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# Irish-Potato Farming in Plateau State, Nigeria: A Profitability Analysis

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**Abstract:** Notable efforts are on-going to improve Irish potato production in Plateau State, the major producer of the crop in Nigeria. However, little attention has been given to the profitability of the enterprise while the determinants of profitability level are scanty in the literature. Thus, paper analyses the profitability of Irish-potato farming using primary data from 252 Irish potato farmers in Plateau State, Nigeria. Cost structure and profitability level of Irish potato farming were investigated using farm budgeting technique while probit regression model was used to examine the determinants of profitability level of Irish potato farms. Irish potato farming was found to be profitable with most (53.97%) farmers at high profitability level. The net farm income was ₦604, 245.81 per hectare with returns per naira spent of ₦1.70. The cost structure showed that costs of seeds, labour and fertilizer made up the largest share of the total cost of production per hectare. The probability that a farm will be at high profitability level was determined by agrochemicals, sex, farm size and labour at 1% level, respectively. It was concluded that increasing agrochemicals, reducing farm size and labour and being a male farmer will improve profitability level of Irish potato farms. This study recommended that increased use of agrochemicals and more efficient use of labour and farm land be encouraged among potato farmers increase their profitability level.

**Keywords:** Profitability level, Cost structure, Farm budgeting, Irish potato, Net farm income.

## 1.0 Introduction

Irish potato (*Solanum tuberosum* L.) is the world's fourth largest food crop in terms of production after maize, rice and wheat (FAOSTAT, 2016). It is thus, the largest non-cereal food crop cultivated in the world. It was first cultivated in South America (Zhang et al., 2016) and easily substitutes for cereals in many developing countries; making Irish potato very crucial for food security. Global output of Irish potato is about 388 million metric tonnes with a yield per hectare of 20,110.8 kg/ha. Over half of the global output is produced in developing countries, almost one-third of the output is harvested in China and India alone while China is the leading producer in the world with 99 million metric tonnes (FAOSTAT, 2019).

Irish potato production in Africa is estimated at 25 million metric tonnes with yield per hectare of 13,215.4 kg/ha, and per capita consumption (fresh and processed) of 18.76 kg/capita/year (FAOSTAT, 2019). Algeria is the leading producer of Irish potato in Africa with a production 4,606,400 metric tonnes, followed by Egypt (4,325,480 metric tonnes) and South Africa (2,450,540 metric tonnes). Nigeria's production of 1,284,370 metric tonnes ranks seventh in Africa after Morocco (1,924,870 metric tonnes), Tanzania (1,749,201 metric tonnes) and Kenya, the fourth to sixth largest African producers (FAOSTAT, 2019).

Irish potato is a major root crop in Nigeria and is by far the most efficient tuber crop in terms of tuber yield and days to maturity. It matures in about 80-90 days as compared to 9-12 months for yam and cassava (Sanusi and Babatunde, 2017). Nigeria's production level has been on the increase with yield

per hectare of 3,720.1 kg/ha (FAOSTAT, 2019). Domestic consumption of both fresh and processed Irish potato stands at 4.63 kg/capita (FAOSTAT, 2015). Irish potato was introduced to Nigeria in the early 19th Century when it was first planted in the Jos Plateau (Taïy et al., 2017; Tadesse et al., 2018). Plateau State has an average maximum temperature of 31.7°C and a minimum temperature of 15°C. The highest temperatures are recorded in the months of March to May while the lowest temperatures are between December and January (Harmattan months). Thus, a rainfall season running from April to October and a dry season with a cold dry harmattan wind that prevails over the state from November to February. This gives the state a near temperate climatic condition that favours the cultivation of crops like Irish potato which require an optimum temperature of 15°C for tuber formation (Okonkwo et al., 2009). The Jos-Plateau meets this condition in both rainy and dry season, thus making the crop one of the most important root crops grown on the Jos-Plateau. It is currently widely cultivated in commercial quantities in Plateau state. The State is notably the most important area for potato production in Nigeria as over 80% of Irish potato produced in the country come from Plateau State (Muhammed et al., 2016). Other Irish potato producing states in Nigeria include Kaduna and Taraba States. The crop has become a marketable crop used for different purposes. It is consumed majorly fresh as a vegetable, processed into other potato food products (snacks, fries, crisp) and used as food ingredients. Non-food uses include: starch for industry, animal feed, glue and re-used as seed tubers (Ojo, 2013).

Due to the increasing number of uses to which Irish potato can be put, production activities have been increasing. Profitability is the main objective of production and is important to every farmer, as it will not only improve farmers' income and livelihood but would also influence the farmers' adoption of new technologies (Ashley-Dejo et al, 2016). A study carried out by Jwanya et al. (2014) examined the economics of Irish potato production in Plateau State. The result showed that Irish potato production in Plateau State was a profitable lucrative enterprise with robust economic viability as indicated by the values of Gross Margin (N655.88), benefits –cost ratio (2.64) and sensitivity analysis ration (2.16). The finding of the profitability analysis of Jwanya et al. (2014) is in consonance with other studies on Irish potato, some of these included the works of Nyagaka, Obare and Nguyo (2009), Obare, Nyagaka and Nguyo (2010), and Njuguna, Munyua and Makal (2014). The prevailing constraints to potato production and value chain in Nigeria would also affect the profitability level of the enterprise. Ugonna et al. (2013) and Tolno et al. (2016), identified some of the constraints to include: pests and diseases, climate related factors, lack of credit, inadequate supply of quality seed, poor storage, high cost of production inputs and marketing problem, poor irrigation and, labour shortage. Thus, measuring profitability levels is necessary in order to determine if the enterprise is worth committing scare resources. Moreover, the salient factors that determine profitability level are important in order for farmers to

know where they should focus their attention on to be highly profitable.

Empirical studies on the profitability of potato and other tuber crops in other States of Nigeria, apart from Plateau State, exist (Muhammad et al, 2016; Adekanye and Oyekale, 2015; Ogunleye and Adeyemo, 2017) while only Jwanya et al. (2014) was found to assess profitability of Irish potato in Plateau State, with the finding that it is a profitable enterprise. Most studies assessed the determinants of production and efficiency rather than the profitability of potato (Jatbong et al, 2018; Gebru et al, 2017; Tolno et al, 2016; Adekanye and Oyekale, 2015). Determinants of Irish potato profitability were therefore inferred from these empirical studies to include: education, sex, age, farm experience, farm size, agrochemicals, household size, marital status, type of land ownership and cooperative membership. The sex of the farmer is expected to affect profitability level due to the tedious nature of Irish potato farming and female farmers' cultural restrictions to production inputs access (Gebru et al, 2017). Age and farm experience are expected to increase the probability of being highly profitable due to knowledge of farm operations and ability to manage risks. Similarly, years of formal education and cooperative membership are expected to increase the probability of being highly profitable due to ability to understand and adopt innovation and exposure to knowledge of improved farm practices (Jatbong et al, 2018; Gebru et al, 2017; Sher et al, 2016 and Tolno et al, 2016). Larger household size and farm size may

increase the probability of being highly profitable due to more family labour availability and economies of scale, respectively but this is not conclusive in the literature (Sebatta et al. 2015; Okoye et al, 2008).

Notable efforts are on-going to improve Irish potato production by the Potato Research Centre, Kuru-Vom in Plateau State through seeds multiplication, training of farmers, Irish potato research, breeding and selection of new varieties that are capable of responding to improved cultural practices (Zemba et al., 2013). In the same vein, several studies have been carried out on Irish potato in Plateau State which focused on the productivity, resources use, marketing, nutrition, output, climatic conditions and price dynamics (Lenka et al., 2006; Nweze et al., 2006; Kudi et al., 2008; Dimlong, 2012; Wuyep et al., 2013; Zemba et al., 2013; Panwal 2018). Little attention has been given to the profitability of the enterprise as in the studies of Okonkwo et al. (2009); Jwanya et al. (2014). Hence, the following research questions are raised: Is Irish potato farming profitable? What is the profitability level of Irish potato farmers? What is the cost structure of Irish potato farms? What are the factors affecting profitability level of Irish potato farmers? This research therefore aims to assess the profitability level, cost structure and determinants of profitability level of Irish potato farms in Plateau State, Nigeria.

## **2.0 Material and Methods**

This study was carried out in Plateau State, located in North Central Nigeria. Plateau State produces about three-quarters of the country's Irish potatoes

according to PADP (2002) and FAOSTAT (2020). The State lies between latitude 80 N and 100 N and longitude 70 E and 110 E of the prime meridian. Average maximum temperature is about 31.70C (usually between March-May) and minimum temperature about 150C (usually between December-January) while the rainfall season runs from April to October. Thus, the weather mimics a temperate climatic condition which favours Irish potato production. Other crops produced in the State include: cabbage, onions, carrots, lettuce, cucumber and green beans.

Primary data was collected based on the 2018 farming season using a well-structured and validated questionnaire. A multi-stage sampling method was used for the survey. In the first stage, two (2) local government areas were randomly selected out of the five major Irish potato producing local government areas of Plateau State. These were Bokkos and Mangu. The next stage involved a simple random sampling of three (3) districts each from the list of eight (8) districts in each of the two (2) local government areas. This gave a total of six (6) districts from which three (3) villages each were selected randomly from the list of villages, giving a total of eighteen (18) villages. The last stage involved a random sampling of Irish potato farmers from the 18 villages in proportion to their size. Thus, a total of 260 Irish potato farmers were selected but only 252 gave complete information and were used for data analysis.

Data were analysed using descriptive statistics, farm budgetary technique and

probit regression model. Descriptive statistics was used to profile the socioeconomic characteristics of the Irish potato farmers and their level of profitability (high or low) while the farm budgetary technique, also called net farm income analysis, was used to examine the profitability level and cost structure of Irish potato production. The probit regression model was used to analyse the determinants of the profitability level of the Irish potato farms, that is, the probability of having high level of profitability in Irish potato farming in the study area.

**A. Farm Budgeting**

The net farm income derived from Irish potato production is explicitly stated following Bathon *et al.* (2016);

$$NFI = GR - (TFC + TVC) \tag{1}$$

Where;

NFI is the Net farm income (₦), GR is the Gross revenue (₦), TFC is the Total fixed costs (₦) and TVC is the Total variable costs (₦).

$$TC = TFC + TVC \tag{2}$$

$$TR = P.Q \tag{3}$$

Where;

P = Price of Irish potato produced in Naira per kilogram, Q = Output of Irish potato produced in kilogram.

Further, the Benefit-cost Ratio (BCR) was also estimated following Udensi *et al.*, 2017; Sujan *et al.*, 2017.

$$\text{Benefit-cost Ratio} = \frac{\text{Total Revenue}}{\text{Total Cost}} \tag{4}$$

The Rate of Returns on investment (ROI) was also estimated following Ogunleye and Adeyemo (2017).

$$\text{Return on investment} = \frac{\text{Net farm income}}{\text{Total Cost}} \tag{5}$$

$$\text{The Net Farm income ratio} = \frac{\text{Net farm income}}{\text{Total revenue}} \tag{6}$$

**B. Probit Regression Model**

The probit regression model was used to analyze the determinants of the level of profitability of Irish potato farming. The farmers were categorized as being at low or high profitability level. The mean profitability was used, thus, all farmers that had less than the mean profitability were categorized as being at low profitability while those who had up to the mean and above were at high profitability. Hence, the dependent variable; profitability; was dichotomous. The method of maximum likelihood estimation of the probit model automatically accounts for the heteroskedasticity problem (Masuku *et al.*, 2015). The probit model is implicitly expressed as:

$$\text{Pr}(y = 1|x) = \Phi(\beta_i x_i) \tag{7}$$

Where;

$\Phi$  is the standard cumulative normal distribution with mean 0 and variance 1.  $\beta_i$  are the estimated coefficients of the model. Y is a function of  $X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, e_i$

Therefore, equation (7) is transformed as:

$$P(Y = 1|x) = \beta_1 + \beta_2 x_1 \tag{Gujarati, 2004}$$

Then the model is explicitly stated as:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_{12} x_{12} + e_i \tag{8}$$

Where;

Y = Profitability level (1= high profitability level, 0= low profitability level),

X<sub>1</sub> = Years of formal education (Years),  
 X<sub>2</sub>= Access to credit (1=credit access; 0=otherwise),  
 X<sub>3</sub> = Marital status (1=Married; 0=Otherwise),  
 X<sub>4</sub> = Farming experience (Years),  
 X<sub>5</sub> = Farm size (Ha),  
 X<sub>6</sub> = Household size (Number of persons in the household),  
 X<sub>7</sub> = Quantity of Irish potato seed planted (Kg),

X<sub>8</sub>= Labour (mandays)  
 X<sub>9</sub>=Sex (1=Male; 0=Female)  
 X<sub>10</sub>= Type of cooperative (1=producer, 0= otherwise),  
 X<sub>11</sub>= Land tenure system (1=Inheritance; 0=otherwise),  
 X<sub>12</sub>=Agrochemicals (litres)  
 $\beta_1 - \beta_{12}$  = Parameters to be estimated  
 e<sub>i</sub>= Error term.

Table 1: Description of variables and their a prior expectation

Variable	Measurement	A prior expectation
Educational level of farmers	Years	+
Access to Credit	Dummy: 1=Yes; 0=No	+
Marital status	Dummy: 1=Married; 0=otherwise	
Farming Experience	Years	+
Farm size	Ha	-/+
Household size	Number of persons	+/-
Quantity of seed	Kg	-
Labour	Manday	-
Sex	Dummy: 1=male; 0=female	-/+
Type of cooperative	Dummy: 1=producer; 0=otherwise	+
Land tenure system	Dummy: 1=owned; 0=otherwise	+
Agrochemicals	Litres	+

### 3.0 Results and Discussions

#### Socioeconomic Characteristics by Irish Potato Farmers by Profitability Levels

The socio-economics characteristics of the Irish Potato farmers in the study area across profitability levels are depicted in Table 2. The result showed that Irish potato farming is dominated by male farmers (71.43%). This could be attributed to the tedious nature of Irish potato farming and female farmers' restricted access to production inputs; particularly land ownership due to cultural barriers. Male farmers also make up the larger part (89.66%) of those at high profitability level. This is similar to what holds in many African countries as Gebru *et al* (2017) also reported 88.8% males among surveyed potato farmers in Ethiopia. Age is an important consideration in the production and profitability of farmers. Farmers within the age category of 41-50 constituted the majority of Irish potato farmers with 38.89% and also the majority of those at high profitability level with 43.97%. The mean age of the farmers was 48±11 years, indicating that Irish-potato farming in the study area was dominated by an agile workforce that could handle any of the cultural operations in potato production. In addition, since the farmers are still in their active working age, it thus suggests that they will be able to combine many operations that can further reduce cost as opposed to if they were old and declined in physical ability. Jatbong *et al.* (2018) also found potato farmers in Plateau State to be about 47 years. Credit empowers farmers to carry out timely operations in

agriculture. However, most (69.84%) of the farmers had no access to credit, implying that most farm operations in the study area were funded by farmers' savings. This is contrary to Sher *et al.* (2016) who found credit access for most farmers. Furthermore, majority of the farmers (73.81%) were married, of which 74.14% of farmers within this category were at high profitability level. This is a similar scenario in most African countries where family responsibilities are highly regarded. Households size is a critical consideration for family labour in farming activities for African countries, due to the possibility of substituting or complementing hired labour with family labour for farm activities. The mean household size is approximately 11±5 persons, indicating a relatively large household size. This finding contradicts that of Gebru *et al* (2017) who found mean household size of less than 10 persons. Education is an important factor in farmer's adoption of farm innovation which improves their profitability. In terms of years of education, the farmers attained an average of 9±5 years of education with only a small percentage of about 11.90% of the farmers having no formal education. Majority (40.87%) of the farmers had at least 7-12 years of formal education out of which 42.24% were at high profitability level. Thus, suggesting that farmers in the study area are literate. The implication of this finding is that the prospect for the adoption of improved technologies and the ability to use resources more efficiently in Irish potato production is high. That is, the farmers have the capacity to adopt new

innovations and technologies if extended to them. New innovations on the other end come with advantages such as reduced harvesting period and make Irish potato to be available all year round and also receive high revenue. Jatbong *et al* (2018), Gebru *et al* (2017) and Sher *et al.* (2016) also found most potato farmers having primary education or higher. Farming experience enables farmers to apply more efficient measures in their farming operations which lead to higher profitability. The results showed that the farmers were quite experienced in potato farming as over 80% had experience of above 10 years while the average year of potato farming was 18 years. This implies that the farmers were able to employ efficient production methods and also better deal with production risks. Jatbong *et al* (2018) also found that potato farmers had about 18 years of experience on the average. Farm size is also an important factor in profitability since it is assumed that the larger the farm size the more the farmer can take advantage of economies of scale and thus, increase profitability. The results however, showed that the farmers had an average farm size of  $2.3\pm 1$  hectares, implying that most of the farmers were small-scale farmers as categorized by Olayide *et al.* (1980) in Haruna (2010) which put small scale farmers in Nigeria into the category 0.1-6 hectares. This may have negative implications for high level profitability

in potato production. With respect to use of agrochemicals, farmers applied an average of  $454.0\pm 267.6$  litres with majority (33.73%) within the category of 401-600 litres, of which 43.10% were at high profitability level. It is expected that the quantity of agrochemicals used will impact positively on productivity and hence, profitability. Tolno *et al.* (2016) also found that potato farmers in Guinea used about 401 kg/ha of agrochemicals. Similarly, the cooperative membership of farmers is expected to have positive effects on profitability due to the easier access to credit, inputs and information regarding farming activities. In addition, group production and marketing of their farm produce can help them benefit from economies of scale which could impact positively on members' profitability level. Majority of the farmers belonged to producer cooperatives (40.08%), hence, it could have positive implications for their profitability level. Also, the type of ownership of farmland is an important factor in production activities and consequently, profitability. It is expected that farmers who own their land either by purchase or inheritance can make long term investments on the land which could bring about profitability. The results showed that most farmers inherited the land used for Irish potato production (59.92%). This could have positive implications for profitability of the farmers.

Table 2: Socio-economic Characteristics of Irish Potato Farmers Profitability Level

Variable	Low profitability level	High profitability level	Pooled	Mean±SD
<i>Sex</i>				
Female	60 (44.12)	12 (10.34)	72 (28.57)	
Male	76 (55.88)	104 (89.66)	180 (71.43)	
<i>Age (years)</i>				
≤20	3 (2.21)	1 (0.86)	4 (1.59)	
21-30	4 (2.94)	5 (4.31)	9 (3.57)	
31-40	22 (16.18)	26 (22.41)	48 (19.05)	
41-50	47 (34.56)	51 (43.97)	98 (38.89)	
51-60	45 (33.09)	25 (21.55)	70 (27.78)	
61-70	14 (10.29)	6 (5.17)	20 (7.94)	
>70	1 (0.74)	2 (1.72)	3 (1.19)	48±11.02
<i>Access to Credit</i>				
No	98 (72.06)	78 (67.24)	176 (69.84)	
Yes	38 (27.94)	38 (32.76)	76 (30.16)	
<i>Marital Status</i>				
Single	18 (13.24)	24 (20.69)	42 (16.67)	
Married	100 (73.53)	86 (74.14)	186 (73.81)	
Widowed	11 (8.09)	3 (2.59)	14 (5.56)	
Widower	5 (3.68)	1 (0.86)	6 (2.38)	
Divorcee	2 (1.47)	2 (1.72)	4 (1.59)	
<i>Household Size</i>				
1-5	14 (10.29)	12 (10.34)	26 (10.32)	
6-10	47 (34.56)	47 (40.52)	94 (37.30)	
11-15	46(33.82)	46(39.66)	92(36.51)	
>15	29(21.32)	11(9.48)	40(15.87)	11±5.2
<i>Years of formal education</i>				
No formal education	23(16.91)	7(6.03)	30(11.90)	
1-6	29(21.32)	47(40.52)	76(30.16)	
7-12	54(39.71)	49(42.24)	103(40.87)	
>12	30(22.06)	13(11.21)	43(17.06)	9±4.8
<i>Farming Experience (years)</i>				
1-10	34(25.00)	12(10.34)	46(18.25)	
11-20	61(44.85)	55(47.41)	116(46.03)	
>20	41(30.15)	49(42.24)	90(35.71)	18±8
<i>Farm Size (Ha)</i>				
≤1.000	19 (13.97)	13 (11.21)	32 (12.70)	
1.001-2.000	48 (35.29)	69 (59.48)	117 (46.43)	
2.001-3.000	42 (30.88)	30 (25.86)	72 (28.57)	

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>3.000	27 (19.85)	4 (3.45)	31 (12.30)	2.32±0.86
<i>Agrochemicals</i>				
<i>(Litres)</i>				
≤200	27 (19.85)	23 (19.83)	50 (19.84)	
201-400	29 (21.32)	18 (15.52)	47 (18.65)	
401-600	35 (25.74)	50 (43.10)	85 (33.73)	
601-800	40 (29.41)	18 (15.52)	58 (23.02)	
>800	5 (3.68)	7 (6.03)	12 (4.76)	454.0±267.6
<i>Type of Co-</i>				
<i>operative</i>				
Consumer	40 (29.41)	36 (31.03)	76 (30.16)	
Producer	63 (46.32)	38 (32.76)	101 (40.08)	
Multipurpose	2 (1.47)	2 (1.72)	4 (1.59)	
Others	31 (22.79)	40 (34.48)	71 (28.17)	
<i>Land Tenure</i>				
<i>System</i>				
Inheritance	77 (56.62)	74 (63.79)	151 (59.92)	
Lease	16 (11.76)	8 (6.90)	24 (9.52)	
Borrowed	6 (4.41)	11 (9.48)	17 (6.75)	
Purchased	27 (19.85)	16 (13.79)	43 (17.06)	
Gift	10 (7.35)	7 (6.03)	17 (6.75)	

Source: Authors computation (2019). Figures in parenthesis are percentages.

### Profitability Level and Cost Structure of Irish Potato Farms

Firstly, the results of the profitability analysis are presented on Table 3, per hectare of Irish potato farming in the study area. The result revealed a net farm income of ₦604, 245.81 per hectare which implies that on the average, an Irish potato farmer in the study area earns a profit of ₦604, 245.81 on one hectare of land per year. This shows that the farmers were able to cover their total expenses with the level of net farm income obtained and had a sizeable proportion as profit, thus implying a profitable enterprise. This is in line with the findings of Okonkwo et al. (2009) and Jwanya et al. (2014) that, Irish potato farming enterprise is profitable.

Similarly, the Benefit-Cost ratio was greater than one (1.70) implying that the returns from Irish potato is economically satisfactory. Hence, for every ₦1 spent/cost incurred, the farmer receives a revenue of ₦1.70, further confirming Irish potato farming as profitable. The return on investment (ROI) of 0.70 showed that the amount realized by farmers on every ₦1 spent on production was ₦0.70 (70 kobo). Also, the NFI ratio which is the profitability ratio was 0.37 implying that for every ₦1 generated in sales of Irish potato; the farmer had ₦0.37 (37kobo) leftover to cover total costs. These results implied that Irish potato production in Plateau state is a profitable and lucrative enterprise.

Table 3: Profitability Analysis per Hectare of Irish Potato Farming

Items	Value per ha (₦)
Total Revenue(A)	<b>1,499,463.51</b>
<i>Variable Cost items:</i>	
Seed	456520.17
Fertilizer	141474.20
Agrochemicals	16471.42
<b>Labour Cost:</b>	
Land preparation	50751.88
Planting	32949.74
Fertilizer-application	25772.54
Weeding	40979.46
Harvesting	44485.32
Total Labour Cost	194938.94
Jute bags	13319.43
Transportation	34759.59
Total Variable Cost (B)	857,483.75
Total Fixed Cost (C)	37,733.95
Total Cost (B +C)	895,217.70
Gross Margin GM= (A-B)	641,979.76
NFI (GM-C)	604,245.81
Benefit-cost ratio (TR/TC)	1.70
ROI(NFI/TC)	0.70
NFI ratio (NFI/TR)	0.37

Note: ₦362.50k (Naira, Nigerian currency) = USD\$1.00 as at October 2019.

