household. This result is consistent with previous

studies (Nwosu et al., 2018; Ojonta et al., 2021; Ojonta & Ogbuabor, 2021) that found that delayed payment obligation by household influences purchase decision. Thus, this study also find that delayed payment obligation is a relevant factor that drives purchase decision by household in Nigeria.

The findings in Table 6 also show that assistance from family and friends (ASSISTANCE) by household has a positive impact on purchase decision. The impact is statistically significant at 5% level. This result is in conformity with other study (Onyeaghala & Olajide, 2020). The odds ratio of 1.69 to 1 in favour of purchase decision by household is also consistent with this result. At this point, the findings have shown that two variables, delayed payment and assistance from friend and family are significant for purchase decision by household in Nigeria. These results are very interesting because the two variables would likely cause a serious impediment during this period of Corona virus diseases. In Nigeria, Omaka-Amari et al. (2020) demonstrated that the covid-19 pandemic has brought in so many distractions and unethical behaviour to social life such as social and physical distancing, regular wearing of face mask and constant rubbing of sanitizer. These unusual practices have severely impacted on household purchase decisions. The stylized facts that have emerged in this paper suggests that for household to abide by such practice that are conflicting with social life, there is an urgent support for government to address the challenges of delayed payment obligations facing household for purchase decisions.

The findings in Table 6 further show that borrowing from family and friends (BORROWED) also positively and significantly impact on purchase decision by household at 1% level of significance. The result is consistent with the odds-ratios of 4.35 to 1 in favour of purchase decisions by household. The results are also in conformity with the study conducted by (Haggblade et al., 2010). The study revealed positive coefficients for the variable studied. Additionally, the table shows that reduced food consumption expenditure (FOOD) also positively and significantly at 1% level influences the purchase decisions by household. This implies that the higher the household reduced food consumption expenditure, the higher will be the tendency for purchase decisions. This result also supports the theory of consumption propounded by Keynes. The theorist established that consumption is a function of income while purchase decision is driven by income. Therefore, income in this context is synonymous with purchase decision. The result suggests that the coefficient of -2.282 and p-value of 0.025 at 5% significant level shows that household with nothing is not an important factor driven the purchase decision by household in Nigeria.

The table shows that (SECTOR) in urban areas is an important driver of purchase decision. The table also revealed that the coefficient 0.584 and p-value of 0.006 at 1% significant level implies that household in urban areas has positive impact on purchase decision by household in Nigeria. Thus, the table also reveals that had nothing (NOTHING) has a negative impact on the purchase decision by household at 5% level of significant. Finally, the table revealed that changes in commodity market price (MARKET), sold harvest in advance (ADVANCE), engaged in additional income generating activities (INCOME), reduced nonfood consumption expenditure (NONFOOD), relied on savings (SAVINGS) by household are insignificant and do not have any important role in influencing purchase decision.

## **CONCLUSION**

Using a binary regression model, we estimated the determinants of purchase decisions by household in Nigeria. The following factors such purchase decision, changes in commodity market price, borrowing from friends and family, sold harvest in advance, reduced food consumption expenditure, reduced nonfood consumption expenditure, relied on savings, engaged in additional income generating activities, assistance from friends and family and doing nothing by household are included in the model estimation. The findings show that delayed payment obligation by household is an important driver for purchase decision in urban and rural dwellers. This implication of the findings indicates that the higher the household involves in purchase decision, the higher the tendency for the household would delay payment obligation. Other factors like borrowed from friends and family and reduced food consumption expenditure by household have positive and significant influence on purchase decision. This also implies that reduced food consumption is an important driver for purchase decision by household. The study also shows that assistance from friends and family has positive influence on the purchase decision. The positive influence revealed that household assistance from friends and family plays important role in driving the purchase decision in Nigeria.

To promote purchase decision of household especially in urban and rural areas, the following policy recommendation would be of great support. The policies that promote delayed payment obligation of household not only for urban dwellers but also the rural areas should be adequately encouraged by government. For instance, government should ensure that there is awareness through public emancipation to engage on public seminars and workshops pertaining on payment obligation in both urban and rural areas. Another significant area is to establish training through



international collaborations to unveil the required strategies to enhance purchase decision of household.

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