Source: Authors computation (2019).

The profile of the Irish potato farmers' profitability level is presented on Table 4 using the average NFI. The result

revealed that more than half the farmers (53.97%) were at high profitability level.

Table 4: Category of Irish potato Farmers based on Profitability Levels

Profitability Level	Frequency	Percentage (%)
High Profitability	136	53.97
Low Profitability	116	46.03
Total	252	100.00
Mean= 604245.8		
S.D = 373611.1		

Source: Authors computation (2019).

The cost structure helps to provide insight into what input constitutes the larger proportion of the total cost production (Bekele *et al.*, 2019). This is to enable Irish potato farmers to adopt a better plan for the farming enterprise. The result in Table 5 showed that the average total variable cost (₦857, 483.75) accounted for about 95.78% of the total cost of production (₦895, 217.70). Fixed costs (₦37, 733.95), on the other hand, accounted for only 4.22% of the total cost of production. This finding confirmed the observation of Olukosi and Erahbor (2005) that the fixed cost of production is usually negligible in subsistence agricultural system. The average cost of seed per

hectare (₦456, 520.17) accounted for 51.00% of the total cost of production and the highest variable cost component, followed by the cost of labour (₦194,938.94) which accounted for 21.78% and fertilizer (₦141,474.20) accounting for 15.80%. This agrees with the findings of Jwanya *et al.* (2014) and Kakuongo *et al.* (2008), that costs of seeds, labour and fertilizer make up the highest proportion of the average total cost of production per hectare of Irish potato and constitute the major challenges in Irish potato industry in most developing African countries. This finding suggests the need for resource use efficiency in Irish potato farming in order to maximize profit.

Table 5: Cost Structure per Hectare of Irish Potato Farming

Items	Cost (₦)	Percentage (%) of Total cost
<b>Variable Cost items:</b>		
Cost of seed	456,520.17	51.00
Cost of Fertilizer	141,474.20	15.80
Cost of Agrochemicals	16,471.42	1.84
Total Labour Cost	194,938.94	21.78
Cost of Jute bags	13,319.43	1.49
Transportation cost	34,759.59	3.88
<b>Total Variable Cost (TVC)</b>	<b>857,483.78</b>	<b>95.78</b>
<b>Fixed Cost:</b>		

Rent on land	37,733.95	4.22
Total Fixed Cost (TFC)	37,733.95	4.22
Total Cost (TVC + TFC)	895,217.70	100.00

Source: Authors Computation (2019).

### Determinants of Profitability Level of Irish Potato Farming

The probit regression estimates for the determinants of profitability level of Irish potato farms in the study area are presented in Table 6. The Wald  $\chi^2$  test for the overall performance of the model indicates that we cannot accept the null hypothesis, that all coefficients are equal to zero. Thus, the coefficients of the probit regression model, just like those of other discrete choice models cannot be interpreted directly. They are transformed into marginal effects, interpreted as the change in predicted probability associated with the changes in the exogenous variables. The results further showed that farm size, labour, sex and agrochemicals significantly determine the probability that Irish potato farmers will have high level of profitability in the study area, at 1% level respectively.

Farm size had a negative influence (-0.1961) on the probability of having high profitability level. This implies that a hectare increase in the farm size of the farmers reduces the probability of the farmer being highly profitable by 19.61%. In other words, the larger the farm size, the lower the probability of being highly profitable. This may be attributed to farmers cultivating more farmland than they can manage; thus, leading to inefficiency in production and consequently affecting their profitability. This finding is contrary to

a priori expectation but similar to the results of Sebatta et al. (2015) who found that cultivating larger farmland leads to lower profitability levels. Similarly, labour input was negative (-0.0086) and in influencing the profitability level of Irish potato farming. Hence, an additional one unit of labour used reduces the probability of the farmer having a high profitability level by 0.86%. This could arise especially when the farmer relies on some form of hired labour (communal labour as observed in the study area) given the number of persons involved and the cost attached to this labour. This increases the cost of production and in turn affects the profitability of the farmer. The result is in line with a priori expectation; and similar to that of Aheisibwe et al. (2017) who found that labour input had a negative significant influence on the profitability of smallholder farmers.

On the other hand, being a male farmer had a positive (0.3782) relationship with the probability of having a high profitability level. This implies that male farmers in the study area had a 37.82% higher chance to increase their profitability level than their female counterparts. This could be due to the amount of energy and drudgery involved in the traditional system of farming practised in the area. Moreover, women have less access to land, labour supply and other production resources

due to cultural prejudice. Men are also more likely to participate in most farm activities thereby reducing their cost of production, particularly labour. Juma (2013) found similar results on the relationship of gender to increase the probability of being profitable. Similarly, the use of agrochemicals had a positive relationship indicating that for a unit increase in the amounts of

agrochemicals applied, there would be an increase in the probability of the farmer having a high profitability level by a magnitude of 0.06%. This is expected and agrees with Otolaiye et al. (2014) who found that farmers who apply the recommended amounts of chemicals get higher yields which reflect in their profitability level.

Table 5: Probit Regression Estimates for the Determinants of Profitability level

Profitability	Coefficient	Marginal effects	Std. Err.	z-value	P> z
Constant	0.1199		0.4291	0.28	0.780
Years of education	0.0030	0.0009 ns	0.0211	0.14	0.888
Access to credit	0.2507	0.0769 ns	0.2180	1.15	0.250
Marital status	0.0964	0.0298 ns	0.2879	0.33	0.738
Farming experience	0.0102	0.0032 ns	0.0137	0.74	0.459
Farm size	-0.6389	-0.1961***	0.2022	-3.16	0.002
Household size	-0.0354	-0.0109 ns	0.0221	-1.60	0.110
Seed	0.00003	7.96E-06 ns	0.0001	0.48	0.632
Labour	-0.0281	-0.0086***	0.0103	-2.74	0.006
Sex	1.231	0.3782***	0.2471	4.98	0.000
Type of cooperative	-0.1221	-0.0377 ns	0.2420	-0.50	0.614
Land tenure System	-0.0438	-0.0136 ns	0.3366	-0.13	0.897
Agrochemicals	0.0021	0.0006***	0.0006	3.39	0.001
Wald $\chi^2$ (20) = 75.31					
Prob > $\chi^2$ =0.0000***					
Pseudo R <sup>2</sup> =0.2119					

Source: Authors computation (2019). \*\*\* Significant at 1% probability level and ns not significant.

#### 4.0 Conclusion

Irish potato is widely cultivated in commercial quantities in Plateau state; contributing to the food chain of

households, nutrition, livelihood diversification and income. It was found in this study that Irish potato farming in Plateau State was profitable. Thus, as government ramp up efforts to improve

URL: <http://journals.covenantuniversity.edu.ng/index.php/cjbss>

Irish potato production in Plateau State through seeds multiplication, training of farmers, Irish potato research, breeding and selection of new varieties that are capable of responding to improved cultural practices, efforts should also be stepped up at encouraging new entrants into the enterprise. The factors that determine the profitability level of Irish potato farming are farm size, labour, sex and agrochemicals. Therefore, government and non-governmental agencies should pursue programmes that ensure reduced costs on inputs, particularly agrochemicals, for Irish potato farmers. This will encourage increased use of inputs among the farmers until the recommended levels are met. In addition, proper

management methods of farm size and labour should be encouraged among the farmers. This could be achieved through the use of extension services and cooperatives. Being a male farmer improves the profitability level of a potato farmer. This may indicate that female farmers are being marginalized in the enterprise. Therefore, government should put in place policies that will encourage women farmers' profitability levels. Further, continued advocacy and campaign for women's rights and against noisome cultures that limit women should be undertaken by both government and non-governmental agencies, to increase women farmers' profitability levels.

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# Digital Inclusion and the Elderly: The Case of Internet Banking Use and Non-Use among older Adults in Ekiti State, Nigeria

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**Abstract:** The level of acceptance and use of Internet banking (IB) among older adults is a major issue toward the advancement of banking operations in Nigeria. So far, there has been little or no representation of older adults (60+) in studies conducted on IB adoption and use in Nigeria. Hence, this study investigated the use of IB among older adults in Ekiti State Nigeria. The selection of the sample was made through purposive, convenience, and snowball sampling techniques. Nine local government areas were purposively selected to have a mix of urban and rural areas. Convenience and snowball sampling techniques were used to select 384 older adults, while questionnaires and interviews were used to collect data. Findings reveal that most of the elderly have not adopted the use of IB as they preferred and used the traditional banking system. Those that have adopted IB for their banking transactions averagely used it majorly for funds transfer, bills payment, and airtime top-up. Convenience was the major reason for using IB by the users, while the non-users mentioned unawareness and security concerns as reasons for not using. The users have the intention of continuing using the technology, while the non-users have the intention of using it in the future. It is recommended that banks should intensify efforts at creating awareness of IB as well as its benefits to this group of customers to ensure they are digitally included in the transformations going on in the financial sector.

**Keywords:** Use of Internet Banking, Awareness, Convenience, Digital Inclusion, Older Adults, Ekiti State, Nigeria.

## **1. Introduction**

Over the past decades, technology has permeated every aspect of modern society, while use of various technologies is becoming an integrated part of people's everyday lives. This has resulted in constant technological development, which has made many services and resources available and accessible only through digital means. Along with this trend, virtually every nation of the world is experiencing growth in the number and proportion of the elderly population (United Nations, 2015), which is introducing many new challenges to the society. Some of these challenges have to do with ensuring digital inclusion for every individual. Even though some older adults could use digital technologies, many find themselves without sufficient skills to use these technologies, making them digitally divided. A vast majority of the aged population have less familiarity with digital technologies as they did not have the opportunity to learn and use them during their younger years, having been born when these technologies were not yet commonplace (Morris & Venkatesh, 2000; Smith, 2014). This makes them experience difficulties using facilities, services, and opportunities made available through digital technologies (Lawhon, Ennis, & Lawhon, 1996). Without appropriate skills and interventions, this group of people risks being excluded from participating fully in the present modern society.

WHO (2002) described the elderly people as precious and often ignored population that makes an important contribution to the fabric of the societies. They are a heterogeneous group with different needs and capabilities learning abilities, behaviors, and functional capacity. Aging is associated with a reduction in visual acuity, contrast discrimination, and the precision of eye-movement control. Other constraints related to old age are cognitive impairment, short memory, dementia, weakness, motor control difficulties, and declining ability to learn and retain information on new subjects. It has, however, been noted that digital technologies such as mobile phones, computers, digital home electronic appliances, Internet banking, and many other assistive technologies offer a wide range of solutions for older adults to stay healthy, and live independently, and help counteract the reduced capabilities which are more prevalent with old age (Goyal and Dixit, 2008; Näsi, Räsänen, & Sarpila, 2012; Sayago, Forbes, & Blat, 2012). Hence, as a result of increasing reliance on digital technologies to conduct activities associated with daily living, research to understand the level of adoption and use of these technologies by the elderly is seen as crucial to promote their adoption among the elderly, help them tap from the benefits associated with their use, remain relevant, active, independent and vitally included and engaged in the society, even at old age.

Increasing the development of digital technologies, particularly in the use of the Internet for business transactions, has transformed banking operations from traditional system to an electronic banking (e-banking) system (Aliyu & Tasmin, 2012). E-banking is the use of an automated information system to carry out financial transactions with or without bank customers' physical presence at bank premises or designated locations. E-banking makes financial technologies (banking channels) accessible at customers' convenience without the need to be physically present at the bank premises. Today, nearly all banking activities, ranging from funds transfer, online payments for goods and services, bank statement inquiry, payment of bills, telephone voucher top-up, and many more can be carried out by bank customers through e-banking. E-banking is one of the financial technologies that can assist the financial well-being of the adults as well. There are many types of e-banking: mobile banking, Internet banking (IB), automated teller machine, telebanking, smart card, debit card, credit card, etc. Internet banking is a type of e-banking that is popular due to the convenience of having an online banking account. It is a robust channel designed with the state-of-the-art technology that gives bank customers unlimited access to their accounts remotely and allows them to conveniently perform many bank transactions online real-time.

Many nations of the world are going cashless through exploiting the many benefits of the Internet to improve their economy. It has, however, been

observed that despite many advantages of IB, a cross-section of consumers still does not use the technology (Braganza & Mekoth, 2017; Lee, Kwon, & Schumann, 2005). It is also noted that IB has only been designed with financial inclusion of the mass market in mind, and not for those heavily reliant on cash, for instance, the elderly, and those who live in rural communities where there is no Internet access. For the older generation, who often depend on cash, this new-found dominance of digital banking is an upward struggle. Taking into cognisance the fact that cash is a key part of national infrastructure, and not just a commercial issue, it means a number of bodies have to ensure there is financial inclusion for everyone, including the older people and rural dwellers who may be disadvantaged to use e-banking as a result of their age, background or location. Studies have also shown that, with the immense services made available through different e-banking channels by banks, the older population appears to prefer the execution of financial transactions over the counter in the banking hall to e-banking channels (DutchNews).

Nigeria is experiencing what feels like an inevitable movement towards a cashless society as all banks in Nigeria have exploited the potential of digital technology in expediting service delivery through electronic channels, such as IB, which offers cost-saving potential to both service providers and users. Although few Nigerian older people use the Automated Teller Machine (ATM) and mobile banking through Unstructured Supplementary

Service Data, it has been observed that a high percentage have not keyed into using IB. Many reasons could be attributed to this, which makes it imperative to carry out a study on the level of adoption and use of IB among Nigerian older adults, and to find out the factors that influence or inhibit the use of IB among this population. Studies (e.g. Yousafzai & Yani-de-Soriano, 2012) have explained that the ability to adopt new technology depends on many factors. Older adults are less familiar with the technology, hence their use or non-use of IB would depend on some factors. Also, extensive research has been carried out on the use of IB by bank customers, whereas not much research has considered the non-use of IB. Since IB is a popular and fast-growing delivery channel by banks, a comprehensive study on the use and non-use of IB services would be of great significance to both the academicians and the banking industry alike. This would also provide empirical data to compare the use and non-use of IB among the older population. Thus, this study sought to have a better understanding of issues and concerns of the older population toward the use and non-use of IB. The study investigated the mode of banking preferred by older adults, the frequency of IB usage among them, the feature(s) of IB mostly used by those that have adopted IB, the reasons for use by the users, reasons for non-use by the non-users, and whether the non-IB users have the intention of using the technology in the future.

## **2. Literature Review**

In a bid to catch up with the global trend in ICT developments in banking, the

Central Bank of Nigeria (CBN) introduced the cashless policy in 2012 to curb excesses in the handling of cash in Nigeria. The policy was enforced, not to eliminate the use of cash but, to reduce the volume of cash in circulation and encouraging more electronic-based transactions (payments for goods, services, transfers, etc.) In the same vein, virtually all commercial banks in Nigeria have adopted e-banking to reach out to customers across the world and improve on their service delivery, decongest queues in the banking hall, as well as a key into the CBN policy. Hence, there has been the massive deployment of ATMs, point of sale terminal (POS), development of web-based banking, as well as telephone banking platforms for the use of bank customers in Nigeria.

However, while the use of electronic banking, especially IB has been prevalent among the young generations, observations reveal that technology seems not to be widely used by older adults. Review of literature on technology adoption by older adults reveals numerous studies that have been done to investigate the use of various technologies by older adults. Most of these studies (e.g. Barnard, Bradley, Hodgson, & Lloyd, 2013; Berkowsky, Sharit, & Czaja, 2018; Delello & McWhorter, 2017; Gitlow, 2014; Hill, Betts, & Gardner, 2015; Li & Luximon, 2018; Marston, Kroll, Fink, de Rosario, & Gschwind, 2016; Omotayo, 2015; Peek et al., 2015; Pew Research Centre, 2014; Ronning & Solvberg, 2017) focused on general technology use, with few focusing on IB usage among the older population. However, few studies

(e.g. Camilleri & Grech, 2017; Piiparinen, 2014) have been able to confirm low adoption and use of IB among older adults, even in developed countries where there are availability and easy access to facilities needed to use the technology. For instance, Piiparinen (2014) investigated the attitudes of seniors, aged 65+, using cash services towards online banking in the Turku region, Finland. The research focused on identifying the reasons why cash service customers were not using online banks, and the prospects in their use of online banks. A short structured interview revealed that 70% of the senior customers using the bank's cash services were not using online banks and only 12% of them were interested in starting to use. The findings also showed that the seniors relied on face-to-face services of banks and actively used banks' cash services rather than the online services. The seniors were not willing to use online banks, because they did not have access or knowledge to use the equipment, their physical condition. The study of Camilleri and Grech (2017) focused on the relevance of age categories in explaining IB adoption rates and customers' attitudes towards the service. The study explored the adoption rate of bank customers toward IB in Malta with a relative importance of age categories. The results revealed that, younger adults (aged 18–34) had a high preference for IB, while preference for IB among older adults (aged 50–68) was low, which implies, younger adults used IB more than the older ones. More so, it was noted that, lack of information about IB service, faceless banking, computer

illiteracy, and unavailability of the Internet were the major reasons for the low rate of IB adoption among the older adults. Besides, it was opined that, the non-adopter (mostly the older adults) could be encouraged to accept and use IB if the design interface navigations are made simpler, demonstration guides are made available, and motivations from family and friends.

Some other research works (e.g. Ainin, Lim, & Wee, 2005; Asmi & Ishaya, 2012; Ding, Verma & Iqbal, 2007; Howcroft, Hamilton, & Hewer, 2002; Karjaluo, Mattila, & Pento, 2002; Laukkanen, Sinkkonen, Kivijarvi & Laukkanen, 2007; Mattila, Karjaluo, & Pento, 2003; Rock, Hira, & Loibl, 2010) have found that there is a significant effect of aging on the use of IB. For instance, Ainin, Lim and Wee (2005) found a negative and significant relationship between age and IB adoption, probably because the elderly were more resistant to change and had a negative attitude toward using IB services. Laukkanen, Sinkkonen, Kivijarvi, and Laukkanen (2007) and Asmi and Ishaya (2012) also found that the elderly people, in their studies, preferred to have face-to-face communication with regards to banking, where possible. Likewise, Rock, Hira, and Loibl (2010) showed that older respondents in the USA were less likely to use the Internet as a source of financial information, even though the reasons for this were not security concerns, but that they preferred contact with bank workers due to websites being difficult or confusing. Hill, Beynon-Davies and Williams (2008) study also revealed that, for people over

50 years old, the perception of the relative advantage of IB was weaker than the perception of other technologies, probably due to perceptions of risk and security.

However, aging is not the only explanation of the rejection of IB among older adults; some other factors have also been found to influence IB adoption among this population. The study of Lichtenstein and Williamson (2006) showed that elderly Australians with low incomes did not use IB because of lack of awareness toward IB and its advantages, lack of internet access and internet confidence, inadequate knowledge, and support for use or the initial setting up procedure, lack of trust, security and high perceived privacy risks. Sohail and Shanmugham (2004) also found that age had no significant impact on e-banking adoption. Instead, they argued that accessibility to the Internet, awareness of e-banking and customers' resistance to change are the main factors influencing e-banking adoption. Also, Nayak, Priest and White (2010) showed that, for older adults aged 60-88, and for more complex internet activities, such as banking transactions, gender (male), health status (good), perceived usefulness, and attitude were the significant factors. Also, Senali (2017) investigated mobile banking adoption by senior citizens, aged 55+, in Australia and found that the ownership of smartphones was high, however, the adoption of smartphones and mobile banking by the elderly was low. Some of the reasons for the non-adoption of mobile banking are fear of hackers, lack of knowledge, psychological decline,

and limitations of technology. The study concluded that adoption and use of mobile banking can improve the quality of life and well-being of aging Australians, and MB adoption can be improved if banks can address the obstacles pointed out, thereby alleviating the concerns of the adults. Asmi and Ishaya (2012) investigated the behaviour of elderly people (age segment 55-65) towards IB in the UK. The research provides an understanding of the level of motivations, social influence, perceived usefulness, and ease of use of IB for the age segment in the UK. More than 45% of non-users of IB in the study had most of the facilitating conditions and had enough self-efficacy to perform IB related tasks, yet were not using IB. The respondents preferred the traditional banking system where they have face-to-face interaction, while social norms in the form of 'peer influence' shows less influencing variable as compared to the impact of 'attitude' in defining behaviour towards IB by the elderly people. The study concludes that financial institutions should motivate and encourage the elderly to use IB services.

This literature has been able to reveal that adoption and use of IB among the elderly across the world is still very low, most especially in developing countries. Most of the literature reviewed has also highlighted many reasons for the low adoption of this technology among the elderly, which then calls for the need to find out the level of adoption in Nigeria as well as the reasons for use or non-use among Nigeria's older adults.

### **3. Methodology**

A survey research design was adopted for the study. The population of the study is older adults above 60 years, who are account holders of commercial banks in Ekiti State in Southwestern Nigeria. The population of older adults in Ekiti state who are bank customers is indeterminate; hence, purposive, convenience, and snowball sampling techniques were then used to select the sample. At the first stage, nine local government areas (LGAs) (Ado-Ekiti, Ijero, Ekiti West, Ikole, Ekiti South-west, Ekiti East, Gboyin, Oye and Ikere) were purposively selected out of the sixteen LGAs in Ekiti State to have a mix of urban and rural areas. The LGAs were also purposively chosen as a result of the availability of commercial banks, as well as the availability of Internet access in the areas. In the second stage, two towns or villages were chosen from each LGA, where the towns or villages were drawn based on settlement types, that is, urban, semi-urban and rural, as specified on the official website of the state

(<http://ekitistate.gov.ng/about%20ekiti/>)

At the third stage, 384 older adults were selected through convenience and snowball sampling techniques; 192 IB users and 192 non-IB users.

Two sets of questionnaire were used for data collection. The questionnaires consist of both open and close-ended questions. Measurement items were adopted from previous studies of Ashour and Badah (2010), Braganza and Mekoth (2017), Mbrokoh (2015), Mwesigwa (2010), and Onyango (2016) on in e-banking adoption and use. The questionnaires elicited information

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about the demographics of the older adults, possession of mobile phones and computers, accessibility to the Internet connection, preferred banking modes, frequency and length of use of IB, feature(s) of IB are mostly used by the older adults, reasons for using IB, reasons for not using IB, and intention/readiness to use IB by non-IB users. The interview was used to complement the questionnaire. The interview schedules were constructed to accommodate more oral open-ended responses. The validity of the instruments was examined by two researchers in the fields of information science and banking for face and content validity. The reliability of the instrument was tested through internal consistency. The instruments were pre-tested in Agbowo and Bodija areas in Ibadan, Oyo State, which are not part of the study locations.

Administration of the two sets of the questionnaire and the interview sessions were conducted by the researchers with the help of three research assistants who were briefed about the research topic, objectives, and contents of the instruments. In the end, only 47 IB users participated in the study as the others did not return the questionnaire even after many repeated visits to them, thereby giving a 24.5% response rate. The reason for this low response could be because some of the older adults who said they were IB users may not be after all, as many of them kept saying they had not filled the questionnaire, while some said they had lost it. Even after the lost ones were replaced, they still kept saying they had not filled them. Some said they were waiting for their children

to show them the instrument before filling. The researchers stopped visiting them when it was obvious that some of them were just not willing to participate and some may not even be using IB as professed by them initially. However, all the copies of the questionnaire administered to the 192 respondents selected for the non-IB users were retrieved, properly filled, and useful for data analysis; giving a 100% response rate. The overall valid sample for this study is 239 (62.2% response rate).

In addition, interview appointments were scheduled with 20 respondents (10 IB users and 10 non-IB users) among the ones served with questionnaires in some of the research locations. The locations visited for interviews are Ado, Ijero, Ikole, Oye, and Ikere. An audio recording device was used to capture responses with the permission of the respondents. Respondents were made to be aware of the purpose of conducting this study to get their informed consent, and made them understand that the study is purely for research purposes. More so, the researchers assured the respondents of the anonymity and confidentiality of their responses. Only respondents that were willing to participate in the study were involved to avoid coercion.

Some challenges were encountered during the data collection as many of the older adults approached declined to participate in the study because they had no idea of IB, some could not read and write, while some showed lack of interest. It was also observed that most

of the adults approached were not using IB; hence, the reason for the low number of IB users (47) compared to the projected sample (192). Statistical Package for Social Science version 20 (SPSS 20) was used to analyse data using descriptive statistics. Qualitative data were analysed thematically with Nvivo software (version 10). The transcribed audio responses of respondents were grouped and categorised into themes (nodes) in regards to the objectives and research questions and thematic analysis was conducted. The analysis and results were presented based on the themes concerning the research objectives and questions.

## **4. Findings and Discussion**

### **4.1 Frequency Distribution of Respondents Demographics**

Table 1 presents the frequency and percentages of the respondents' demographics for IB and non-IB users. The majority of the respondents are non-IB users (19.7% IB users; 80.3% non-IB users). Most (76.6%) of the IB users and non-IB users (62.0%) were within the age range of 60–69 years. More males than females participated in the study (80.9% IB users; 60.0% non-IB users). In the category of the IB user, most had Nigeria Certification in Education (42.6%), while 35.9% of the non-IB users had Nigeria Certification in Education. Some of the LGAs do not have respondents who are IB users, while all the LGAs had representatives for non-IB users.

Table 1. Demographic Profile of Respondents					
Demographic Variables		IB Users		Non-IB Users	
		Freq (N = 47)	%	Freq (N = 192)	%
<i>Age</i>					
60 – 69 years		36	76.6	119	62.0
70 – 79 years		11	23.4	64	33.3
80 years and above		0	0.0	9	4.7
<b>Sex</b>					
Male		38	80.9	115	59.9
Female		9	19.1	77	40.1
<i>Level of Education</i>					
PhD Degree		0	0.0	0	0.0
Master's Degree		3	6.4	11	5.7
Bachelor's Degree		4	8.5	32	16.7
Higher National Degree		11	23.4	46	24.0
Ordinary National Degree		9	19.1	14	7.3
Nigeria Certification in Education		20	42.6	69	35.9
Grade II		0	0.0	3	1.6
SSCE/WASSCE		0	0.0	4	2.0
Primary School Leaving Certificate		0	0.0	13	6.8
No Formal Education		0	0.0	0	0.0
<i>Location</i>					
Ado-Ekiti LGA	Ado-Ekiti	11	23.4	13	6.8
	Ilokun-Ekiti	0	0.0	10	5.2
Ijero LGA	Ijurin-Ekiti	1	2.1	10	5.2
	Ijero-Ekiti	5	10.6	13	6.8
Ekiti West LGA	Aramoko-Ekiti	3	6.4	10	5.2
	Ikogosi-Ekiti	0	0.0	10	5.2
Ikole LGA	Odo oro-Ekiti	0	0.0	10	5.2
	Ikole-Ekiti	8	17.1	13	6.8
Ekiti South-West LGA	Ilawe-Ekiti	0	0.0	10	5.2
	Igbara odo-Ekiti	0	0.0	10	5.2

Ekiti East LGA	Omuo-Ekiti	3	6.4	10	5.2
	Araromi-Ekiti	0	0.0	10	5.2
Gbonyin LGA	Agbado-Ekiti	1	2.1	10	5.2
	Ode-Ekiti	0	0.0	10	5.2
Oye LGA	Itaji-Ekiti	0	0.0	10	5.2
	Oye-Ekiti	6	12.8	10	5.2
Ikere LGA	Fagbohun-Ekiti	0	0.0	10	5.2
	Ikere-Ekiti	9	19.1	13	6.8

The results for IB users on computer/smartphone ownership, frequency of use of IB, usage period, place of use, and means of awareness about IB are presented in Table 2. All the IB users owned computers/smartphones and used IB majorly monthly (85.1%). The majority

(46.8%) had been using IB for just between 1–2 years, which shows they were early adopters of IB. The majority (80.9%) made use of IB from their homes. Awareness and use of IB by the older adults were majorly from their banks (72.3%).

Table 2. Frequency distribution of IB Users' Computer/Smartphone Ownership		
	Freq (N = 47)	%
<i>Computer/smartphone ownership</i>		
Yes	47	100.0
No	0	0.0
<i>IB frequency of use</i>		
Daily	2	4.3
Weekly	5	10.6
Monthly	40	85.1
Quarterly	0	0.0
Bi-annually	0	0.0
Annually	0	0.0
<i>IB usage period</i>		
1 – 2 years	22	46.8
3 – 4 years	3	6.4
5 – 6 years	11	23.4
Above 6 years	11	23.4
<i>Place of IB use</i>		
Home	38	80.9
Workplace	9	19.1
Cybercafé	0	0.0
<i>Means of IB awareness</i>		
Telephone/Radio	0	0.0
Through the bank	34	72.3

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Newspapers	0	0.0
Leaflets/Advertisement	0	0.0
Friends/Relations	13	27.7

Analysis of the data for respondents who were not using IB reveals that 60.4% did not have computers/smartphones as shown in Table 3. All the respondents also preferred the traditional banking system which made them not have acquired

computers/smartphones which could make them use IB. Also, 90.1% of the non-IB user had been using the traditional banking system for more than six years, with most (73.5%) using it monthly.

Table 3. Frequency distribution of Non-IB Users toward Computer/Smartphone ownership and banking system preference		
Measurements	Freq (N=192)	%
<i>Computer/smartphone ownership</i>		
Yes	76	39.6
No	116	60.4
Total	192	100.0
<i>Banking system preferred and use</i>		
Internet banking	0	0.0
Traditional banking	192	100.0
Total	192	100.0
<i>Traditional banking length of use</i>		
1 – 2 years	0	0.0
3 – 4 years	15	7.8
5 – 6 years	0.0	0.0
Above 6 years	173	90.1
Missing value	4	2.1
Total	192	100.0
<i>Traditional banking frequency of use</i>		
Daily	1	0.5
Weekly	16	8.3
Monthly	141	73.5
Quarterly	33	17.2
Bi-annually	1	0.5
Annually	0	0.0
Total	192	100.0

**4.2 Answers to the Research Questions**

This section provides answers to the five research questions.

***Research Question 1: What is the mode of banking preferred among older adults?***

Table 4. Banking System Preferred and Used by Older Adults		
	Freq (N=239)	%
Internet banking	47	19.7
Traditional banking	192	80.3

Similarly, the interview responses reveal that majority of the respondents felt visiting bank branches for banking activity is better than online banking, even though some of the non-IB users complained of the inconveniences associated with visiting bank branches:

I have not heard about IB. Even at that, I prefer to do banking activities physically at the bank. That is what I have been doing since I was twenty years old. I am now 78 years. I don't think I want to try another method. (Respondent 7, male, non-IB user, Ijero LGA)

I prefer carrying out my banking transactions at the bank because I do not know how to use the computer or phone very well (Respondent 13, female, non-IB user, Ikere LGA).

To me, going to the bank wastes time and is strenuous. I only go to bank premises to deposit money or use the ATM. I can do other transactions online through IB

The analysis in Table 4 shows that most of the older adults in Ekiti preferred the traditional banking system as only 19.7% of them used IB.

(Respondent 20, male, IB user, Ado Ekiti LGA).

On the preference of banking system by the older population, our results are in line with many previous studies such as Camilleri and Grech (2017), Asmi and Ishaya (2012), Ifezue, Ama and Moseki (2016), Mattila et al. (2003) who also found that most elderly people prefer visiting bank branches regularly for their banking activities rather than using online banking. Most of the elderly population are skeptical of online banking due to the faceless banking system where security is a big challenge. They prefer physical interactions at the bank where they feel more secured than the faceless IB platforms. Our findings further show that the few elderly IB users sampled were not even prolific users of IB as they used it monthly, which may be because most of them are retirees who collect pensions on a monthly basis.

***Research Question 2: What is the frequency of IB usage among the older population?***

Findings show that the older adults were not prolific users of IB as a majority (85.1%) used the technology monthly as

shown in Table 3. Responses from the interview also corroborate this finding:

I always transfer money to my son in school every month. I use IB for the transfer (Respondent 11, male, IB user, Oye LGA).

I use IB monthly (Respondent 16, male, IB user, Ikere LGA).

I mostly use IB monthly when I need to check for my pension if it has been paid. (Respondent 5, female, IB user, Ikole LGA).

Daily (Respondent 3, female, IB user, Ijero LGA).

I use it every week (Respondent 6, male, IB user, Ikole LGA).

.... monthly (Respondent 15, male IB user, Ikere LGA).

Monthly (Respondent 17, female IB user, Ado-Ekiti LGA).

Daily (Respondent 18, male, IB user, Oye LGA).

The screenshot of thematic analysis and word cloud representation and a screenshot of the answers categories from the Nvivo software are presented in Figure 1. The word ‘monthly’ came out boldly, which shows it has the highest frequency.

Frequency of Internet banking usage	0	0
Daily	2	2
Monthly	6	6
Weekly	3	3



Figure 1. Screenshot of thematic analysis showing the frequency of IB usage and the word cloud representation

**Research Question 3: Which feature(s) of IB is/are mostly used by older adults?**

The analysis shown in Table 5 reveals that funds transfer is the most used feature of IB by the older adults, (mean score 3.69), followed by bills payment (3.58), account enquires/reports (2.96), and purchase of airtime and data bundle (2.40). Other features were not used by them. These findings corroborate the

findings of Chauhan and Choudhary (2015), Kumar, Reddy and Sreenivasulu (2017), and Senali (2017). This also shows the limitation of the use of IB by the older adults as they indicated they did not use many features available on the IB platforms. For the fact that the adults may not have advanced skills at using IT, their use of IB features is limited to the basic one.

Table 5. Descriptive Analysis of Features of IB used by Older Adults

Items	Low use (Freq/%)	Averagely used (Freq/%)	Highly used (Freq/%)	N		Mean
				Missing	Valid	
Funds Transfer (sending money from one account to another)	6 (12.8%)	7 (14.9%)	32 (68.1%)	2	45	3.69
Bill Payment (settlement of cable television subscription, electricity bill, etc.)	5 (10.6%)	12 (25.5%)	26 (55.4%)	4	43	3.58
Account/Transaction Enquiries/ Reports	15 (31.9%)	22 (46.8%)	9 (19.2%)	1	46	2.96
Purchase of Airtime and Data bundle	44 (93.6%)	2 (4.3%)	0 (0.0%)	1	46	2.40
Card and Cheque Services	0 (0.0%)	0 (0.0%)	0 (0.0%)	0	0	0.0
Travel booking and payment	0 (0.0%)	0 (0.0%)	0 (0.0%)	0	0	0.0
Foreign exchange transactions	0 (0.0%)	0 (0.0%)	0 (0.0%)	0	0	0.0
Stock and Investments	0 (0.0%)	0 (0.0%)	0 (0.0%)	0	0	0.0
Loan Application	0 (0.0%)	0 (0.0%)	0 (0.0%)	0	0	0.0
Online/Video chat	0 (0.0%)	0 (0.0%)	0 (0.0%)	0	0	0.0
Modification of account profile	0 (0.0%)	0 (0.0%)	0 (0.0%)	0	0	0.0
Standing order	0 (0.0%)	0 (0.0%)	0 (0.0%)	0	0	0.0
Customer feedback	0 (0.0%)	0 (0.0%)	0 (0.0%)	0	0	0.0
Others (please specify)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0	0	0.0

The interview responses also supported these findings:

I use IB to transfer money and pay PHCN bills regularly (Respondent 1, male IB user, Ijero LGA).

I use it majorly for fund transfer and bill payment services (Respondent 3, female, IB user, Ijero LGA).

Cash transfer and payment of PHCN bills (Respondent 5, female, IB user, Ikole LGA).

Voucher top-up and fund transfer services (Respondent 6, male, IB user, Ikole LGA).

Transfer of money, standing order. I also use it to change my ATM pin, pay for my electricity bills, and check my account balance (Respondent 11, male, IB user, Oye LGA).

Fund transfer and airtime voucher top-up (Respondent 15, male, IB user, Ikere LGA). Funds transfer, obtaining a statement of account, and bill payment (Respondent 16, male, IB user, Ikere LGA).

Sending money (Respondent 17, female, IB user, Ado-Ekiti LGA).

..... to transfer money and buy credit for my phone (Respondent 18, male, IB user, Oye LGA).

Figure 2 shows the screenshot of thematic analysis showing features of IB used by the older adults and the word cloud representation. The words, fund transfer, bill payment, and voucher top-up are displayed clearly.

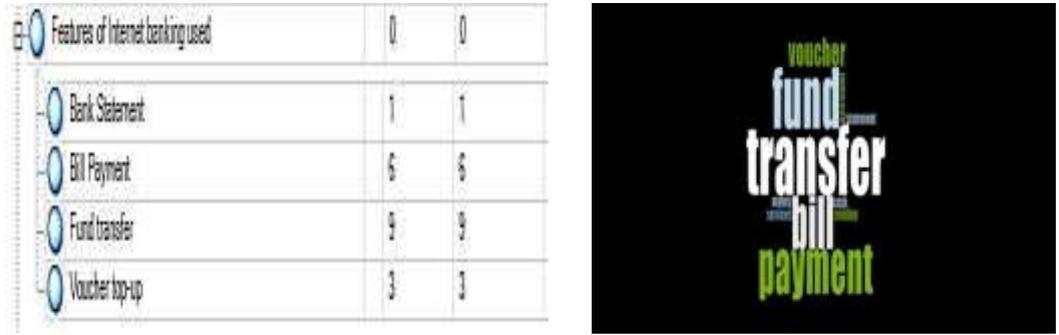


Figure 2. Screenshot of thematic analysis showing the frequency of features used and the word cloud representation

**Research Question Four: What are the reasons for the use of IB by the adopters?**

Table 6 presents some of the reasons that made older adults use IB. The results show that they had positive attitudes toward IB as most of them (89.3%) agreed that using IB is a good and wise idea. Most of them used IB because of ease of access and use of IB (87.3%), opportunity to carry out

banking transaction anytime and anywhere (85.1%), the convenience associated with using IB (83.0%), cost-saving in using IB (80.9%), banks' encouragements (80.8%), encouragement from family and friends (71.1%), possession of the knowledge and resources necessary to use internet banking (65.9%), and assurance of protection and security from banks (61.7%).

Reasons for using IB	SD (Freq/%)	D (Freq/%)	U (Freq/%)	A (Freq/%)	SA (Freq/%)
I feel using Internet banking is a good and wise idea	1 (2.1%)	2 (4.3%)	2 (4.3%)	30 (63.8%)	12 (25.5%)
Internet banking is easy to access and use and also help helps me to accomplish banking activities faster	1 (2.1%)	0 (0.0%)	5 (10.6%)	21 (44.7%)	20 (42.6%)
Internet banking is convenient for me to use	0 (0.0%)	0 (0.0%)	8 (17.0%)	26 (55.3%)	13 (27.7%)
Internet banking saves time and cost of transactions	0 (0.0%)	8 (17.0%)	1 (2.1%)	24 (51.1%)	14 (29.8%)
I use Internet banking because of my bank encouragement	1 (2.1%)	5 (10.6%)	3 (6.4%)	23 (48.9%)	15 (31.9%)
Internet banking gave me the opportunity to carry out transactions at any time and any place	1 (2.1%)	6 (12.8%)	0 (0.0%)	19 (40.4%)	21 (44.7%)
My family/friends encourage me to use Internet banking	0 (0.0%)	1 (2.2%)	12 (26.7%)	23 (51.1%)	9 (20.0%)
I have the knowledge and resources necessary to use Internet	0 (0.0%)	1 (2.1%)	15 (31.9%)	22 (46.8%)	9 (19.1%)

banking					
My bank assures me of maximum protection at all times on Internet banking platform	0 (0.0%)	13 (27.7%)	5 (10.6%)	22 (46.8%)	7 (14.9%)

From the interview conducted with some respondents who were users of IB, it was noted that several reasons made them use IB as shown in Figure 3. However, the majority of the respondents actually stated that they used IB because of its convenience. Some of the responses:

It is convenient (Respondent 1, male IB user, Ijero LGA).

It is convenient for me; it takes less time. I don't need to spend money on transport fare to the bank and waste time queuing up (Respondent 3, female, IB user, Ijero LGA).

It relieves me from the stress of visiting the bank often. I can use my phone to send money or check my account balance. (Respondent 5, female, IB user, Ikole LGA).

It is safe and convenient; also, it relieves me from the stress of going to the bank halls (Respondent 6, male, IB user, Ikole LGA).

It does not give me any stress; it is transparent and makes my banking transactions easy to perform (Respondent 11, male, IB user, Oye LGA).

It saves me transport fares to the bank and it is simple to use. I can use it anywhere; it is easy to operate, convenient and very fast. Besides, it saves me time and energy (Respondent 15, male, IB user, Ikere LGA).

To me, it is easy to use for business. Most of my customers transfer money to my account. I can easily check my balance. I also do transfer to my customers I buy goods from in Lagos. It is really convenient for me unlike in the olden days where I had to be going to the bank to deposit or withdraw money, or check account balances (Respondent 16, male, IB user, Ikere LGA).

It helps me perform my banking transactions with ease; it saves me time. I hardly visit the bank these days, more so that there is an ATM point near my house (Respondent 17, female, IB user, Ado-Ekiti LGA).

It is very convenient for me and it is easy for me; it saves time (Respondent 18, male, IB user, Oye LGA).

It does not waste much time; not strenuous and it can be performed at a customer's convenient time (Respondent 20, male, IB user, Ado-Ekiti LGA).



15.6% indicated they did not know how to use computers and smartphones, while 13.5% were simply not interested in using IB. Hence, lack of awareness of IB and its benefits is the major reason

for not using IB by the older adults. Other reasons are dislike, fear of insecurity, lack of interest, and knowledge of IT and resources.

**Table 7. Reasons for Non-usage of IB**

Reasons (I do not use IB because :)	Yes (Freq/%)	No (Freq/%)
I have not heard about it	119 (62.0%)	73 (38.0%)
I have no money to buy computer/smartphone	32 (16.7%)	160 (83.3%)
I do not have the facilities (smartphones/computers) to use it.	34 (17.7%)	158 (82.3%)
I have no knowledge to use computer/smartphone.	30 (15.6%)	162(84.4%)
I am not interested in using it.	72 (37.5%)	120 (62.5%)
I don't know its benefits or importance to me.	106 (55.2%)	86 (44.8%)
I prefer going to the bank to have physical interactions with bank officials.	66 (34.4%)	126 (65.6%)

Responses from the interview reveal that most of the non-IB users (62.0%) were not aware of IB, while about 55.0% were not aware of its benefits. Some also preferred visiting the bank for their financial transactions (34.4%). Some others were simply not interested (37.5%), did not have the facilities to use IB (17.7%), and did not have the knowledge to use computers or smartphones (15.6%). The interview responses corroborated some of the questionnaire responses as presented in the responses and the word cloud representation screenshots (Figure 4):

- I do not have an interest in it (Respondent 2, male, non-IB User, Ijero LGA).
- I have not heard about it (Respondent 7, male, non-IB user, Ijero LGA).
- I do not use IB because I have heard about people who lost their

- money through it (Respondent 8, female, non-IB user, Ikole LGA).
- I dislike it because I heard one must be able to use a computer very well and one will need to be buying *credits* on the phone before one can use it. I don't think I will be able to afford that. (Respondent 9, male, non-IB user, Oye LGA).
- I am unaware of it. My bank has not told me about it. I don't know what I can use it for (Respondent 10, male, non-IB user, Oye LGA).
- My account officer at my bank has told me about it but I don't think I can use it because I really do not know how to use the computer very well. More so, I only visit the branch once a month when I need to collect my pension so I don't think I need it (Respondent 13, female, non-IB user, Ikere LGA).
- I don't like it because I am not sure of its security (Respondent

14, male, non-IB user, Ikere LGA).  
 I don't think I have heard about it.  
 Can you tell me how to use it?

(Respondent 19, female, non-IB user, Ijero LGA).

Reasons for non-adoption and use of Internet banking		0	0
Dislike the service	4	4	
Don't know the Value	1	1	
Fear of losing money	1	1	
Inadequate Security	2	2	
No believe in the service	1	1	
No Computer knowledge or Skill	1	2	
No elaborate transactions	1	1	
No Money	1	1	
No physical interactions	1	1	
No Time	1	1	
Not Interested	2	2	
Not Popular	1	1	
Prono to Fraud	1	1	
Stressful	1	1	
Unaware	4	4	



Figure 4. Screenshot of thematic analysis showing reasons for non-use of IB and the word cloud representation.

The word cloud in Figure 4 reveals that words such as unaware, dislike, no time, no knowledge, no interest, and security, are some of the major reasons, stated by the older adults interviewed. These findings corroborate the findings of many previous studies. For instance, Odiboh, Oresanya & Ekanem (2016) found a low level of awareness about e-banking among their respondents in Ogun State, Nigeria. Tarhini, Mgbemena, Trab and Masa’Deh (2015) also found that majority of their elderly respondents were not using IB because they were not aware of the benefits, while some thought IB was too complex to use or of little or no relevance to them. Lichtenstein and Williamson (2006) also identified a lack of awareness toward IB and its advantages, inadequate knowledge lack of trust, security, and high perceived privacy

risks, among other factors. Tarhini et al. (2015) also found that fear of fraud was a great concern among the customers which brought about distrust in banking activities over the Internet. Awara and Anyadighibe (2014), Mukhtar (2015), and Sohail and Shanmugham (2004) observed that the older respondents they studied were not convenient with the use of IB due to low level of awareness, sensitisation, fear of fraud and resistance to change. Kumar, et al. (2017) also found that lack of knowledge, fund, and time by customers towards IB were some of the reasons why the technology was not used by some older adults. Ronning and Solvberg’s (2017) findings also show that older adults were reluctant to use IB because they felt they might not cope in learning and mastering how to use the service as a result of low self-efficacy.

Piiparinen (2014) found that seniors were not willing to use online banks, because they did not have access or knowledge to use the technology coupled with their physical conditions. This is in line with the opinion of Jeong and Yoon (2013) that a skillful person with high knowledge of computing may rate IB as easier to use than an individual who has relatively little knowledge of computing. Mattila et al. (2003) found that perceived difficulty in using computers combined with the lack of personal service in e-banking, confusing web pages and complex steps, difficulties with computers and Internet in general, as well as security issues were the main barriers of IB adoption among older adults, which they blamed on insufficient or non-existent of training on how to use IB technology. Azam, Qiang and Sharif, (2013) stated that older adults were skeptical of transactions that are carried out with no physical interaction; hence, they had no or very little trust in it. Senali (2017) identified fear of hackers, lack of knowledge, psychological decline, and limitations of technology as barriers to mobile banking adoption among senior citizens in Australia. Also, in a study by Al-Fahim (2013), some customers avoid using electronic banking because of the perceived proneness to fraud and inadequate protection on account information. In fact, security concerns have been indicated by much past research to influence usage intentions of IB not only directly but also indirectly. Some older adults were also fearful due to negative word-of-mouth and bad experience from some IB users as stated in the study of Malhotra (2016).

In addition, Rock et al. (2010) show that older respondents in the USA were less likely to use the Internet as a source of financial information, not for security concerns, but because they preferred contact with bank workers due to websites being difficult or confusing. Also, the lack of physical interaction was mentioned as one of the important factors for not using IB, which corroborates the findings of Asmi and Ishaya (2012). The adults could fear the risk of losing their physical bank to an online bank, depriving them of valued human interaction. Going to the bank premises could be seen as a form of relieving boredom for some of the older adults who most of the time do not have any relatives living with them. The need for human interaction, the need to be sociable, and the need to engage them in an in-person communication to preserve cognitive functions are important to the elders. Hence, banks should ensure the elders have account officers who regularly interact with the adults.

Our findings further reveal that banks in Ekiti state had not created adequate awareness or enough sensitisation about IB and its numerous benefits to this population. Since most older users are less familiar with the technology, their ability to adopt new technology depends on the provision of adequate information about the benefits of the technology to them, their willingness, computer self-efficacy, and dependence on prior knowledge. Hence, promoters of technology adoption among this population should take cognisance of the fact that they have lower confidence in their cognitive capabilities, and that they often act as a self-fulfilling

prophecy when adopting new technologies (Yousafzai & Yani-de-Soriano, 2012). Banks, therefore, should typically devote efforts towards raising enough awareness about IB, promoting its benefits among this population. There is also the need to provide the elderly users with assistance, access to computing devices, with suitable training, and also build their confidence in IB by highlighting the security features available on IB platforms.

**Research Question Six: Do non-IB users have the intention of using in the future?**

The results, as shown in Table 8, reveal that the non-IB users have the intention to use IB, as about two-thirds of them (64.1%) agreed to use IB anytime soon and in the future (59.9%). The item ‘I am ready to use IB anytime soon’ has the highest mean score (3.38), while the item of ‘I may consider using IB in the future if my friends/family/children encourage me’ was ranked lowest with a mean value of 1.86.

Intentions/Readiness	SD (Freq/%)	D (Freq/%)	U (Freq/%)	A (Freq/%)	SA (Freq/%)	Mean
I am ready to use IB anytime soon	15 (7.8%)	13 (6.8%)	41 (21.3%)	89 (46.4%)	34 (17.7%)	3.38
I would like to use IB in the future	14 (7.3%)	14 (7.3%)	49 (25.5%)	92 (47.9%)	23 (12.0%)	3.29
I may consider using IB in the future if I am able to acquire Internet/Computer skills	17 (8.9%)	35 (18.2%)	46 (24.0%)	75 (39.0%)	19 (9.9%)	3.21
I may consider using IB in the future if my security is guaranteed	46 (24.9%)	99 (51.6%)	25 (13.0%)	9 (4.7%)	13 (6.8%)	2.17
I may consider using IB in the future if my friends/family/children encourage me	79 (41.1%)	83 (43.2%)	12 (6.3%)	7 (3.7%)	11 (5.7%)	1.86

The results show that the non-IB users have the intention to use IB, hence the need for banks to create more awareness about IB, especially among the older population. Banks could deploy the use of account officers who will interact with the adults one-on-one to make them have a proper understanding of the

benefits they could derive from using IB even as they age gracefully.

**5. Conclusion and Contributions to Knowledge**

Elderly people are growing population which present different characteristics from the rest of the population. They are fragile and need assistance, therefore, need assisted technologies such as IB,

which our study has confirmed. Theoretically, this study contributes to knowledge in the area of adoption and use of IB among older adults in Nigeria by revealing low usage of IB among the older population in Nigeria and also identifying reasons why older adults use or not use IB. The study also confirms the findings of previous studies about the low usage of IB among the elderly. Besides, this study provides academicians and researchers with empirical data in pursuance of further studies on e-banking, most especially IB. The findings of this study also provide relevant practical data and information that could help banks build a stronger customer relationship management by paying more attention to the aging population and intensify efforts in the area of awareness and sensitisation of this population for them to be well informed and not misinformed about IB. Besides, this study provides information to banks and other stakeholders about customers' concerns toward inadequate security and poor Internet service which makes older adults not to want to use IB and which could jeopardise the CBN vision 2020, if quick attention is not taken to tackle these challenges.

### **6. Recommendations and Suggestions for Further Studies**

Based on the findings of this study, it is recommended that banks should intensify efforts toward adequate

awareness and sensitisation of older adults on the benefits associated with the use of IB. There should also be sensitisation on the availability of security when using IB to build the trust of the adults about IB use. Banks should improve on the design and development of IB platforms to make navigation through the webpages easy for older adults who may have problems with eye sights and shaky hands. Besides, government and telecommunication companies could encourage the use of IB among older adults by ensuring that resources such as Internet access tariff plans, modems, smartphones, and computers needed are affordable. Besides, older adults could be encouraged by making these facilities available to them at reduced or discounted rates.

This study focused only on nine LGAs in Ekiti State with consideration of two towns from each LGA; effort should be made to include other towns and LGAs not included in this study in future studies. This study could also be extended to other states in Nigeria. The instruments for data collection are questionnaires and interviews, future studies could consider focus group discussion by meeting respondents (older adults) together as a group, either at pensioners' houses, association meetings or club meetings to further give insights to diverse opinions from them.

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# Effects of Electronic Register on Teachers Absenteeism in Osadenis mixed Secondary School Delta State, Nigeria

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**Abstract:** The study was on electronic register and teachers' absenteeism. The objective of the study was to examine the effects of electronic register on teachers' absenteeism in Osadenis mixed secondary school Delta state, Nigeria. Specifically, the study ascertained if the use of electronic register has helped in reducing teachers' absenteeism to work in Osadenis mixed secondary school Delta state, Nigeria. The study was a survey research. Simple random sampling procedure was used. The primary and secondary sources of data were employed. Behavioural change theory was adopted. The findings revealed that the use of electronic register has reduced teachers' absenteeism from work. Other findings showed that ghost workers no longer find it easy because of the use of thump print during clocking-in and clocking-out of work. It has helped to enforce punctuality. Based on the findings, the following recommendations were made. There should be a reasonable deduction on the salary of any teacher who absent from work without an acceptable reason and permission from the management. There should be

improvement on the function of the machine via provision of constant light and trained experts to manage and maintain the device.

**Keywords:** Electronic register, teacher, absenteeism, school and Delta State.

## **Introduction**

Electronic register is a biometric time clock system that monitors employees clock-in and clock-out for work using verification technique such as fingerprints, retinal scanning, or even facial recognition scanning with extremely precise software recording time logs and verifying employee attendance in order to ensure that the employees are who they say they are. In the light of the above, the use of biometry such as laptops, mobile phones and other technologies has become a meaningful tool in managing employees of institutions, (Mikhaylov 2019). This is because absence from work has generally been on the increase even though many organizations have put in place positive changes in their bold attempts to reduce the incidence of absenteeism, (Ugoani 2016). Similarly, an absentee is a teacher or worker who is expected to be in a particular place such as workplace at a particular time but is not there, (Ejere 2010).

In the same vein, one of the daunting challenges of employers is time and attendance clock fraud. This implies when workers sign in and out for hours or days they did not work or sign in and out other employees who aren't actually at work. Besides, there has been an increasing high rate of teachers' absenteeism to work leading to disruption and ineffective instruction to students. This has become a nuisance in the workplace and unnecessary cost to productivity, (Ivory 2016). Beyond that

incidence, some of the teachers absent themselves from work for several reasons such as: personal reasons, personal illness, family responsibility, personal business, work place abuse, poor supervision of the principal, extracurricular activities, high work load, poor control of the principal, job dissatisfaction and death in the family. Amidst that, the teachers who absent themselves from work, often claim to be suffering from various illnesses, when ordinarily, they have simply chosen to opt out of work rather than opting in. They take advantage of poor supervision of attendance to absent themselves from work without genuine reasons. Others get involved on things outside the scope of work as pretence to absent from work, (Robinson 2008).

Worthy of note is that, overtime there has been a serious struggle or battle on the strategies that could be used to curtail this daunting time fraud. To address the restiveness, the automated machine for clocking-in and clocking-out of work for teachers was introduced to eliminate time larceny, increase security, The Citizen Newspaper (2018) enhance effective, accurate and timely record keeping for the workers and monitor the attendance of teachers at work, (Jethro-Ibileke 2017).

## **Statement of the Problem**

The contention was anchored on workers' absenteeism and how to tame the tide. There were challenges of ineffective instruction to students, time larceny, attendance fraud, low

productivity and insecurity. Furthermore, there was wasteful organizational practice, waste of fund, truancy, and reduction in employment opportunities. Some of those problems led to the curiosity to provide answers to the following question:

### **Research Question**

1. Does the use of electronic register help to reduce teachers' absenteeism to work in Osadenis mixed secondary school Delta state, Nigeria?

### **Objective of the Study**

The general objective is to examine the effects of electronic register on teachers' absenteeism in Osadenis mixed secondary school Delta state, Nigeria. Specifically the study was to:

1. Ascertain if the use of electronic register has helped in reducing teachers' absenteeism to work in Osadenis mixed secondary school Delta state, Nigeria.

### **Review of Related Literature**

The literature in this study was reviewed under the following sub-themes:

- Electronic Register
- Teacher
- Absenteeism
- A Trajectory of Electronic Register for Workers' in Delta State
- Empirical Review
- Gap in Literature

### **Electronic Register**

Electronic register is a data storage device that is more sophisticated than latches. Electronic register is a group of binary cells suitable for holding binary information. A group of cascaded flip-flops used to store related bits of information is known as a register, (Wikibooks 2017). Is a device that processes data and store record of

somebody, something on an official list or data base, (Hornby 2015). In a nutshell, electronic register is a device that stores the bio data of a teacher with a provision for a thumb print when clocking in and clocking out of work in order to monitor attendance of teachers accurately and timely.

### **Teacher**

It means a person whose job is teaching. It could be in a church, home but most especially in schools, (Hornby 2015). In the same perspective, a teacher is someone who contributes to the growth of others who has the quality of love of knowledge and a love of contributing to the development of others, (Waldron 2008). In addition, it connotes an expert who has the ability to impart knowledge in order to assist learners to build, identify and to acquire skills that will be used to face the challenges in life. In other words, a learner's development will be enhanced to utilize the available opportunities within the environment towards securing an employment and acquiring adequate skills to fit into the society, (Sende 2000). In a nutshell, a teacher is an individual employed mostly in a school to teach in order to create behavioural change of the learner.

### **Absenteeism**

Absenteeism is the act of being frequently away from work or school unofficially without permission or good reasons, (Hornby 2015). In the same light, it implies a teacher's absence from regular work when ordinarily he or she is supposed to be at work. In other words, it is the failure of an employee on a pay roll to report to duty against work ethics. It could be as a result of personal reasons, illness, among others

whether authorized or not. When it occurs often devoid of notice, it deters productivity in an institution, (Bhatia 1981).

Equally, it connotes unplanned absence or non-attendance at work where work attendance is scheduled. Absenteeism could occur as a result of sickness leave, bereavement leave and may also include time lost through industrial disputes, (Australasian Faculty of Occupational Medicine 1999). In the same perspective, it could mean the failure to report to work. The habit of absenteeism on a regular basis will culminate into a threat to productivity of an institution, (Badubi, 2017).

### **A Trajectory of Electronic Register for Workers' in Delta State**

The brain behind the electronic register for workers' in Delta State is a company called Hekerbella Limited under the democratic dispensation of Governor Ifeanyi Okowa. It is usually on a four years contract. It is an electronic device configured with the use of ITEL modeled hand held phone. It has a record of bio data of all staff and stores the last time a worker is seen in the office. The idea of electronic register for workers emanated as a continuation of the ongoing Staff Verification Exercise in Delta State Civil Service. It entails the Clocking-in and clocking-out for Staff of Delta state government. The whole workers are expected to clock in with their thick finger print upon resumption of duty in the morning, after the long break and clock out at the close of work, (Osahor 2017).

The computer device has the tendency of not recognizing the worker if not handled properly. The inefficiency of

the electronic device was linked to network fluctuation, (The Citizen Newspaper 2018). The state currently has an electronic staff database (which is available in soft and hard copies to Commissioners, board members and Directors). It captures the official details of staff including their passport photographs and signatures. It is updated as they progress along their career line and as officers are posted in and out of each government ministries and parastatals. The hard copies are verified and signed by the various departmental heads/directors and their claims countersigned by the Permanent Secretary or the Chairman. This is to ensure that every head of department is accountable for his/her staff, thus helping to checkmate the incidence of ghost workers. It reports the regularity and punctuality of staff on a monthly basis by analyzing the number of times a staff came to work and the time he checked in as recorded by the attendance register of each department, which is monitored by the director. The specimen signature captured in the database stands as a check against the possibility of a staff signing for another. It is hoped that this will reduce, if not eradicate the incidence of absenteeism or late coming (The Chairman 2017).

### **Empirical Review**

Different researchers carried out research on teachers' absenteeism in different parts of the world. One of these studies was conducted in Tanzania by Mgonja (2017) in responding to workplace absenteeism in Tanzania: The case of public and private schools in Ilala Municipal and Mkuranga District, written by Mgonja. The goal

URL: <http://journals.covenantuniversity.edu.ng/index.php/cjbss>

was to study the mechanism used to mitigate workplace absenteeism, their adequacy and the effective utilization of those mechanism in public and private schools in Ilala Municipality and Mkuranga District in Tanzania. The study made use of in-depth interviews and documentary review to collect data which was analyzed using excel, content and thematic analysis. The study found out that unlike in private schools, the measures are not seriously executed in public schools. The study recommends that the management of private schools should retain their strictness in dealing with teacher absenteeism. Again, public secondary school management structure should be re-organized to introduce field of supervision at a division level. The previous and present studies were similar because they focused on secondary schools while the difference was that the previous study used excel, content and thematic analysis while the present study will use mean scores. However, the title of the paper was 19 words which were very long. Again, the researcher did not use questionnaire to generate more data thus the study was not statistically analyzed. There is a limitation to the applicability of the result of the mechanism used to mitigate absenteeism as mentioned by Mgonja.

In the same vein, the paper titled the anatomy of absenteeism authored by Markussen, Roed, Rogeberg, & Gaure (2009) was aimed at examining the origins of the observed variation in absenteeism in Norway across time and space. Novel concept of workers steady state sickness absence propensity, computed from a multivariate hazard rate model designed to predict the

incidence and duration of sickness absence of all workers was used. The findings revealed that most of the cross-sectional variation in absenteeism is caused by genuine employee heterogeneity, the identity of a person's panel doctor has a significant impact on absence propensity and sickness absence insurance is frequently certified for reasons other than sickness, (Markussen, Roed, Rogeberg & Gaure 2009). The previous study used multivariate hazard rate model while the present study will use simple random sampling method. The population of the study is not known so the researcher does not have a sample. Again, the category of workers was not sown.

Similarly, another study was aimed at exploring with line managers some guidelines for an absenteeism management in the environment of higher learning in order to gain insight from line managers into the variables to be taken into consideration in the development of an absenteeism management programme. The study was qualitative. A non-probability sampling method with purposive sampling for selecting the sample was employed. Data was analyzed using transcribing and interpreting of data. Findings revealed that participants were faced with employees absenteeism in the course of their daily operations, there was lack of proper policies and procedures within the institution to guide them in curtailing absenteeism, (Mogobe 2011). There was no justification for the use of purposive sampling method. The study did not tell us how data was collected in the course of the study. Significant results were

noted but the limitation is that the study did not show the way out of those challenges the findings revealed. For instance the proper policies and procedures were not highlighted. This lack of details would make it difficult for readers and beneficiaries to know the way forward. Future research in related area will address the challenge.

In another study, the goal was to find out how various factors such as personal factors, school factors and environmental factors contributed to uncontrolled teachers' absenteeism in selected public primary schools in Mangaung metro municipality. Ten (10) school principals, 60 teachers and one human resource personnel from the district office were used. Questionnaire and interview were used. Quantitative and qualitative methods of analysis were used. Findings revealed that there is an urgent need to engage in critical discussion about the various types of leave like study leave, sick leave, family responsibility leave and special leave for urgent private matters. It was revealed that uncontrolled teacher absenteeism affects the smooth running of the school negatively since it affects delivery of the curriculum and incomplete syllabus coverage. Again there was disciplinary problems and unnecessary tension between the teachers who are always present at school and those frequently absent. It was recommended that Free state department of education should ensure that they hold policy management workshops to stop the scourge of habitual absenteeism, (Mothibeli 2017). The author did not show the population

of the study and the sampling technique adopted.

In the same perspective, in Montgomery, Alabama, Brown, & Arnell (2012) looked at measuring the effect teacher absenteeism has on student achievement at an urban but not too urban title 1 elementary school. The objective was to address the effects of teacher's absenteeism on academic achievement in grade 3-6 in a selected elementary school in Montgomery, Alabama. Sat 10 score and spread sheet were used to show the relationship between students performance. Descriptive statistics (frequency, percentage, means, and standard deviation) was used in analyzing data, Alabama, Brown, and (Arnell 2012). Similarly, it is in tandem with the present study because they are both on effects of absenteeism. The variation was that the previous study was on student's achievement while the present will be on teachers absenteeism in Osadenis mixed secondary school Asaba, Delta state, Nigeria. The piece, when taken as a whole, is relevant and very convincing in theory but starts slow and never laid out a concrete way of approaching this complex problem.

Stretching further, the article written by Obiero, Mwebi & Nyang'ara (2017) and titled factors influencing teacher absenteeism in public secondary schools in Borabu sub-country, Kenya. The objective was to examine the influence of selected personal characteristics (teachers' age, gender, marital status and educational qualification) on teacher absenteeism in public secondary schools in Borabu sub-country Kenya. The study adopted ex-post facto

research method. A population of 245 teachers and 21 school principals in public secondary schools in Borabu sub country A sample of 152 teachers were selected using stratified random sampling and purposive sampling was used in selecting 20 school principals. SPSS and ANOVA were used for data analysis. The findings revealed that illness of teachers or close family members was the most common reason causing teacher absenteeism, most principals held the perception that female teachers had higher rate of absenteeism than their male counterparts although teachers gender did not have a significant influence on teacher absenteeism. It recommends sensitization workshop and seminars to eliminate negative perception of principals about female teachers and introduction of biometric attendance register to curb absenteeism, (Obiero, Mwebi & Nyang'ara 2017). The previous study was foreign while the present study will be local with emphasis on Osadenis mixed secondary school, Asaba, Delta State, Nigeria. While the study has merit, the methods need to be re-evaluated. The power of the study needs to be created by obtaining a larger sample size.

In a related study captioned relationships between teacher attendance and student scores on the tennessee comprehensive assessment program achievement test in East Tennessee and authored by Hensley & Hope (2011). The goal was to examine relationship between third, fourth and fifth grade teacher attendance as well as teacher and administrator perceptions of teacher attendance during the 2005-06,

2006-07 and 2007-08 school years. Third, fourth and fifth grade student test scores on the Tennessee comprehensive assessment programme (TCAP) achievement test given in the spring of 2006, 2007 and 2008 were also examined. TCAP score data were electronically gathered and interview was used. The population comprised of five K-5 schools and two K-8 schools in a small, rural, public school system in Tennessee. Quantitative data were analyzed using t-test and ANOVA. Findings revealed that teachers and administrators who participated in this study agreed that teacher absences do affect student test scores, but the quantitative data did not support this, (Hensley & Hope 2011). The difference was that the previous study focused on student scores, used ANOVA while the present study will use means scores of the responses. The study did not show the population of the study and techniques used in the study. That made it difficult to generalize the findings.

### **Gap in Literature**

The reviewed literature pointed out that researchers have investigated the broad teachers' absenteeism. Most of the studies were foreign based but few related local studies were found to focus elsewhere. None focused on Osadeni's mixed secondary school Asaba Delta state. However, the inadequacies, incompleteness and incommensurability the current literature has not addressed created the yawning knowledge gap the study will fill.

### **Hypothesis**

- There is no significant relationship between the use of electronic register and teacher's absenteeism in

Osadeni's Mixed Secondary Schools  
Asaba, Delta State.

### **Theoretical Consideration**

Behavioural change theory was adopted as the theoretical umbrella for this discourse. It is a seminal theory used in diverse fields of study to explain changes in human behavior. The major proponents of the theory are Icek Ajzen 1985, Madden, 1986. It entails that behavior depends on one's intention to perform the behavior. Intention is determined by a person's attitude (belief and values of the outcome of the behavior and subjective norms (beliefs about what other people think the person should do of social pressure). It could also depend on someone's ability to perform depending on the situation, (World Bank 2018). Similarly, the theory of planned behavior connotes that change in awareness and intention leads to action. Attitudes, social norms and perceived control are the offshoot of intentions and behavior of people, (Prager 2012).

In the same perspective, theory of planned behavior means that intention is directly determined by three factors: subjective norm, attitude of a person and behavior control factor; The theory is relevant to this study because it helps in studying and learning how and what influences a person's behavior such as teachers' absenteeism to work in order to create a change of such individual, (Ghouril, Khanl & Kareem, 2016).

### **Tenets of Behavioural Change Theory**

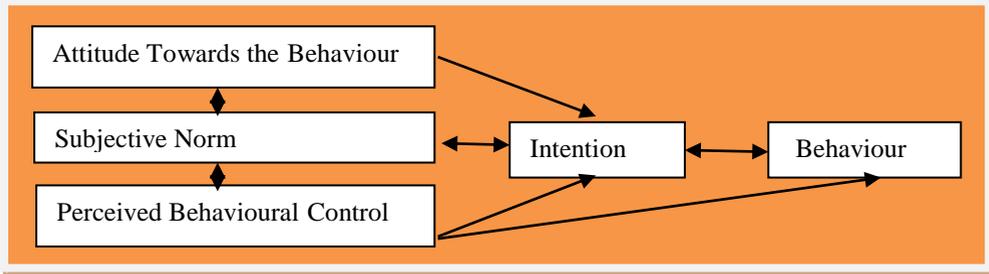
The tenets of theory of planned behavior are: (1) Nobody is in control of actual performance of a behavior (2) Behaviour influenced by conscious

thought. (3) Self efficacy (4) There is fear (5) Threat also exist (6) There must be barriers (7) There will be benefits after the change (8) This will lead to the display of attitude (9) The intention the individual behind the action takes (10) and reluctance to do something.

### **Application of the Theory to the Study**

Behavioural change theory is relevant to the study because it has been lauded as the most influential in the study of absenteeism. Consequently, behavior change takes place when someone is faced with a familiar condition and something new or different happens quickly, (Ran dolf 2018). Laying credence to that, most behaviour of absenteeism embarked upon by teachers in schools are based on what they had always done previously. That behaviour of absenteeism continued to serve the institution in the past until the Delta state government thought of the menace overtime and took a decision to change the situation via the intention of applying electronic register to eliminate teachers' absenteeism, ("Behavioural change theory," (n.d.). The intentions or decisions to make a change were either translated to a successful behavioural change or they never resulted to actual behavior change. However, the use electronic register predicted the outcome of the study which translated to a reduction of teachers' absenteeism on institutional culture, extracurricular activities, workplace abuse, poor supervision of attendance, poor control of the principal, burn out of teacher among others, (Ogden, Karim, Choudy & Brown 2007).

**Figure 1: Diagram Showing the Application of Theory of Planned Behaviour to Effects of Electronic Register on Teachers' Absenteeism in Osadeni's Mixed Secondary School, Delta State.**



**Source:** Adapted from World Bank. (2018). *Theories of behaviour change, DFID: Communication for governance and accountability programme*. Retrieved from [www.google.com.ng](http://www.google.com.ng).

The above table revealed that a successful execution of behaviour of absenteeism to work by teachers was traceable to the formation of an intention, course of an action or goal behind the action. Such intention to absent from work was determined by the attitude and feelings of teachers' or subjective norms (that which is regarded as normal, like permission, prohibition or school culture). The behaviour of absenteeism resulted to an outcome leading to disruption and ineffective instruction given to students, inefficiency and low productivity of teachers'. It was that belief that led to the attitude of absenteeism of teachers from work. In order to take care of such behaviours that need individual attention, perceived behavioural control becomes very essential. It means that, individuals understanding of their capacity or ability to put into practice a particular behaviour in order to have self control (Ghouril, Khanl & Kareem 2016).

It was in that direction, that the Government introduced the automated electronic register to monitor teachers for accurate and timely attendance. It was expected that it will bring a paradigm shift from the culture of absenteeism to spirit or behaviour of punctuality and timely attendance to work in order to improve productivity and reduce disruption and ineffective instruction to students.

## Research Methodology

### Method of study

To ensure an effective research, the study adopted a survey method. Simple random sampling method was used

### Population Size, Sample Size and Sampling Procedure

The study was a survey research. Simple random sampling procedure was used because each respondent has the equal opportunity of being selected. The total population of the study is 102 (one hundred and two), ("Monthly returns of Osadenis staff strength" 2019). The sample size of 29 was generated using Taro Yamen's formula  $S=N/(1+N \alpha^2)$

of 1973 and a self administered questionnaire was distributed proportionately among the teaching staff

of Osadeni’s mixed secondary school. The following table illustrates the sample procedure.

Table 1: Sample Procedure

Category of Staff	Population Size	(%) Size	Sample Size Proportion
GRADUATES	81	79%	23
HND	6	6%	2
NCE	15	15%	4
<b>TOTAL</b>	102	100%	29

Source: Authors Field Survey (2020).

**Method of Data Collection**

In gathering data for this study, primary and secondary sources of data will be employed. The face-to-face interview conducted by the researcher on the teaching staff and a self administered questionnaire will be used to complement the secondary source largely adopted from journals, textbooks, newspapers and government documents.

**Method of Data Analysis**

Data will be analyzed using quantitative method. A five point Likert scale was used. Data will be analyzed using mean item and percentages.

**Data Presentation and Analyses**

The result of the study was presented bearing in mind the objective. It revealed the following:

Table 2: Percentage, Decision and Mean Scores of Respondents on Whether the Use of Electronic Register has Reduced Teachers Absenteeism from Work on the following:

S/N	ITEMS	SA (5)	A(4)	UD(3)	D(2)	SD(1)	MEAN	DECISION
1	Institutional culture	8(28%)	17(59%)	0(0%)	3(10%)	1(3%)	3.96	Accepted
2	Extracurricular activities	4(14%)	9(31%)	4(14%)	10(34%)	2(7%)	3.10	Accepted
3	Work place abuse	6(21%)	11(38%)	3(10%)	7(24%)	2(7%)	3.41	Accepted
4	Poor supervision of attendance	9(31%)	7(24%)	1(4%)	9(31%)	3(10%)	3.34	Accepted
5	Poor control of the principal	6(21%)	7(24%)	5(17%)	8(28%)	3(10%)	3.17	Accepted
6	Burn out as age of teachers increase	6(21%)	7(24%)	9(31%)	5(17%)	2(7%)	3.34	Accepted
7	Family responsibility	1(4%)	12(41%)	2(7%)	11(38%)	3(10%)	2.89	Rejected
8	Personal illness	2(7%)	12(41%)	2(7%)	11(38%)	2(7%)	3.03	Accepted
9	High work load	2(7%)	4(14%)	5(17%)	14(48%)	4(14%)	2.51	Rejected
10	Job dissatisfaction	3(10%)	8(28%)	3(10%)	11(38%)	4(14%)	2.82	Rejected
11	Ineffective monitoring of work attendance	7(24%)	9(31%)	1(4%)	8(27%)	4(14%)	3.24	Accepted
12	Death in the family	3(10%)	5(17%)	6(21%)	4(14%)	11(38%)	2.48	Rejected
	<b>Total</b>	<b>57</b>	<b>108</b>	<b>41</b>	<b>101</b>	<b>41</b>	<b>37.29</b>	Accepted
	<b>Grand Mean</b>						<b>3.10</b>	Accepted

Source: Authors Field Work, (2020).

$$\text{Mean } (\bar{X}) = \frac{\sum fx}{N}$$

Data on Table 2: showed that items 1, 2, 3, 4, 5, 6, 8 and 11 had mean scores above the criterion mean of 3.0. This indicated that the use of electronic register has reduced teachers' absenteeism from work. The other items 7, 9, 10 and 12 had mean score below the criterion mean of 3.0. The grand mean (3.10) was above the criterion mean, which showed that the use of electronic register has reduced teachers' absenteeism from work and was therefore accepted.

### Findings and Discussion

The study revealed that the paradigm shift from use of manual register to electronic register, eradicated the culture and tradition of the community. The study established that there was a reduction on the idea of some teachers who formed the habit of absenting themselves from work for about one to three months. This is usually common at the demise of a husband or relation as the culture and tradition of their community demands at the detriment of their job. Such menace was addressed because the worker must clock in and out of work through thumb printing. (W. Nwobi, personal communication, January 15, 2020). In the same manner, Table 2: item 1 indicates that a greater percentage of the respondents agreed that there was reduction on absenteeism in relation to institutional culture as the following statistics revealed (28% SA, 59% A, 0% U, 10% D and 3% SD. Mean=3.96).

In the same manner, the result on Table 2: item 2 also revealed that the

percentage and mean score on absenteeism as it concerns extracurricular activities was accepted as follows: (14% SA, 31% A, 14% U, 34% D and 7% SD. Mean=3.10). The grand mean was accepted because it was above the criterion mean.

Again, it was also evident that from the interview response that initially, workers' will go to work and sign in for several friends who may end up not going to work. Since the introduction of the electronic register, such undue practices are no longer tenable because finger prints differ. Ghost workers who are resident in other states of the nation but claim to be staff of Delta state were easily discovered because the automated electronic device has the bio data of all the staff. It alleviated the fright of some workers' going the same time to clock-in and clock-out (G. Nwobi, personal communication, January 15, 2020). Furthermore, statistically from Table 2: item 3, the percentage of absenteeism on workplace abuse was reduced as shown below (21% SA, 38% A, 10% U, 24% D and 7% SD. Mean=3.41).

Previously, the absence of supervision and inspection of schools could have accounted in part for the seemingly high cost of absenteeism among school teachers, (Mothibele 2017). However, the use of electronic register also revealed on Table 2: item 4, (31% SA, 24% A, 4% U, 31% D and 10% SD. Mean=3.34), that there was reduction on the number of teachers' who absent from work without genuine reasons and official permission as statistics on the

table revealed. That led to improved production and quality of work. Poor performance of teachers was reduced. In the same perspective, the study showed that most of the ghost workers no longer find it easy because of the use of thump print of workers during clocking –in and clocking-out of work. The unions (Nigerian Union of Teachers) have been the beneficiary of ghost workers over the years. This is because the unions connive with the ghost workers who agree to pay them a certain percentage of their salary on monthly basis. Besides, F. Akpata (personal communication, January 15, 2020), maintained that dead workers whose names were still on the payroll of Delta State government were discovered.

Regarding poor control of principal, the Vice - principal administration at present, should be aware of staff absenteeism to work. He is supposed to send a letter written by the teacher with reasons for being absent to work to Hekerbella (the company in charge of the electronic register). There is also a manual attendance register for teachers which eventually are submitted to post primary education board (G. Nwobi, personal communication, January 15, 2020). That was in tandem with the result on Table 2: item 5 that revealed the percentage and mean score of respondent that accepted as follows: (21% SA, 24% A, 17% U, 28% D and 10% SD. Mean=3.17). In other words, there was reduction on absenteeism through adequate control of teachers by the principal. The same evidence was established by Musyoki (2015) who said that monitoring of teachers by the

principal accompanied by disciplinary action, use of camera, regular assessment by Quality Assurance Standard officers and assessment by Ministry officials also reduced absenteeism.

It was evident from the study that, the excuses of burnout as the age of the teacher increased was taken care of. This was because teachers joined the teaching profession when they were highly motivated but they burnout as the age of the teacher increases (Glewe & Kremer, 2006). Similarly, prolonged related stress, within employees who have face-to-face with people from other portfolio also translates to absence from work as a result of overload or long hours devoid of rest, (Badubi 2017). In the same context, Table 2: item 6 result aligned with the above submission that there was improvement as statistically shown below (21% SA, 24% A, 31% U, 17% D and 7% SD. Mean=3.34). Besides, workers who lacked the zeal to perform either resigned or were forced by the use of electronic register to become active again via being punctual to work.

In the same direction, the machine gave the employer an opportunity to ascertain the actual number of employees in the institution. Amidst that, it helped to ascertain the actual time an employee resumes duty. In situations where time factor is taken into consideration in the payment of salary, the clocking machine will aid the employers of labour to calculate workers salaries based on the number of hours put in at work (K. Idi, personal communication, January 15, 2020). In the same context, it has helped to enforce punctuality unlike the era of

manual attendance list where employees forged the dates and time of arrival to work. Furthermore, it led to a transformation from the previous manual transcribing of data which was capital intensive to the era of biometric register that significantly reduced time and attendance fraud. That reduced the labour and capital intensive nature of manual attendance and other pranks played by employees, (Kronos 2017).

Following that, absenteeism on family responsibility is linked to the statistical data on Table 2: item 7, as indicated below (4% SA, 41% A, 7% UD, 38% D and 10% SD. Mean=2.89). The mean score was indicative of the fact that teachers' absenteeism did not reduced on family responsibility. Again, the percentage of respondents that disagreed was minimal. According to Erickson, Nichols & Ritter (2000) family responsibilities should not have direct effects but rather moderates the effect of attendance motivation on absenteeism. In other words, family responsibilities can't contribute directly to increased absenteeism but are mediated by whether such demands are perceived as being stressful or harmful to the family well-being in other ways. However, the emotional well-being of one's family life could spill over to affect one's work life.

Besides, the study showed that even in an event of sickness, the teacher must struggle to be present at work unlike what it was before the introduction of electronic register (U. Ayare, personal communication, January 15, 2020). That was in agreement with the result on Table 2: Item 8 which revealed that a greater percentage of the respondents

agreed that the use of electronic register has reduced teachers' absenteeism from work on personal illness as revealed on Table 2: item 8, as follows: (7% SA, 41% A, 7% U, 38% D and 10% SD. Mean=3.03). The mean score was above the criterion mean which signified accepted. Similarly, employees no longer use sickness as an excuse to absent from work because no matter how severe an illness is, the employee will strive to clock in and out of work. Electronic register has reduced employee absenteeism on lateness, abuse of time, commitment to duty and discipline (K. Agwemmor, personal communication, January 15, 2020).

In consonance with the above view, the colleagues of the absentee's meant to stand for their absent co-workers are no longer subjected under increased pressure and stress. For instance the rate of substituting teachers has reduced and they measure up to the regular classroom teacher's routine and methods to stimulate students to learn. Teachers no longer attract excess workload because they want to substitute an absentee. By and large, the use of electronic register reduced absenteeism on adequate supervision (Badubi, 2017). In the same context, Obiero, Mwebi, & Nyang'ara (2017), submit that excessive workload should not be a reason for absenting from school. Therefore majority of the respondents from Table 2, item 9, depict as follows; (7% SA, 14% A, 17% U, 48% D and 14% SD. Mean=2.51). The grand mean was rejected because it was less than the criterion mean of 2.5. In the same perspective, Augustine (2020) concurred that, even teachers who

feigned their retirement age in order to stay longer and become unproductive while complaining about workload would be exposed.

In the light of absenteeism on Job dissatisfaction represented as Table 2: item 10, showed below: (10% SA, 28% A, 10% UD, 38% D, 14% SD. Mean=2.82). It was evident that teachers' absenteeism was not reduced because the mean score was below the benchmark of 2.5 and a smaller percentage of the respondents were negative in their response. That was why Blau (1985) depicts that non professional teacher's use the teaching profession as a stepping stone in life. Therefore they chose to teach but as soon as they get something they prefer, they quit the teaching job. Ejere (2010) confirmed the above summation by saying that teachers' absent themselves from school as a result of wanting to leave the profession they are engaged in when it becomes unattractive to them. However, the deep rooted dissatisfaction with their job emanated from their poor condition of service and low career prospects.

In a similar context, the respondents perceptions as shown on Table 2: item 11, revealed the following: (24% SA, 31% A, 4% UD, 27% D & 14% SD. Mean=3.24). It was evident from the foregoing that there was a decrease on teachers' absenteeism in relation to ineffective monitoring of work attendance. That was because the mean score was higher than the benchmark of 2.5 required and the percentage of respondents response was also higher.

In view of Table 2: item 12 above, the percentage representation of the result is

URL: <http://journals.covenantuniversity.edu.ng/index.php/cjbss>

as follows: (10% SA, 17% A, 21% UD, 14% D, 38% SD. Mean=2.48). It was obvious that the mean score was below the criterion mean which was rejected. Death is a natural thing that awaits everybody. Therefore in an event of death, teachers are usually allowed to take some time off work to attend to the burial. In corroboration of the above view, "Missing work due to death," (n.d.) posited that in an event of the death of a loved one, the affected person often loses focus. His/her attention will be directed towards home and seeking for ways to deal with the grief. On account of that, the worker reserves the statutory right to a "reasonable" amount of unpaid time off in line with Employment Rights Act to allow them to deal with unforeseen matters and emergencies involving a dependant, (Landau 2014).

Furthermore, it puts a check on time theft and buddy punching that assists the organisation to maximise cost. In the same vein, N. Ethele (personal communication, January 15, 2020), further explained that workers are now punctual to work unlike before when workers absent themselves from work as they wanted without due process.

In as much as there is improvement on teachers absenteeism, the electronic register is faced with some challenges which includes it malfunctions most time (P. Marah, personal communication, January 15, 2020). This is as a result of network fluctuation from time to time. Again, there is lack of constant electricity to power the machine and lack of experts to manage and maintain the device. This can cause the information on it to be wiped off if

not properly maintained (N. Ethele, personal communication, January 15, 2020). Despite that, the machine breaks down occasionally because of network failure (T. Ntoka, personal communication, January 15, 2020). In an event of network fluctuation, clocking in and out are delayed. Teachers whose classes are on first period could have their lessons affected while waiting to clock in (K. Agwemoria, personal communication, January 15, 2020). More so, some teachers see it as a painful process since they have to wait after several attempts to clock in and out of work.

### Concluding Remarks

The principal conclusion to draw from this study is that the use of electronic register has greatly reduced the rate of absenteeism to work. As such, it led to reduction of ghost workers because of the need to thumb print while clocking in and out of work. School heads also take supervision serious. Again, the productivity of teachers improved. Similarly, the idea of using the death of a relative as excuse to absent for months was eradicated. It suffices to say that for efficiency and effectiveness at work, the following recommendation should be applied to strengthen and pull the institutions out of the quagmire of absenteeism from work.

### Recommendations

The study recommends the following:

1. There should be reasonable deduction in the salary of any teacher who absent from work without an acceptable reason and permission.
2. Wage payment should be dependent on production quality. If teachers are aware that their salaries are to be affected negatively, they will bring out their best and desist from absenteeism.
3. The school management should implement incentive programme to encourage and reward good attendance. This could be achieved through giving of monetary bonus to teachers whose attendances are unquestionable.
4. Principals need to explain attendance expectations to faculty and staff at the beginning of each school year and then follow up to monitor attendance of workers.
5. The functions of the machine have to be improved. To achieve this, there should be constant supply of electricity to power the machine and provision of trained experts to manage and maintain the device. This will help in sustaining the data on it.
6. The school authority should put teachers' attendance data on students' report card. If teachers know that the students will make mockery of them, they will bring out their best and reduce the rate of absenteeism.

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# Labour Innovativeness and Organizational Productivity: The Case of Lubcon Nigeria Limited

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**Abstract:** Understanding employees, their behaviour and their influence on an organization are one of the most significant challenges facing organizations more than ever in today's complex and dynamic environment. It is, therefore, pertinent to examine labour innovativeness and organizational productivity. This study adopted descriptive survey research. The population of the study was 460 employees of Lubcon Nigeria Limited, and Guilford and Flurchter (1973) formula used to determine the sample size of 216. The study employed a primary source of data collection, and the respondents were staff of various departments of the company. The hypothesis was analyzed through regression analysis to test the formulated hypotheses. The findings reveal that ( $R=0.934$ ,  $R^2=0.871$ ,  $(0.000) < 0.5$ ). This implies that the model fitted by explained 93.4% of the variability in organizational productivity. The study concludes that employees' innovativeness has a positive and significant impact on organization performance. Therefore, the study recommends that there should be a favourable environment where employees are allowed to be innovative and contribute to their ideas to achieve higher organizational productivity.

**Keywords:** Innovativeness, Labour, Productivity, Lubcon;

## Introduction

Successful organizations depend on successful and multifaceted products. Therefore, new product planning and

development can be described as the lifeblood of any business organization. This point supported by the assertion made by Kotler (2000) that consumer

desires and the expects a want and expect a torrent of new and improved products. Since no business can survive without the customer, it is thus becoming increasingly risky for an organization not to innovate as consumers are continuously expecting new and improved products. Continuous innovation that aimed at meeting the changing needs of the consumer is one sure way to avert obsolescence and loss of customer confidence in the product of organization. Product development demands the integration of many actors of different knowledge and expertise to develop an acceptable product by the customers (Chux, 2010).

Innovativeness is, therefore, mainly about discretionary extra-role behaviours that go beyond the formal job requirements, and organizations are increasingly dependent on their employees' willingness to go the extra mile (Wolfe, 1994). Therefore, the need for innovative employees to initiate innovation within the organization cannot be overemphasized. Labour innovativeness has been examined through various ways in extant literature (Mumford, 2002). Varadarajan, Srinivasan, Vadakkepatt, Yadav, Pavlou, Krishnamurthy and Krause (2010) asserted that, historically, technological innovations had played a significant role in shaping the businesses landscape.

It reported that Lubcon Limited spends a lot of money hiring and keeping the right set of labour in advancing their organizations. Understanding employees, their behaviour and their influence on the organization are one of the most significant challenges facing

organizations more than ever in today's complex and dynamic environment. It is, therefore, pertinent to examine labour innovativeness and organizational productivity in the said organization.

The business will need to have the right set of employees who are well motivated for innovativeness to take place. To this extent, there is a need for organizations to embark on product planning and development as a means to attain a competitive advantage over competitors. In other words, the competitive nature of some organizations requires that managers introduce new products to keep up with rivals, as the high rate of failure in many organizations can be attributed to insufficient labour innovativeness. This study, therefore, seeks to examine the impact of labour innovativeness on organizational productivity;

## **Literature Review**

### **Conceptual Clarifications**

Innovation is the application of ideas, concepts and designs to create wealth. It is "the act of introducing something new". Innovation can also be the process of being creative and implementing new methods to organize or run a company and to create improved results (Ehigie & McAndrew, 2005). Besides, innovation may be seen as a development of customers' values via the solutions that meet the new undefined or perhaps existing market needs in unique ways. The remedies may include, the new or more effective products, processes, services, technologies or the ideas that are more available to market and the society at large (Alegre, Lapiedra & Chiva, 2016;

Calantone, Harmancioglu, & Droge, 2010). Labour innovativeness can thus be examined throughout the innovation process, from initial idea generation to product development, and eventually to product commercialization, or the adoption of new processes or structures in the organization (Axtell, Holman, Unsworth, Wall, Waterson & Harrington 2000, Vincent, Decker & Mumford, 2002).

More importantly, innovativeness usually focuses on the development and successive refinement of inventions into usable products or techniques that are deemed worthy of being launched in a market (Frenz & Oughton, 2005; Baer, & Oldham, 2016). There is no universal definition of innovation, and this is attributed to the heterogeneity of sources and outcomes of innovation, which makes it challenging to identify and analyze (Hall, 2005; Brion, 2010). Beaver and Jennings (2014) see innovativeness as production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres, renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome.

Innovativeness is, therefore mainly about discretionary extra-role behaviours that go beyond the formal job requirements in complex and ambiguous conditions, and organizations are increasingly dependent on their employees' willingness to go the extra mile (Avermaete et al., 2003; Cadilhon, 2013).

## **Labour Innovativeness**

The labour innovativeness referring to employees' propensity to innovate can be conceived as complex behaviour consisting of idea generation, idea promotion and idea realization to meet organizational goals in novel ways (Neels & Kris, 2005; Cooper, 2001; Cooper & Kleinschmidt, 2007). Individuals, alone or in groups, undertake innovative activities from the intention to derive anticipated benefits from creative change. Creativity is central to innovativeness, but the concepts are not synonymous. Innovation can be seen as a successful and intentional implementation of creativity, which is more subjective and context-specific by its nature (Avermaete, Viaene, Eleanor & Crawford, 2003; Charles, 2012). Creativity, as such, may be limited to idea generation alone, but by definition, innovation produces benefits for the people involved in the innovative process (Adams, 2015; Amaratunga & Baldry, 2011). Therefore, labour innovativeness requires creativity, but creativity does not always lead to innovation.

Trott (2015), labour innovativeness requires that the individual is both able and willing to be innovative. Concerning abilities, above-average general intellect, specific cognitive capabilities, general skills and task and context-specific knowledge, for example, facilitate innovativeness. Beyond knowledge and skills, innovativeness requires intrinsic motivation and a certain level of internal force that pushes the individual to persevere in the face of challenges

inherent in the creative work (Wong & Tong, 2012). Moreover, the internal force keeps the employee going even when the problems are successfully overcome: it is about a positive tension and desire to excel. Consequently, employees' initiative, flexibility, perseverance and willingness to go beyond their actual goal accomplishment to come up with novel and organizationally beneficial ideas characterize innovativeness (Goffin & New, 2001; Bhuiyan, 2011). Often it is impossible to set goals for

innovativeness, as it is such a context and problem-specific.

**The Innovation Span**

The idea of innovation-span not only clarifies the apparent conflict in the meaning of innovation (Woodcock, Mosey & Wood, 2000). It can also provide a wider and yet congruent context to all works on innovation, by identifying at the outset, the components of the innovation-span, they are concerned with.

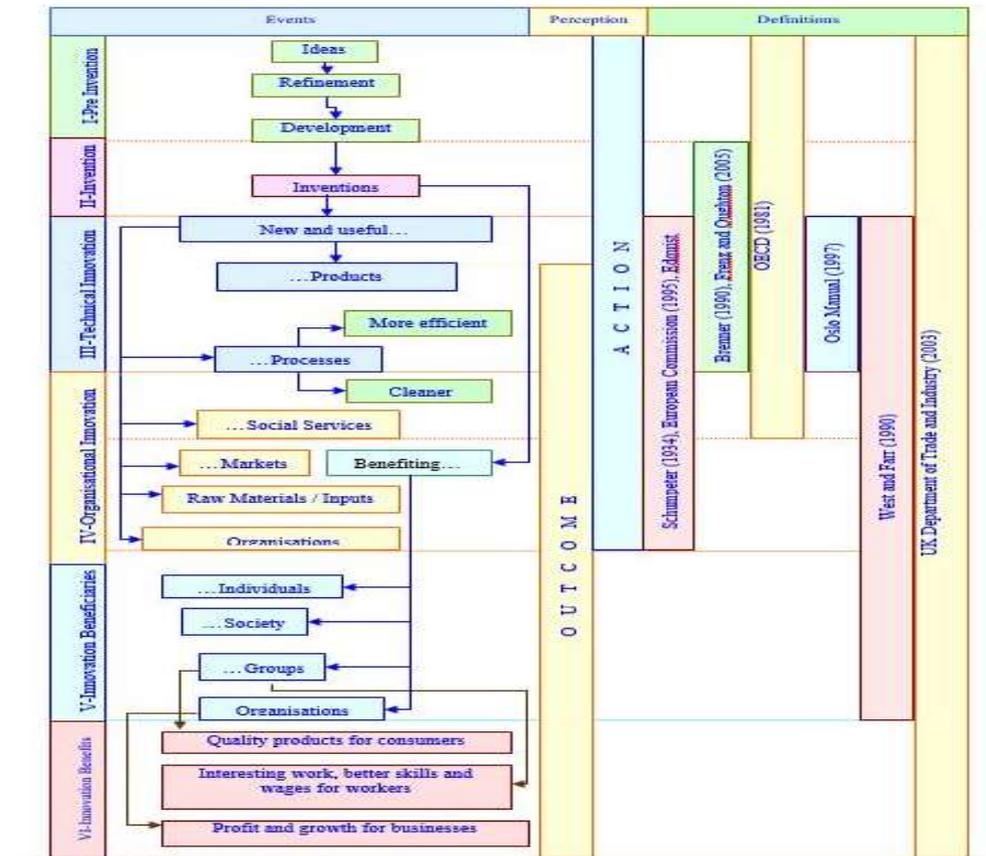


Figure 1: The innovation span

Source: Adapted from Wyld, D.C. (2010). Vijay (2009)

The innovation-span may also provides an instrument to compare the previous studies on the innovation that brings into sharp relief the uselessness of comparison of works concerning non-segments of the innovation-span (Vijay, 2009). Besides, it has the flexibility of incorporating any new sections or components emerging from future work, not included here, by linking them to the span at appropriate points (Salan & Store, 2012; Sandmeier, & Gassmann, 2010; Seuring, 2008). The utility of the notion of innovation-span becomes evident by the fact that this dissertation concerns segments I, II and III of the innovation-span as it explores the refinement and development of ideas into new and useful products and processes in the organizational productivity.

## **Theoretical Framework**

### **Individual Innovativeness Theory**

Rogers gave inspiration to several studies regarding innovation and individual innovativeness (Brandon, 2008; Gillard, Bailey and Nolan, 2008; Jackson, Yi and Park, 2010; Janssen, Van De Vliert and West, 2004; Kilicer and Odabasi, 2010; Yuan and Woodman, 2010 cited in Vijay, 2009). Rogers defines innovation as an idea, practice, or object that is perceived as new by an individual or other unit of adoption (Rogers, 2003). Individual innovativeness defined as developing, adopting or implementing an innovation (Chanal, 2004). Rogers (2003) states that in his own innovativeness theory, there is always new information within the social system and that this further information is processed by adopters (Rogers, 2003).

In the process of adaptation, adopters act upon their perceptions regarding the characteristics of the innovation. Although there are several contextual

factors, some findings are influential on adopters' decisions regarding adaptation to innovation. In other words, individuals are likely to have certain perceptions regarding a new technology that they have met in their social environments. These perceptions are quite crucial in terms of innovativeness. It is seen that individuals have different degrees of adaptation to innovation. In general, the population distribution of adaptation to innovation expected to have an almost normal distribution (Husig ad Kohn, 2013). However, Rogers (2003) states that there is no normal distribution due to different determiners such as resistance to technology and material dimension regarding the innovation distribution; that in a society, there are not many innovative individuals; and that there is a bell-shaped distribution.

### **Empirical Studies**

Empirical research based on the principles and insights presented in this paper was conducted by Sarra, Mehrez and Karim (2014) researched Employee Empowerment and Its Importance for Trust, the study used both primary and secondary sources of data collection and used regression to analyzed the data collected. The main result of the empirical research conducted with a sample of 248 firms belonging to ICT Tunisian sector is that employee empowerment has a positive effect on trust, innovation and organizational productivity.

Eric (2014) in his study, he investigated Enhancing Strategies to Improve Workplace Performance. When employees become dissatisfied at an organization, they may develop negative behaviors that impede profits and productivity. The purpose of this single case study was to explore what strategies are essential for

organizational leaders to improve workplace performance. Maslow’s hierarchy of needs served as the conceptual framework for this study. Data collection involved face-to-face, semi-structured interviews of 20 managers, floor employees, and clerical staff from a business organization in Southwest Georgia. Participant selection based on employees’ tenure of at least 1 year of experience within the organization. Interviews were transcribed and coded for common patterns and themes. The study outcomes suggest organizational leaders may increase employee work performance by enhancing strategies that provide a definite assortment of motivational tools and opportunities. Besides, these findings suggest collaborative decision making between management and employees has a positive relationship with work attitudes and the engagement of employees. Leaders in organizations may apply these findings to develop an enriched workplace environment, one that could improve employee retention rates.

**Methodology**

This study adopts survey research; this is because it is a method of obtaining research information by asking a set of pre-determined questions from a given sample of individuals drawn from a defined population. The target population comprised of all staff currently employed at Lubcon Nigeria Limited i.e. the senior team, junior staff and the casual workforce. The state chosen for this study was Kwara State for convenience. A total of four hundred and seventy (470) employees were identified as potential respondents.

The sample size was determined by adopting Guilford and Flruchter (1973) formula for estimating sample size:

$$N = \frac{1 + Q^2 N}{1 + (0.05)^2 (470)}$$

Where N = Population size = 470  
 Q = alpha = 0.05

$$N = \frac{470}{1 + 0.020625} = 216$$

A simple random technique was employed to elicit information from 216 respondents. From the list, a sample is drawn, and each person has an equal chance of being drawn during the selection round. This number of 216 respondents is also following the views of Hill, Brierlely and MacDougall (2003), who reported that a sample size of 100 and above is sufficient to present good concise research findings and also provide a good representation of the population or organization or any subject investigated. Primary data were used to test the hypothesis through the use of questionnaires administered to the respondents. The questionnaire was used as a research instrument, which comprises two sections, and sections A contained information on socio-demographic characteristics of the participants; and the section B regarding the view of respondents on labour innovativeness and employees’ productivity adapted from Lucio and Alfredo (2011). The study used multiple methods of regression analysis to analyze the data.

## Discussion of Results

**Table 1. Presentation and Analysis of Respondents' Perception of Labour innovativeness and organizational productivity.**

Options		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	60	31.7	31.7	31.7
	A	88	46.6	46.6	78.3
	UN	17	9.0	9.0	87.3
	D	11	5.8	5.8	93.1
	SD	13	6.9	6.9	100.0
	Total	189	100.0	100.0	

Source: Field Study, 2019

Table 1 posited that 78.3% (31.7% strongly agreed and 46.6% agreed) constituting the majority of the respondents supported that employees are flexible as they respond well to

organizational changes. 9.0% of the respondents were undecided, and 12.7% of the respondents (5.8% disagreed, and 6.9% strongly disagreed) did not support.

**Table 2: Average productivity of employees has improved over the years**

Options		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	71	37.6	37.6	37.6
	A	83	43.9	43.9	81.5
	UN	10	5.3	5.3	86.8
	D	15	7.9	7.9	94.7
	SD	10	5.3	5.3	100.0
	Total	189	100.0	100.0	

Source: Field Study, 2019

The Table 2 depicted that 81.5% (37.6% strongly agreed and 43.9% agreed) constituting the majority of the respondents agreed that the average productivity of employees has improved

over the years, 5.3% of the respondents were undecided, and 13.2% of the respondents (7.9% disagreed and 5.3% strongly disagreed) did not agree.

Table 3: Idea generation by our employees is at the top priority of the company

Options		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	58	30.7	30.7	30.7
	A	71	37.6	37.6	68.3
	UN	13	6.9	6.9	75.1
	D	21	11.1	11.1	86.2
	SD	26	13.8	13.8	100.0
	Total	189	100.0	100.0	

Source: Field Study, 2019

Table 3 indicated that 68.3% of the respondents (30.7% strongly agreed and 37.6% agreed) which constitute the majority decided that the idea generation by our employees is at the

top priority of the company, 6.9% of the respondents were undecided, and 24.9% of the respondents (11.1% disagreed and 13.8% strongly disagreed) did support.

Table 4: People are not penalized for new ideas that do not work

Options		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	73	38.6	38.6	38.6
	A	84	44.4	44.4	83.1
	UN	18	9.5	9.5	92.6
	D	8	4.2	4.2	96.8
	SD	6	3.2	3.2	100.0
	Total	189	100.0	100.0	

Source: Field Study, 2019

Table 4 showed that 83.1% (38.6% strongly agreed and 44.4% agreed) which made up the majority of the respondents agreed that the people are not penalized for new ideas that do not work, 9.5% of the respondents were uncertain, and 7.4% of the respondents

(4.2% disagreed and 3.2% strongly disagreed) did not agree.

### Test of Hypothesis

**H<sub>01</sub>:** Labour innovativeness does not have a significant impact on organizational productivity.

Table 5 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.934a	.871	.866	.003

Source: Field Study, 2019

a. Predictors: (Constant), Idea generation, idea promotion, idea realization

The coefficient (R) value of 0.934 (93.4%) indicates the existence of a strong positive impact of labour innovativeness on organizational productivity. The Co-efficient of Determination (R<sup>2</sup>) value of 0.871 (87.1%) explains the proportion of the total variations in organizational productivity (Value Added) was accounted for by variations in labour

innovativeness. The adjusted R<sup>2</sup> value is 0.866 (86.6%), which indicates that the actual variation in organizational productivity (Value Added) could be attributable to 86.6% of labour innovativeness. It also indicates that labour innovativeness has a significant and positive impact on organizational productivity.

Table 6 ANOVA<sup>b</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	200.665	2	200.665	11.325	.000 <sup>a</sup>
	Residual	30.330	187	.162		
	Total	230.995	189			

Source: Field Study, 2019

a. Predictors: (Constant), Idea generation, idea promotion, idea realization

b. Dependent Variable: Value Added

Table 6 posited that the calculated P-value of 0.000 (positive) is less than the tabulated (alpha) value of 0.05 at 95% level of confidence. Thus, the Null hypothesis, which posits that labour innovativeness does not have a significant impact on organizational productivity, is rejected, while the alternative hypothesis that established that labour innovativeness does have a significant impact on organizational productivity is adopted. This is because the statistical decision rule states that

accept the Null hypothesis (H<sub>0</sub>) if the calculated P-value is higher than the

tabulated P-value of 0.05 at 95% level of confidence; otherwise, reject Null hypothesis (H<sub>0</sub>) and accept the alternative hypothesis. The calculated F-ratio of 11.325, when compared with the tabulated value of 2.344, indicates that the model is significant because the calculated F-ratio is higher than the tabulated value at 5% level of significance. Therefore, the alternative hypothesis is adopted, and it could be

established that labour innovativeness has a significant impact on organizational productivity

**Table 7** **Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.276	.057		4.852	.000
	Idea generation	1.442	0.34	.075	56.146	.002
	Idea promotion	1.665	0.44	.045	28.224	.001
	Idea realization	1.786	0.22	.880	35.175	.000

Source: Field Study, 2019

a. Dependent Variable: Value Added

Table 7 shows the coefficient used in testing whether the three independent variables contributed information to the predictor of the dependent variable “value-added”. The t-value in this study was found to be significant at 0.05 levels. All the proxies emerged to be significant (Sig. t <0.05) on the independent variables in the regression model. Hence there is a substantial difference between Idea generation, idea promotion, idea realization and organizational productivity.

The result implies that for one additional unit of “idea generation”, the value-added, which is the proxy for organizational productivity, increase by 7.5%. This means that the company should take into cognizance the ideas generated by their employees to increase the value-added by employees.

It is also found that the result of “idea promotion” positively impacted on organizational productivity. The result revealed that a unit adoption of “idea promotion” will bring about 4.5%

increase in the value-added and by extension organizational productivity. This is statistically significant at 5%. The result of “idea realization” shows that idea realization positively impacted on organizational productivity. The magnitude of the beta coefficient is statistically significant at 5% for the sample. The result shows that idea realization impacts on organizational productivity by 88% for the total sample.

The Hypothesis, which is depicted through the regression analysis with that there is a link between labour innovativeness and organizational productivity. Hence, the null hypothesis was rejected. The results of the analyses indicated that labour innovativeness has a strong positive relationship with organizational productivity. This is because the adjusted R<sup>2</sup> value of 0.866 (86.6%) implies that the actual variation in organizational productivity could be attributable to 86.6% to labour innovativeness. This finding is in line

with that of Sarra, Mehrezand Karim (2014) in where employee empowerment had an impact on organizational productivity. The outcome of this study further indicated a correlation between the variables of employee empowerment, innovation, and organizational productivity, which is further strengthened by the findings of this study.

### Conclusion and Recommendations

The study examined labour innovativeness and organizational productivity. Employees constitute a significant part of an organizational existence in today's society. As the competition among firms in most industries is increasing daily, companies should work towards creating an enabling environment for labour innovativeness. It, therefore, concluded that the level of impact between labour innovativeness and organizational

productivity is very strong, therefore when employees are innovative through idea generation, idea promotion and idea realization, this will result in positive organization performance through higher added value by employees. Further studies should include responses to labour innovative in public organizations. The following recommendations are made:

- i) There should be a favourable environment where employees are allowed to be innovative and contribute to their ideas to achieve higher organizational productivity. CEOs should come up with policies that will encourage labour innovativeness.
- ii) Employees should be encouraged to contribute their ideas and creativity in every possible and implementable situation to contribute to the organization's productivity.

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## Promotional Mix and Customer Patronage: A Study of Telecom Subscribers in Lagos and Ogun States, Nigeria

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**Abstract:** In this present world, a modern telecommunication infrastructural development is not only essential for domestic economic growth, but also a prerequisite for participation in the increasingly competitive world market and for attracting new investments. The main objective of the study is to examine the effect of promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) on customer patronage among telecom subscribers in Lagos and Ogun States, Nigeria. Survey research design was used for the study. Data was collected through the use of questionnaire. Descriptive statistics was used to analyze the respondents' biodata while multiple regression analysis was used to test the hypothesis formulated. Findings of the study revealed that advertising, sales promotion, public relations, personal selling, and direct marketing had significant effect on customers' choice of mobile telecommunication network in Lagos and Ogun States, Nigeria. Advertising, sales promotion, public relations, personal selling, and direct marketing had significant effect on customers' expense among telecom subscribers in Lagos and Ogun State. The study concluded that customer patronage will increase in mobile telecommunication firms when they provide

adequate information about the services they offer through sufficient advertisements, publicity, personal selling, and direct marketing as well as provide the needed incentives that will encourage rapid purchase of their offers. The study recommended that telecommunication service providers should put in more efforts in their advertisement campaigns, carry out frequent sales promotion programs, build and maintain long lasting relationship with the members of the public, engage more in one-on-one interaction with prospective customers, and give room for customers to make enquiries, lodge their complaints, and offer suggestions on how they can be served better in order to attract more customers and increase their market share.

**Keywords:** Promotional mix, Advertising, Sales promotion, Public relations, Customer patronage

## Introduction

The world has become a global village with telecommunication being an indispensable tool in the entire process of globalization. In this present world, a modern telecommunication infrastructural development is not only essential for domestic economic growth, but also a prerequisite for participation in the increasingly competitive world market and for attracting new investments. However, it is not in dispute that telecommunication and information technology play essential roles in this process. This is obviously why development in this vital sector over the years has been very phenomenal all over the world. Fortunately, Nigeria has not been left out of this race of rapid development in the telecommunication industry (Ajisola & Awodun, 2014).

Mobile telecommunication has transformed the way in which people communicate and disseminate information and ideas, especially in developing countries. In Nigeria, the full deregulation of the telecommunication industry in Nigeria paved way for private sector participation in the provision of mobile

telecommunication services to citizens of the Nigeria. This led to the licensing of global system for mobile (GSM) communication operations in 2001. Due to the upsurge and speed in the growth of subscribers of the telecommunication industry in Nigeria, the GSM market has given room for intense rivalry among telecom operators (Hashim, 2014).

According to Adeleke and Aminu (2012), GSM revolution commenced in Nigeria in August 2001, when mobile telecom operators such as Econet (now Airtel), Mtel, and MTN were given license by Nigerian Communications Commission (NCC) to provide telecommunication services to Nigerian citizens. Other telecom service providers such as Globacom and Etisalat were later licensed to operate. The operations of these telecom service providers have continued to transform the state of information and communication technology in Nigeria. The astronomical growth in the subscriber base of the GSM operators has led to intense competition in the mobile telecommunications market in Nigeria. This competition is exacerbated by the lower switching costs among the

subscribers of the various networks which manifest in the frequency with which the subscribers freely enter and leave the networks.

The deployment of GSM system into Nigerian telecoms market was universally embraced and found to be relatively efficient at the inception. With time, operators in the telecommunications industry experienced an unprecedented growth in customer-base which later incapacitated the networks to function efficiently. This explosive growth brought huge revenue to both the operators and government through tax and license fee (Adegoke & Babalola, 2011).

According to Oluwafemi and Adebisi (2018), the Nigerian telecommunication market is deregulated and liberalized, thus making it highly competitive. Therefore, customers should be offered sophisticated products and services in order to keep the firm the heart of subscribers. Products and services should not only be provided to consumers, rather information about such product and service offerings should be effectively communicated to the consumers. To this end, effective use of promotional mix such as advertising, sales promotion, public relations, direct marketing, and personal selling will help telecommunication service providers to provide customers with an in depth understanding of how their products and services will meet and satisfy the needs of customers in order to stimulate and sustain subscribers' patronage that would result in customer loyalty. It is not sufficient for service operators in any competitive market to provide quality service, but it

is worthwhile that they communicate within a reasonable budget everything that subscribers need to know about current and future brand in order to take informed decisions favorable to the firm (Oluwafemi & Adebisi, 2018).

Nigeria has been ranked the Seventh (7th) position among the top ten countries with the highest number of mobile phone subscription in the world (Wee, 2019). Mobile telecommunication service providers have invested over US\$ 5.750 billion into network expansion and provision of better services in order enhance the level of customer satisfaction and customer patronage (Samuel & Olatokun, 2014). Despite these efforts made by telecom service providers in Nigeria, Nigerians still complain about still complain bitterly about the services provided by telecom operators in terms of high call tariffs, poor voice signals, illegal deduction of airtime for calls not made, poor reception, errors in connection and poor inter-connectivity with other networks among others. Also, Nigerians x-rayed the activities of telecommunications service providers operating in the country, saying they have failed to provide quality service despite having spent lots of money for poor quality service. These complaints are mainly because Nigerians do not enjoy the services provided as stated in the promotional mix of telecom service providers in Nigeria. Consumers have judged the information provided during promotional activities of telecom service operators as misleading and unethical because such information claim do not reflect in the services they offer (Emerah, Oyedele, & David, 2013;

Samuel & Olatokun, 2014; Ubabukoh, 2014; and Amah, Ogunnaike, Ayeni, & Ojo, 2017). Hence, customers become dissatisfied and switch from one service provider to the other.

Several studies such as Ismail, Hussain, Shah, and Hussain (2012); Muhanji and Ngari (2015); Nkana and Dafiovo (2015); Onigbinde and Odunlami (2015); Sultan (2015); Abdullah (2016); Jemutai and Wambua (2016); Khanfar (2016); Shamout (2016); Yang and Lee (2016); Egwuonwu, Adeniran, and Egwuonwu (2017); Fasana and Haseena (2017); Shirisha and Sucharitha (2017); Bhatti (2018); Tibebe and Ayenew (2018); Ezenyilimba, Mbah, and Eze (2019); etc. have been conducted on promotional mix and customer patronage. However, to the best knowledge of the researchers, there is paucity of research on promotional mix and customer patronage among telecom subscribers in Lagos and Ogun States, Nigeria. This study filled this gap in knowledge by investigating the effect of promotional mix on customer patronage among telecom subscribers in Lagos and Ogun States, Nigeria. The study also filled the gap in knowledge by examining the combined effect of the independent variables on each of the dependent variable as there exists dearth of research that examined the combined effect of the independent variables on each of dependent variable in the literature.

The main objective of the study is to examine the effect of promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) on customer patronage

among telecom subscribers in Lagos and Ogun States, Nigeria.

The research hypotheses developed for this study are stated as follows:

H01: Promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) has no significant effect on customers' choice of mobile telecommunication network in Lagos and Ogun States, Nigeria.

H02: Promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) has no significant effect on customers' expense among telecom subscribers in Lagos and Ogun States, Nigeria.

## **Review of Related Literature**

### **Conceptual Review**

According to Ross (2001), promotional mix can be defined as the totality of marketing communication programs set aside by an organization to communicate the merits of its products and services in the mind of prospective customers. Adebisi (2006) defines promotional mix as a set of marketing activities that provides adequate and accurate information about the benefits of a firm's products and services with the sole aim of inducing consumers to either purchase the products as soon as possible as well as keep buying the products. Fill (2006) defines promotional mix as a management process through which an organization engages with its various audiences. By understanding an audience's communication environment, organizations seek to develop and present messages for its identified stakeholder groups, before evaluating and acting upon the responses. By

conveying messages that are of significance value, audiences are encouraged to offer attitudinal and behavioural responses. The primary aim of promotional mix is to stress or place emphasis on the unique importance of a firm's products and services as compared to competitors' offers needed to facilitate the rapid sale of such products and services in the market. An enterprise that succeed in emphasizing the unique qualities of its offers will generate high sales turnover and gain an edge over its competitors in the market (Nour, Almahirah, Sultan, & Sultan, 2014).

Advertising is any paid form of non-personal presentation and promotion of ideas, goods or services by an identified sponsor. Mediums of advertising include television, radio, newspapers, magazines, direct mail, billboards, and transit cards (advertisement on buses and taxis and at bus stops). Advertising has the advantage of being able to reach the masses e.g. through television networks but it can also be micro-targeted to small groups of potential consumers through print advertisements in magazine (Kotler & Armstrong, 2001). Advertising is a key element of the promotional activity which has become the undisputed spokesman of modern marketing which is characterized by centralized and mass production, differentiated and branded products, and widely dispersed and sophisticated consumers (Onyenili-Onuorah, 2005). As stated by Keller (2008), advertising serve as a powerful means of communicating strong, favourable, and unique features of a brand to customers which in turn creates

long lasting positive impression about the advertised brand as well drive them to exhibit positive attitudes towards the brand by purchasing it continually.

Sales promotion is a marketing communication tool designed to stimulate immediate purchase of goods and services mainly by the use of incentives. Examples of such incentives include free sample, twin-pack bargain, temporary price reduction, special discount bonus, etc. (Adebisi & Babatunde, 2011). Blythe (2006) as cited in Idris, Asokere, Ajemunigbohun, Oreshile, and Olutade (2012) describes sales promotion as any activity intended to generate a temporary boost in sales. This includes several communications activities pursued in an attempt to provide added value or incentives to customers, wholesalers, retailers, or other organizational customers to stimulate immediate sales. Such efforts are usually geared towards stimulating product interest, trials or purchase. It is specifically designed to boost quick sales and ultimately create loyalty.

Public relations refer to activities embarked upon by a business firm to create and enhance a favourable image within the industry and society in which it operates. Such activities include press releases, consumer training/education on effective use of products and services, events sponsorships, periodic broadcast on radio stations, television broadcast, and active participation in corporate social responsibility to promote its image within the internal and external publics (Bylon & Bede, 2013). Good public relations between a firm and its stakeholders enables the firm to capture, maintain, and improve a

favourable and positive image in the media and consequently increase its customer patronage. Business enterprises deal with the public, most importantly the internal publics (workers and current customers) who are empowered to be good ambassadors of the organization in the outside world. Customers that derive high value from an organization's products purchased and consumed keep patronizing the firm and as well promote the image of the firm favourably through positive word of mouth in the general public (Bylon & Bede, 2013).

Personal selling involves verbal communication and face-to-face interaction between an organization's sales representatives and prospective buyers in order to disseminate sufficient information, overcome prospects' objections to sale, provide answers to questions asked by prospective customers, and generate a positive response towards the organization's offers. (McCarthy & Perreault, 2004). This promotional activity can be measured through the level of training and skills possessed and displayed by sales representatives, salesforce's style and appearance, the possibility of providing information, capabilities in solving problems, displaying verbal persuasion, and style presentation (Nour et al., 2014).

Direct marketing refers to all activities performed by the seller to attract potential customers speedily on a one-on-one basis through the use of marketing channels such as telemarketing (telephone calls), text messages, posters and handbills, online advertisements, website visits/surveys

and electronic mails. (Stone & Jacobs, 2007). The objectives of direct marketing include: First, to measure consumers' response to promotional offers by the marketers. Second, to build and maintain long lasting relationship with consumers. Finally, to effectively use modern communication technologies in fostering the deal between sellers and consumers. (Al-Bakri, 2006). Direct marketing allows an organization to promote its products directly to its target consumers, reach its desired market segments with personalized messages, optimize its marketing budgets, keep in touch with current and new customers, respond to market demand more effectively, and customize its offers to current and prospective customers in order to increase its customer patronage and customer loyalty (Abdullah, 2016).

Consumer buying decision is a series of choices made by consumer before making a purchase. Pride and Ferrell (2012) as cited in Sagala, Destriani, Putri, and Kumar (2014) stated that to understand consumer buying decision, the marketer should understand the consumption process and the utility of products in consumers' perceptions. They also declared that when purchasing products unconsciously, consumer gets through several steps in the making of purchase decision, purchase, and post-purchase evaluation. The first step decision is problem recognition where the consumers are able to differentiate between their needs and wants. Marketers usually use advertising, sales person, and packaging to stimulate recognition of the needs or wants. The second step is information

search where the consumer seeks the information from their memory about the products, seeking the information from outside sources, such as from friends, relatives, government reports, publication, sales person, website, packaging label, and display, or by repetition. The third is evaluation of alternatives where the consumer will establish criteria which consist of characteristic that are important for them. The fourth step is the purchase decision where the customer decides to buy the product after evaluating among alternatives. The last step is the post-purchase decision where the consumer decides to keep purchasing the product if he is satisfied or stop purchasing the product if he is dissatisfied.

Customer satisfaction refers to customers' evaluation of the experience that was encountered after the consumption of products and services in terms of whether the products and services deliver the benefits expected. Satisfaction of customers' needs is an integral part of any business enterprise because satisfied customers help the firm to generate the revenue needed to carry out its business operations, maximize profit, survive, and gain an edge over its competitors in the market (Hanif, Hafeez & Riaz, 2010). Building and maintaining profitable customer relationship successfully in any business organization depends on the ability of such firm to satisfy the needs of its customers (Lonial & Zaim, 2000).

### **Theoretical Review**

Two theories were reviewed in this study. These theories include AIDA theory and relationship marketing theory.

AIDA is an acronym for awareness, interest, desire and action. This theory states that marketers can attract and retain customers by creating awareness, creating interest, inspiring desire and precipitating the action of prospective buyers towards the purchase of their firm's products and services (Kimmel, 2005). In addition, organizations that creates awareness, interest, desire, and positive customers' attitude towards their products in the market using appropriate channels of communication to reach the mass market will stimulate demand for its products and services as well as gain high level of customer patronage and loyalty from time to time (Mbogo, 2013).

In order to attract more customers always, telecommunication firms must create awareness, stimulate interest, inspire desire, and motivate prospective customers to patronize their offers by making good use of marketing communication mix such as advertising, sales promotion, direct marketing, personal selling, and public relations to inform prospective customers about the services they render. Creating awareness generates interest which in turn will lead the prospective customers to purchase their products and services (Afande & Maina, 2015).

Relationship marketing theory is a marketing theory developed from direct response marketing campaigns which emphasizes customer retention and satisfaction, rather than just customer patronage (Alexander & Schouten, 2002). As a practice, relationship marketing differs from other forms of marketing in that it recognizes the long-term value of customer relationships

and extends communication beyond intrusive advertising and sales promotional messages (Aaker & Joachimsthaler, 2000). With the advent and growth of the internet and mobile devices, relationship marketing has continued to evolve and move forward as technology opens more collaborative and social communication channels (Berglof & Bolton, 2002).

Relationship marketing involves a short-term arrangement where both the buyer and seller have an interest in providing a more satisfying exchange (Adebisi, 2006). Relationship marketing relies upon the communication and acquisition of consumer requirements solely from existing customers in a mutually beneficial exchange usually involving permission for contact by the customer through an "opt-in" system (Adebisi, 2006). With particular relevance to customer satisfaction, the relative price and quality of goods and services produced or sold through a company alongside customer service rendered generally determines the amount of revenue an organization will generate compared with that of its competitors (Berglof & Bolton, 2002).

A key principle of relationship marketing is the retention of customers through various means and practices to ensure repeated purchase from existing customers by satisfying their needs and wants beyond those of competitors through a mutually beneficial relationship (Albers-Millers & Straughan, 2000). Telecommunication firms will attract more customers by building and maintaining long lasting relationship with existing customers who in turn will recommend them to

members of the public. This can be achieved by providing unique and quality telecommunication services than their competitors in the industry. Telecommunication service providers that succeed in increasing their customer base by delivering unique and quality telecom services than their competitors will generate maximum revenue to carry out their operations, gain an edge over their competitors in the industry as well as gain local and global recognition among top leading telecommunication firms both locally and internationally (Aka, Kehinde, & Ogunnaike, 2016).

This study is anchored on relationship marketing theory. This is because telecommunication service providers will retain existing customers and attract more customers not only by communicating the benefits they offer but mainly by building and maintaining long lasting relationship with existing customers who in turn will recommend their friends, family, and other members of the public to patronize their telecommunication service providers.

### **Empirical Review**

Onigbinde and Odunlami (2015) evaluated the influence of brand image and promotional mix on consumer buying decision among beverage consumers in Lagos State, Nigeria. Descriptive survey research design was employed for the study. Descriptive statistics and Pearson Product Moment Correlation Coefficient were used to analyze the data gathered from the respondents. Findings of the study indicated that brand image has a significant influence on consumer buying decision among beverage

consumers in Lagos State, Nigeria. Advertising has a significant relationship with consumer buying decision. Sales promotion has a significant influence on consumer buying decision. Finally, personal selling has a significant relationship with consumer buying decision among beverage consumers in Lagos State, Nigeria.

Afande and Maina (2015) evaluated the influence of promotional mix elements on sales volume of financial institutions in Kenya using Kenya Post Office Savings Bank as a case study. Descriptive research design was used for the study. This study was carried out in Kenya Post Office Savings Bank headquarters in Nairobi, Kenya. Descriptive statistics, Pearson's Chi-square test, and regression analysis were used to analyze the data gathered from the respondents. The study discovered that sales promotion, personal selling, advertising, public relations, and direct marketing have significant effect on sales volume of financial institutions in Kenya. However, sales promotion has the most significant effect on sales volume.

Enitilo, Ajayi, and Famuagun (2017) evaluated the effect of promotional activities on customer patronage of insurance firms in Ado-Ekiti Metropolis, Ekiti State, Nigeria. The study employed survey research design. The respondents comprised of customers of ten selected insurance firms that have business operating in Ado-Ekiti, Ekiti State. Stratified random sampling technique was used for the study. Descriptive statistics was used to analyze the respondents' demography

while inferential statistics (multiple regression analysis) was used to test the hypothesis formulated. Results of the study indicated that media advertising, sales promotion, personal selling, and direct marketing have significant effect on customer patronage of selected insurance firms in Ado-Ekiti Metropolis, Ekiti State, Nigeria.

Shirisha and Sucharitha (2017) examined the impact of promotional mix on consumers' purchasing decision. Population of the study comprised of managers, staff, and customers of fast-moving consumer goods (FMCG) companies in Jordan. Primary data was collected with the aid of a questionnaire. Descriptive statistics was used to analyze the respondents' demography and responses on each item of the research instrument while multiple regression analysis was used to test the hypotheses formulated. Findings of the study revealed that advertising, personal selling, sales promotion, publicity, and public relations have no combined significant effect on consumers' purchasing decision. However, advertising has a significant effect on consumers' purchasing decision. Personal selling has a significant effect on consumers' purchasing decision. Sales promotion has a significant effect on consumers' purchasing decision. Publicity has no significant effect on consumers' purchasing decision. Public relations have a significant effect on consumers' purchasing decision.

Khanfar (2016) examined the effect of promotional mix elements used by Ummiah Telecommunication Company on consumers' buying decision in Zarqa City, Jordan. Population of the study

comprised of consumers of Umniah Telecommunication Company in Zarqa City, Jordan. Convenience sampling technique was used for the study. Primary data was used to collect data from the respondents with the aid of a questionnaire. Descriptive statistics was used to analyze the respondents' demography and responses on each item of the research instrument while simple regression analysis and multiple regression analysis were used to test the hypotheses formulated. Results from simple regression analysis showed that advertising, personal selling, sales promotion, and public relations have individual significant effect on consumers' buying decision. However, sales promotion has the most significant effect on consumers' buying decision. Results from multiple regression analysis revealed that advertising, personal selling, sales promotion, and public relations have combined significant effect on consumers' buying decision.

Mahmud, Mohammad, Sultan, and Sultan (2014) examined the impact of promotional activities on consumers' purchasing decision in Jordanian shareholding ceramic and glass production companies. Sample of the study comprised of managers and staff of the marketing department of two Jordanian shareholding ceramic and glass production companies. Questionnaire was used to collect data from the respondents. Descriptive statistics was used to analyze the respondents' demography and responses on each item of the research instrument while multiple regression analysis was used to test the hypotheses formulated.

The study found that advertising, personal selling, sales promotion, publicity, and public relations carried out by Jordanian shareholding ceramic and glass production companies had no significant effect on consumers' buying decision. However, advertising, personal selling, and sales promotion have individual significant effect on consumers' purchasing decision while publicity and public relations have no individual significant effect on consumers' purchasing decision.

Oluwafemi and Adebisi (2018) examined the influence of integrated marketing communication dimensions on customer loyalty in the Nigerian telecommunication industry. Population of the study comprised of subscribers of the four telecommunication service providers (MTN, Globacom, Airtel, and 9Mobile) residing in Lagos State, Nigeria. Cross sectional survey research design was used for the study. Multi-stage sampling technique (cluster, quota, and simple random sampling techniques) was used to select the samples for the study. Questionnaire was used to collect data from the respondents. Descriptive statistics and inferential statistics (correlation and multiple regression analysis) were used to analyze the data collected from the respondents. Results from correlation analysis indicated that there is a significant relationship between integrated marketing communications (advertising, sales promotion, publicity, and direct marketing) and customer loyalty among telecom subscribers in Lagos State, Nigeria. Results from multiple regression analysis affirmed that integrated marketing

communications (advertising, sales promotion, publicity, and direct marketing) have combined significant effect on customer loyalty.

Oyedapo, Akinlabi, and Sufian (2012) examined the impact of sales promotion on organization effectiveness in Nigerian manufacturing industry. Survey research design was used for the study. Population of the study comprised of management and staff of Nestle Nigeria Plc. both at the head office and manufacturing plants. Descriptive statistics was used to analyze the respondents' demography and responses on each item of the research instrument while Chi-square independence test was used to test the hypotheses formulated. Findings of the study showed that beverage drink industry use sales promotion strategies to achieve their set goals. Also, adoption of sales promotion strategies significantly influence the effectiveness of beverage drink industry.

Abdullah (2016) examined the impact of promotional mix elements on consumers' purchasing decision. Population of the study comprised of consumers in Kurdish, Iran. Simple random sampling technique was used for the study. Questionnaire was used to collect data from the respondents. Descriptive statistics, Pearson product moment, correlation coefficient, and regression analysis were used to analyze the data gathered from the respondents. Results from descriptive statistics showed that promotional mix elements (advertising, sales promotion, personal selling, and direct marketing) stimulate consumers' purchasing decision. Results from Pearson analysis revealed that

advertising, sales promotion, personal selling, and direct marketing have individual significant relationship with consumers' purchasing decision. Results from regression analysis affirmed that advertising, sales promotion, personal selling, and direct marketing have individual significant effect on consumers' purchasing decision.

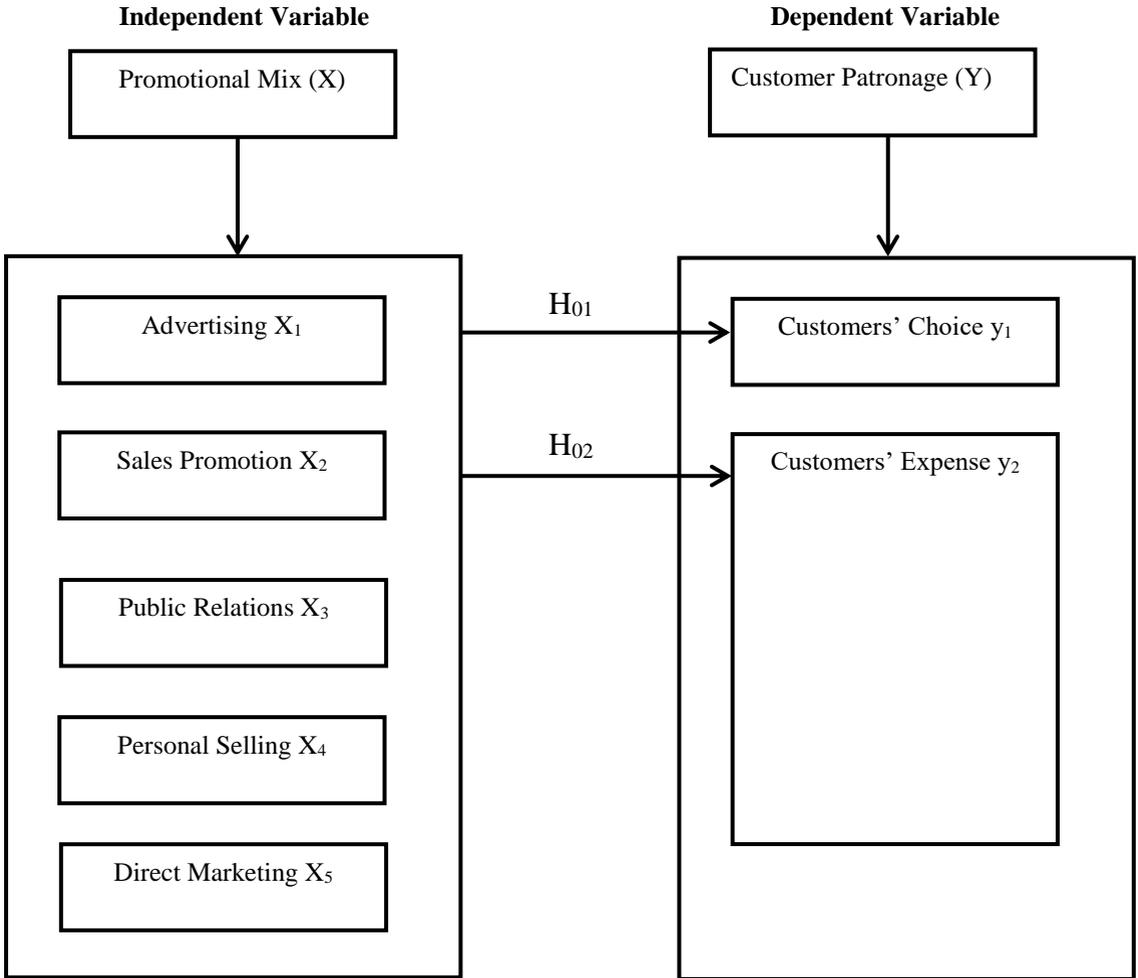
Oghojafor, Ladipo, Ighomereho, and Odunewu (2014) examined the marketing activities that influence customer satisfaction and the factors that determine customer loyalty in the Nigerian telecommunication industry. Telecom subscribers in Lagos State, Nigeria formed the population of the study. Cross sectional survey research design was used for the study. Purposive sampling technique was used for the study. Questionnaire was used to collect data from the respondents. Descriptive statistics was used to analyze the respondents' demography and responses on each item of the research instrument while regression analysis was used to test the hypotheses formulated. The study found that product (core service), promotion, price, distribution, and customer service have individual significant effect on customer satisfaction. Also, customer satisfaction, trust, and social network have individual significant effect on customer loyalty while commitment has no significant effect on customer loyalty.

### **Research Model**

A research conceptual model was developed to show the effect of the independent variables (advertising, sales promotion, public relations, personal selling, and direct marketing) on each of the dependent variable (customers'

choice and customers' expense) among telecom subscribers in Lagos and Ogun

States, Nigeria.



Source: Researchers' Conceptual Model (2019).

### Methodology

Survey research design was adopted for this study. This was done for three reasons. First, it is capable of obtaining information from large samples of the population. Second, it is well suited in gathering demographic data that describe the composition of the sample

(McIntyre, 1999). Third, it is inclusive in the types and number of variables that can be studied; while it requires minimal investment to develop and administer, and is relatively easy for making generalizations (Bell, 1996 cited in Glasow, 2005). The population of this study comprises of subscribers of

telecom service providers (MTN, Globacom, Airtel, and 9Mobile) in Lagos and Ogun States, Nigeria. Convenience sampling technique was chosen as the sampling technique for this study. Convenience sampling techniques allows the researcher to select the samples that are readily available and willing to participate in his research study (Latham, 2007). Sample size of the study comprised of Four hundred and seventy (470) telecom subscribers in Lagos and Ogun States, Nigeria.

The research instrument used for this study was a structured questionnaire. The questionnaire enables the respondents to understand the intention of the study. It also enables the researcher to obtain information from the respondents easily (Asika, 2004). The study adapted the questionnaire of Kehinde (2009) on marketing communication mix and Nwanze (2019) on customers' choice and customers' expense. Internal consistency method of reliability was used to test the reliability of the research instrument. Cronbach alpha was used to test the internal consistency of the research instrument. Cronbach alpha co-efficient determines the internal consistency or average correlation of items in a survey research instrument in order to gauge its reliability (Santos, 1999). A value of 0.70 and above shows that the research instrument is reliable (Santos, 1999). The questionnaire comprised of two

major sections: Section A (demographic profile of the respondent) and Section B (Research construct items).

The questionnaire comprised of major construct items. However, modified Likert's interval rating scale with options ranging from strongly agree, agree, partially agree, partially disagree, disagree, and strongly disagree were used as the response patterns on the construct items. The pilot study was carried out by administering copies of the questionnaire to Ten (10) percent of the respondents who filled them and returned back to the researchers. Thereafter, the reliability of the research instrument was tested using Cronbach Alpha co-efficient. Four hundred and seventy (470) copies of the questionnaire were administered to customers of telecom service providers in Lagos and Ogun States, Nigeria. Descriptive statistics using simple percentages and frequency distribution tables was used to analyze the respondents' bio-data (gender, age, marital status, and educational qualifications) and responses on each item of the research instrument while multiple regression analysis was used to test the hypotheses formulated. These methods of data analysis were used with the aid of the Statistical Package for the Social Sciences (SPSS) version 23.

The table below shows the Cronbach Alpha value of each item of the research instrument tested:

Table 1: Cronbach Alpha Value of the Research Instrument

Variable	Number of Items	Telecom Subscribers in Lagos State	Telecom Subscribers in Ogun State
Customers' Choice	4	0.86	0.77
Customers' Expense	4	0.90	0.84
Advertising	4	0.95	0.83
Sales Promotion	4	0.74	0.81
Public Relations	5	0.70	0.78
Personal Selling	5	0.72	0.76
Direct Marketing	5	0.94	0.89
<b>Total</b>	31		

**Source:** Researchers' Computation (2019).

The table above shows the Cronbach Alpha value for each item of the research instrument tested which ranged between 0.70 and 0.95. This shows that the research instrument tested is reliable.

### Data Analysis, Results and Discussion

Four hundred and seventy (470) copies of questionnaire were administered to telecom subscribers in Lagos and Ogun States, Nigeria, out of which only Four hundred and five (405) copies were filled and returned.

Table 2: Analysis of Questionnaire Distribution and Retrieval Rate

	FREQUENCY	PERCENTAGE (%)
Retrieved	405	86
Not Retrieved	65	14
<b>TOTAL</b>	<b>470</b>	<b>100</b>

**Source:** Researchers' Field Survey (2019)

Table 3 above shows that 405 (86%) of the respondents filled and returned the questionnaire, while

65 (14%) of the respondents did not return the questionnaire. Thus, the percentage of questionnaires

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returned is high enough for the generalization of the outcome of this research work.

**Table 3: Analysis of the Respondents' Demography**

VARIABLE	FREQUENCY	PERCENTAGE (%)
<b>GENDER</b>		
Male	183	45.3
Female	222	54.7
<b>Total</b>	405	100
<b>MARITAL STATUS</b>		
Single	207	51.1
Married	198	48.9
<b>Total</b>	405	100
<b>AGE</b>		
16-20	36	8.9
21-30	147	36.3
31-40	168	41.5
41-50	42	10.4
51 and above	12	3
<b>Total</b>	405	100
<b>EDUCATIONAL QUALIFICATION</b>		
WASSCE	81	20
Bachelor's Degree	246	60.7
Master's Degree	69	17
Doctorate Degree	9	2.2
<b>Total</b>	405	100
<b>MOST PREFERRED/USED NETWORK</b>		
Glo	51	12.6
Airtel	96	23.7
MTN	228	56.3
9Mobile	30	7.4
<b>Total</b>	405	100
<b>NETWORK USAGE PERIOD</b>		
Less than 6 months	72	17.8
6 months to 1 year	27	6.7
1-3years	36	8.9
3-5years	87	21.5
6 years and Above	183	45.2
<b>Total</b>	405	100
<b>LEVEL OF</b>		

<b>ACTIVENESS ON MOST PREFERRED/USED NETWORK</b>		
Less Active	6	1.5
Active	54	13.3
Very Active	345	85.2
<b>Total</b>	405	100
<b>STATE OF RESIDENCE</b>		
Lagos	237	58.5
Ogun	168	41.5
<b>Total</b>	405	100

*Source:* Researchers' Field Survey (2019).

From the analysis of respondents' demography, 183 (45.3%) of the respondents are male while 222 (54.7%) are female. The marital status showed that 207 (51.1%) of the respondents are single while 198 (48.9%) are married. The age distribution of respondents showed that 36 (8.9%) of the respondents are within the age of 16-20 years, 147 (36.3%) are within the age of 21-30 years, 168 (41.5%) are within the ages of 31-40 years, 42 (10.4%) are within the age of 41-50 years, and 12 (3%) are within the age of 51 years and above. The educational qualification showed that 81 (20%) of the respondents are Senior School Certificate (SSCE) holders, 246 (60.7%) are Bachelor's degree holders, 69 (17%) are Master's degree holders, and 9 (2.2%) are Doctorate degree holders. In terms of most preferred/used network of respondents, 51 (12.6%) of the respondents are Glo subscribers, 96 (23.7%) are Airtel subscribers, 228 (56.3%) are MTN subscribers, and 30 (7.4%) are 9Mobile subscribers. In terms of network usage period, 72 (17.8%) of the respondents have used

their network for less than 6 months, 27 (6.7%) have used their telecom network for 6 months to 1 year, 36 (8.9%) have used their telecom network for 1-3 years, 87 (21.5%) have used their network for 3-5 years, and 183 (45.2%) have used their network for 6 years and above. The table above revealed that 6 (1.5%) are less active on their telecom network, 54 (13.3%) are active on their telecom network, and 345 (85.2%) are very active on their telecom network. The state of residence showed that 237 (58.5%) of the respondents reside in Lagos State while 168 (41.5%) reside in Ogun State.

Findings of the study showed that advertising ( $\beta = 0.093$ ,  $t = 0.694$ ,  $p > 0.05$ ) had no significant effect on customers' choice, sales promotion ( $\beta = 0.168$ ,  $t = 1.900$ ,  $p > 0.05$ ) had no significant effect on customers' choice, public relations ( $\beta = 0.180$ ,  $t = 1.082$ ,  $p > 0.05$ ) had no significant effect on customers' choice, personal selling ( $\beta = 0.092$ ,  $t = 0.878$ ,  $p > 0.05$ ) had no significant effect on customers' choice while direct marketing ( $\beta = 0.030$ ,  $t = 0.234$ ,  $p > 0.05$ ) had no significant effect

on customers' choice of mobile telecommunication network in Lagos State, Nigeria. The adjusted R square of 0.184 showed that promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) explained only 18.4% of the variation in customers' choice of mobile telecommunication network in Lagos State. This implies that 18.4% of the changes in customers' choice could be attributed to promotional mix of mobile telecom service providers. The results indicated that the overall model was statistically significant as represented by  $F = 4.650$  with  $p\text{-value} (0.001) < 0.05$ .

The regression model indicated that holding promotional mix to a constant zero, customers' choice would be 6.617 which implies that without promotional mix, customers' choice of mobile telecommunication network in Lagos State was 6.617. Based on these findings, the null hypothesis ( $H_{01}$ ) which states that promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) have no significant effect on customers' choice of mobile telecommunication network in Lagos State is hereby rejected.

Findings of the study showed that advertising ( $\beta = 0.351$ ,  $t = 1.830$ ,  $p > 0.05$ ) had no significant effect on customers' choice, sales promotion ( $\beta = 0.025$ ,  $t = 0.201$ ,  $p > 0.05$ ) had no significant effect on customers' choice, public relations ( $\beta = 0.238$ ,  $t = 1.200$ ,  $p > 0.05$ ) had no significant effect on customers' choice, personal selling ( $\beta = 0.230$ ,  $t = 1.781$ ,  $p > 0.05$ ) had no significant effect on customers' choice while direct marketing ( $\beta = -0.152$ ,  $t = -$

0.903,  $p > 0.05$ ) had no significant effect on customers' choice of mobile telecommunication network in Ogun State, Nigeria. The adjusted R square of 0.208 showed that promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) explained only 20.8% of the variation in customers' choice of mobile telecommunication network in Ogun State. This implies that 20.8% of the changes in customers' choice could be attributed to promotional mix of mobile telecom service providers. The results indicated that the overall model was statistically significant as represented by  $F = 3.728$  with  $p\text{-value} (0.006) < 0.05$ .

The regression model indicated that holding promotional mix to a constant zero, customers' choice would be 3.045 which implies that without promotional mix, customers' choice of mobile telecommunication network in Ogun State was 3.045. Based on these findings, the null hypothesis ( $H_{01}$ ) which states that promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) have no significant effect on customers' choice of mobile telecommunication network in Ogun State is hereby rejected.

Findings of the study showed that advertising ( $\beta = 0.288$ ,  $t = 1.442$ ,  $p > 0.05$ ) had no significant effect on customers' expense, sales promotion ( $\beta = -0.035$ ,  $t = -0.337$ ,  $p > 0.05$ ) had no significant effect on customers' expense, public relations ( $\beta = -0.173$ ,  $t = -0.889$ ,  $p > 0.05$ ) had no significant effect on customers' expense, personal selling ( $\beta = 0.439$ ,  $t = 3.582$ ,  $p < 0.05$ ) had a significant effect on customers' expense

while direct marketing ( $\beta = 0.042$ ,  $t = 0.284$ ,  $p > 0.05$ ) had no significant effect on customers' expense among telecom subscribers in Lagos State, Nigeria. The adjusted R square of 0.200 showed that promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) explained only 20% of the variation in customers' expense among telecom subscribers in Lagos State. This implies that 20% of the changes in customers' expense among telecom subscribers in Lagos State could be attributed to promotional mix of mobile telecom service providers. The results indicated that the overall model was statistically significant as represented by  $F = 5.060$  with p-value ( $0.000$ )  $< 0.05$ .

The regression model indicated that holding promotional mix to a constant zero, customers' expense would be 6.610 which implies that without promotional mix, customers' expense among telecom subscribers in Lagos State was 6.610. Based on these findings, the null hypothesis ( $H_{02}$ ) which states that promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) have no significant effect on customers' expense among telecom subscribers in Lagos State is hereby rejected.

Findings of the study showed that advertising ( $\beta = -0.230$ ,  $t = -1.213$ ,  $p > 0.05$ ) had no significant effect on customers' expense, sales promotion ( $\beta = -0.068$ ,  $t = -0.561$ ,  $p > 0.05$ ) had no significant effect on customers' expense, public relations ( $\beta = 0.431$ ,  $t = 2.198$ ,  $p < 0.05$ ) had a significant effect on customers' expense, personal selling

( $\beta = 0.416$ ,  $t = 3.264$ ,  $p < 0.05$ ) had a significant effect on customers' expense while direct marketing ( $\beta = -0.112$ ,  $t = -0.675$ ,  $p > 0.05$ ) had no significant effect on customers' expense among telecom subscribers in Ogun State, Nigeria. The adjusted R square of 0.178 showed that promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) explained only 17.8% of the variation in customers' expense among telecom subscribers in Ogun State. This implies that 17.8% of the changes in customers' expense in Ogun State could be attributed to promotional mix of mobile telecom service providers. The results indicated that the overall model was statistically significant as represented by  $F = 3.259$  with p-value ( $0.013$ )  $< 0.05$ .

The regression model indicated that holding promotional mix to a constant zero, customers' expense would be 4.914 which implies that without promotional mix, customers' expense among telecom subscribers in Ogun State was 4.914. Based on these findings, the null hypothesis ( $H_{02}$ ) which states that promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) have no significant effect on customers' expense among telecom subscribers in Ogun State is hereby rejected.

Results of the study confirmed that promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) had a significant effect on customers' choice of mobile telecommunication network in Lagos and Ogun States, Nigeria. This implies that efforts made by

telecommunication firms in carrying out consistent advertisement, sales promotion, public relations, personal selling, and direct marketing with regard to the services they provide will go a long way to attract more customers and retain their existing customers. Telecommunication service providers that constantly create awareness about the services they offer, provide good incentives to stimulate immediate purchase of their products and services, build and maintain good name and reputation in the public, give room for one-on-one interactions with prospective customers, and give prospective and current customers the opportunity to have access to online information about the services they render will continually drive in customers faster than their competitors. This in turn will help them generate the revenue needed to increase their profit and expand their business. Findings of the study is in congruence with the study of Odunlami and Onigbinde which found that promotional mix (advertising, sales promotion, and personal selling) has significant influence on consumer buying decision. Also, findings of the study support the study of Afande and Maina (2015) which affirmed that advertising, sales promotion, public relations, personal selling, and direct marketing have significant effect on sales volume of financial institutions. Findings of the study contradict the study of Shirisha and Sucharitha (2017) which showed that advertising, personal selling, sales promotion, publicity, and public relations have no significant effect on consumers' purchasing decision.

Results of the study indicated that promotional mix (advertising, sales promotion, public relations, personal selling, and direct marketing) had a significant effect on customers' expense among telecom subscribers in Lagos and Ogun States, Nigeria. Findings of the study agree with the study of Enitilo, Ajayi, and Famuagun (2017) which confirmed that media advertising, sales promotion, personal selling, and direct marketing have significant effect on customer patronage. Also, results of the study support the study of Khanfar (2016) which discovered that advertising, personal selling, sales promotion, and public relations have significant effect on consumers' buying decision. Results of the study contradict the findings of Mahmud, Mohammad, Sultan, and Sultan (2014) which found that advertising, personal selling, sales promotion, publicity, and public relations have no significant effect on consumers' buying decision.

### **Conclusion and Recommendations**

Based on the findings of this study, this study concluded that customer patronage will increase in mobile telecommunication firms when they provide adequate information about the services they offer through sufficient advertisements, publicity, personal selling, and direct marketing as well as provide the needed incentives that will encourage rapid purchase of their offers. Also, telecommunication service providers that take time to build and maintain a good public image will influence customers to purchase their product offers and gain an edge over their competitors speedily and steadily. Mobile telecom service providers that

commit their time, energy, and resources towards communicating the merits of the products and services they offer, providing a forum that enables customers to make enquiries and clarifications always, creating long lasting impression about themselves in the minds of current and future customers, and persuading customers to purchase their offers immediately will generate the market share required for their expansion and growth both locally and internationally.

The study recommended that telecommunication service providers should put in more efforts in their advertisement campaigns, carry out frequent sales promotion programs, build and maintain long lasting relationship with the members of the public, engage more in one-on-one interaction with prospective customers,

and give room for customers to make enquiries, lodge their complaints, and offer suggestions on how they can be served better. This in turn will help in attracting more customers as well as increasing their market share because current customers will remain loyal to them and more customers will begin to patronize them. Telecommunication firms should provide adequate and accurate information about the products and services they offer on television, newspapers, radio, and different social media platforms (twitter, facebook, whatsapp, and instagram) continually. Finally, telecommunication service providers should invest more in sponsoring popular events (trade fair exhibitions, sporting events, arts, and entertainment) to create awareness about the services they provide and capture more market.

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**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.484 <sup>a</sup>	.234	.184	3.33594

a. Predictors: (Constant), Direct Marketing, Sales Promotion, Personal Selling, Advertising, Public Relations

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	258.721	5	51.744	4.650	.001 <sup>b</sup>
	Residual	845.767	76	11.129		
	Total	1104.488	81			

a. Dependent Variable: Customers' Choice

b. Predictors: (Constant), Direct Marketing, Sales Promotion, Personal Selling, Advertising, Public Relations

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.617	2.559		2.586	.012
	Advertising	.093	.134	.099	.694	.490
	Sales Promotion	.168	.088	.213	1.900	.061
	Public Relations	.180	.166	.176	1.082	.283
	Personal Selling	.092	.104	.114	.878	.383
	Direct Marketing	.030	.126	.033	.234	.815

a. Dependent Variable: Customers' Choice

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.500 <sup>a</sup>	.250	.200	3.92042

a. Predictors: (Constant), Direct Marketing, Sales Promotion, Personal Selling, Advertising, Public Relations

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	388.842	5	77.768	5.060	.000 <sup>b</sup>
Residual	1168.097	76	15.370		
Total	1556.939	81			

a. Dependent Variable: Customers' Expenses

b. Predictors: (Constant), Direct Marketing, Sales Promotion, Personal Selling, Advertising, Public Relations

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	6.610	3.007		2.198	.031
Advertising	.228	.158	.203	1.442	.153
Sales Promotion	-.035	.104	-.037	-.337	.737
Public Relations	-.173	.195	-.143	-.889	.377
Personal Selling	.439	.123	.458	3.582	.001
Direct Marketing	.042	.148	.039	.284	.777

a. Dependent Variable: Customers' Expenses

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.533 <sup>a</sup>	.284	.208	3.75612

a. Predictors: (Constant), Direct Marketing, Sales Promotion, Personal Selling, Public Relations, Advertising

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	262.979	5	52.596	3.728	.006 <sup>b</sup>
Residual	663.097	47	14.108		
Total	926.075	52			

a. Dependent Variable: Customers' Choice

b. Predictors: (Constant), Direct Marketing, Sales Promotion, Personal Selling, Public Relations, Advertising

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.045	3.806		.800	.428
	Advertising	.351	.192	.316	1.830	.074
	Sales Promotion	.025	.123	.027	.201	.842
	Public Relations	.238	.199	.205	1.200	.236
	Personal Selling	.230	.129	.262	1.781	.081
	Direct Marketing	-.152	.169	-.156	-.903	.371

a. Dependent Variable: Customers' Choice

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.507 <sup>a</sup>	.257	.178	3.70848

a. Predictors: (Constant), Direct Marketing, Sales Promotion, Personal Selling, Public Relations, Advertising

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	224.070	5	44.814	3.259	.013 <sup>b</sup>
	Residual	646.383	47	13.753		
	Total	870.453	52			

a. Dependent Variable: Customers' Expense

b. Predictors: (Constant), Direct Marketing, Sales Promotion, Personal Selling, Public Relations, Advertising



# Share Prices, Performance Information of Financial Statements and Shareholders' Investment Decisions

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**Abstract:** Financial statements, being the representations of the management primarily to the shareholders as their employers are expected to attract a reaction in line with the proprietary theoretical framework. This study was borne out of the quest to assess the reliance of the common stockholders on the financial statement information with respect to profitability and stock prices in their investment decisions. Ten money deposit banks in Nigeria were studied using the ex post facto research design and multiple regression analytical technique. The results showed that shareholders' investment decisions in banks rely considerably on stock prices information and financial statement information on profitability with respect to returns on assets at the lag length of one year. It was therefore concluded that financial statements, in practical terms, remain the guide for investors in their quest to see what transpires within organizations; and information on stock prices are also relevant to investment decisions since they complement opinions on the financial statements. Hence, the study recommended that organizations' management, policymakers, governments and accounting bodies at large should treat the issues bothering on financial reporting with all sense of importance since they are capable of influencing economic decisions and their influence on the capital market is certain.

**Keywords:** Financial statements, share prices, shareholders, investment decisions

## Introduction

The preparation and publication of financial statements stem from the core stewardship duty of the directors of a company to account for their performance over a period to the entire stakeholders and especially the shareholders who they represent; and to

URL: <http://journals.covenantuniversity.edu.ng/index.php/cjbss>

also present a statement on the status of the firm's affairs at a given date. So the essence of preparing the financial report by the directors is for them to lay claims on the extent of their performance and present the financial position of the firm to its shareholders. It then follows that, if directors communicate facts about the company through the financial statement, then investors must necessarily base their judgments and decisions about a company on the strength of the information contained on its financial statement especially when these statements have been audited and given a 'clean bill' report.

Financial statements are sets of individual economic reports which provides information on the performance and status of any organization. It is a method of communicating to the business owners, information on the resource obligations and performances of the stewards of the business. According to ICAN (2013) the objectives of financial statements are to provide information about the performance, financial position and consequently changes in the financial position of any enterprise for the essence of assisting a wide spectrum of financial information users in making economic decisions. The importance of financial statement lies on the information contained in it and the consequent decisions and actions of various users based on them. Hence many countries of the world place stringent rules and detailed procedures for firms to adhere to, before publishing their financial statements especially registered companies. These rules usually bother on the contents,

procedures, format, layout and auditing of financial reports. In Nigeria, under the regulation of the Financial Reporting Council of Nigeria FRCN, companies are to prepare Income Statement, Statement of financial position or balance sheet, Statement of changes in equity, cash flow statement amongst others. All these are targeted at enhancing financial reporting and encouraging its use for investment decisions.

Investment decision can be a very crucial event requiring huge amount of financial commitment and payback time frame; and so demands proper and accurate information for detailed analysis of competing options and consequent selection. It is a known fact that published financial information as contained in a firm's financial report is capable of having effects on the future outlook of the firm as it has the tendency of rolling out different activities from different stakeholders of the firm, it is essential for the financial report to represent the true picture of claims made by the organization. On the wider scope, the credibility of published financial statements is even paramount to the success of any capital market (Ihendinihu and Robert, 2014). The importance and authenticity of information in the financial statements of any organization goes a long way in determining the how its stakeholders react to it. Osuala, Ugwumba and Osuji (2012) submit that when the financial statements of any organization presents information that are far better or worse than what is expected, then there is a tendency for its stock prices to go up or down in the market. Popoola,

Akinsanya, Babarinde & Farinde (2014) also posits that investors contemplate about their investment decisions in any firm based on information presented in the financial statements.

However, there are also indications that investors in Nigeria may not have the culture of consulting with financial reports of organizations prior to their investment decisions as anticipated. Sequel to the recent corporate failures and financial scandals which has befallen the corporate world both at international and national scenes, investors may have good reasons for not utilizing the contents of financial statement as a basis for their investment decisions. Osuala, Ugwumba and Osuji (2012) state that shareholders of corporate firms do not appear to give proper attention to the contents of financial statements while making investment decisions but will rather take cognizance of other extraneous variable such as market price of shares, frequency and consistency of dividend payments.

In spite of the above possibility, it is evident that companies incur expenses of considerable magnitude annually in preparing, auditing and publishing both soft and hard copies of their financial statements with the inclusion of the cost of circulating them to all the shareholders. So the justification of costs incurred in publishing financial reports lies heavily on their usefulness for investment and other decision-making purposes.

Hence this paper purposes to study the effects of financial statement contents on profitability and market prices of

shares on shareholders' investment decision-making in Nigeria.

### **Objective**

This study intends to appraise the effects of financial statement information contents and market prices of shares on investment decisions of shareholders of some selected banks in Nigeria. However, the study will specifically pursue the following objective:

- i. Assess the effect of returns on assets as financial statement information on the investment decisions of shareholders.
- ii. Assess the effect of earnings per share as financial statement information on the investment decisions of shareholders
- iii. Analyse the influence of market price of shares on the investment decisions of shareholders.

### **Hypotheses**

The study, in pursuance of the above stated specific objectives therefore hypothesizes as follows:

- Ho1: Returns on assets has no significant effect on the investment decisions of shareholders
- Ho2: Earnings per share have no significant influence on shareholders' investment decisions
- Ho3: Market price per share has no significant effect on shareholders' investment decisions of some selected money deposit banks in Nigeria.

### **Literature Review**

#### **Conceptual Review**

Financial statement can be described as the report of the firm in which it puts up claims of its financial performance, wealth created, distribution, financial

position and changes in financial position and explanatory notes to guide understanding of the statement. Ojiuko (2001) defined financial statement as a collection of data organized to reflect a logical and consistent accounting procedures aimed at conveying understanding of some financial aspects of a business firm. Ekwe (2013), described published financial statement as the audited annual report and accounts of an organization for the period represented; the financial statement comprising of an income statement, balance sheet and the cash flow statement. In Nigeria, public companies are required by the law to publish their financial statements annually and also to send them out to shareholders before the day of the annual general meeting so as to protect the right of those investors. The authenticity of the claims of any organization's directors in a financial statement is very critical to the effectiveness of the investment decisions of various stakeholders who rely on them for their investment decisions, hence the Company and Allied Matters Act is a legislative effort by the Nigerian government to regulate the credibility of financial statements in the economy. To further ensure the credibility of published financial statement, Ekwe (2013) maintained that it must be endorsed by a reputable audit firm. The above assertion implies that investors will accept or rely on published financial statement based on how much confidence they have on the auditor who had expressed an unqualified opinion on such financial statement. Some of the qualities of

financial statement content which will also influence the credibility of a financial statement and by extension its acceptability includes relevance, reliability, timeliness, consistency, understandability, objectivity and comparability.

However, recent developments on corporate failures and its close affinity with accounting scandals may have eroded the confidence which investors had hitherto vested on audited and published financial statement. This is the major issue that led to loss of confidence and wide agreement by some scholars that financial statement may not be useful for investment decisions of potential shareholders after all. Ekwe (2013) also noted some problems associated with published financial statements to include subjectivity in the measurement process of some financial statement items, inability of the financial statement to show some non-monetary factors that affect financial condition, complexity and technicality of reported information in the financial statement, and creative accounting. Creative accounting has to do with the manipulation of financial statement information within the auspices of legal and other regulation but such that it doesn't portray the true and fair view of the company's financial performance and status.

In theory, it is believed that financial statements should serve as a roadmap to anyone who must access the path of the performance or status of any organization. This is because the contents of a financial statement when reduced to ratios and compared against other firms or previous performances of

the same firm indicates how favourable the firm has been doing or otherwise. Hence investors use its contents for proper analysis in their decisions to acquire more investments in the organization or sell off their stake and also, potential investors who are speculating in the market are believed to analyze financial statement while deciding on which company to invest in. Bankers, financial advisers and consultants, government bodies, creditors, lenders and a host of other stakeholders of the company base their decisions on the claims of the financial statement.

### **Financial Statement Information**

The functions of accounting are to measure the activities of the company as well as communicate and interpret those measurements to people; this is achieved through the preparation of financial statement.

.According to Duru (2012), financial statement is a statement which conveys to management and to interested outsiders a concise picture of the profitability and financial position of a business. It is therefore expected that a financial statement of any company should give a stewardship report of the dealings of the management team in collaboration of other employees with the financial resources of the investors who are the owners of the business.

Financial statement information therefore comprises of all information which can be obtained from the financial statement and are utilized for reaching final investment decisions. Shareholders need to receive full benefit of their investment and so need clear and fairly stated information to enable

them make effective and efficient investment decision and such information are expected to be fully contained in the financial statements of the companies of interest to the shareholders (Osuala, Ugwumba and Osuji; 2012). An average investor will be interested in the profitability, growth, leverage and efficiency of the entity where he has invested his resources hence information regarding these factors which are contained in the financial statement become his foci points.

### **Qualities of Financial Statement**

The provisions of International Accounting Standards Board (IASB) on the qualitative characteristics of financial statements include:

- i. Relevance and faithful representation: these are regarded as the fundamental qualitative characteristics which connote neutrality, completeness and freedom from error. Relevant financial information suggests that such information is capable of making a difference to the end decision of the financial statement user. Relevance of financial information is also related to materiality i.e. the weight of financial information that makes it relevant to the decision making process of its user. Financial information is adjudged as material where its omission from the financial statement is capable of influencing economic decision of the users. Also the financial statement should show a consistent and true representation of all the matters it purports to represent.

ii. Comparability, Timeliness, Verifiability and Understandability: these are enhancing qualitative characteristics that make financial reports more useful for economic decision making. Comparability entails the preparation of financial information contents in a report in such a manner that makes the user able to compare similar information of a given firm against other firm within the industry or against the report of the same firm of other accounting years. But the timeliness refers to the provision of these information at a time it will influence and inform their decision when it has not become a stale information. Verifiability suggests that various independent and knowledgeable parties are capable of reaching a consensus on the authenticity of the information content of the financial statement. Understandability on the other hand involves classifying, characterizing and presenting financial information clearly and concisely such that users who are expected to be people with basic financial knowledge can understand the information contained in the financial statement (Entop 2016).

## **Contents of Financial Statement**

### **Profitability and Performance Information**

Information on profitability of a business is of utmost interest as no rational investor will want to commit to a business that is not making profits. William (2012) submits that profitability is the best measure of a

business' performance. The essence of most business ventures is to make returns to their owners; so it is fundamental to the existence of the business that they make profit and information on a business' profitability is also fundamental to the decisions of an investor who is the proprietor. However there are certain accounting information contained in the financial statement or computed with financial information available in the financial statement in order to measure the profitability of any business firm. The net profit of a firm shows the level of profit attained by a company each year after the administrative costs and other costs of operation have been deducted from gross profit. But a better view of profitability will entail relating the net profit to an accounting information item that shows evidence of resource investments in the firm. According to Anaja and Onoja (2015) common profitability measures compare profits with sales, assets, equity and liabilities: net profit margin, return on assets, and return on equity. Thus some of the measures of performance and profitability used in assessment or comparison of firms include; Returns on Equity, Returns on Capital Employed, Returns on Assets, Gross profit margin, etc. information on profitability can be accessed through the statement of comprehensive income or income statement.

### **Liquidity Information**

In as much as businesses are making profits, their continuity in the business is not guaranteed in the absence of strategic liquidity plans and positioning. Liquidity in this context denotes raw

cash and near cash resources that are applied in the operations of the business and in the settlement of financial obligations as they fall due. Chordia, Sarkar and Subrahmayam (2005) stated that “liquidity is the ability of a company to sell large quantity of assets at a reasonable price to meet its short term financial obligations”. It is another area of interest to an average investor given that the future profitability of the investor is threatened in the face of liquidity problems. Some of the measures of liquidity positions of businesses are computed with financial information obtained from the balance sheet such as current ratio and acid test ratio. Another way to evaluate the flow of financial resources in a firm is through the cash flow statement which shows the sources and application of funds by the organization. According to Patrick, Nach, Epstein & Budak (2002), cash flow statements helps the investors and creditors to access the ability of the firm to generate positive future cash flow, ability to meet the debt obligations and to shed light on the cash and non-cash aspect of the investing and financial transactions.

### **Leverage Information**

Information on the leverage credibility of a company boosts the confidence of both creditors and investors on the sufficiency of proprietors’ investment in the firm and as such affirming the ability of the company to cover their liability in the case of winding up. This is usually very important to even potential investors and so it is an area of concern to management of companies. The test of a companies’ leverage is usually computed using the total debt to

equity ratio and long term debt to equity ratio; they are expressed respectively as total debt or long term debt divided by total equity. According to Woo & Baker (2005) percentage of the long term debts for a unit of shareholders equity is revealed by the long term debt to equity ratio; this serves as a measure of a firm’s leverage.

### **Financial Statement and Investment Decision**

Investment decision simply refers to the choice of where, how and magnitude of financial resources to commit to a particular venture by an investor after a careful analysis of alternative options (Virlics; 2013). It is a decision on the commitment of individual or firm’s financial resources on long term assets (Bamidele, Ibarahim & Omole; 2018). This is often called economic decision taken by existing and potential investors and lenders on the basis of the financial statement of any given organization. According to Entop (2016), the IASB elaborated investment decisions of firms to include the following:

- Decision on when to buy, when to keep and when to sell shares of their capital;
- Assessment of the management skills or responsibility of the management;
- Assessment of the entity's ability to remunerate the staff and to offer other benefits to its employees;
- Assessment of the security that the entity is able to provide for the loans it was granted;
- Determining tax-related policies;
- Determining the profit and dividends to be distributed;

- Provision and use of statistical data on the national income;
- Regulation of company business.

Nkuhi (2015) posits that investment decisions of firms are generally known as the capital budgeting decision and may be defined as the firm's decision to invest its current funds most efficiently in the long-term assets in anticipation of an expected flow of benefits over the years. These assets may be fixed assets. However companies and individuals do invest in shares and other securities and at such times, the use of financial statements of their choice organizations to make analysis and arrive at final selection of the best alternative become pertinent. According to Osuala et al (2012) shareholders of a company, both existing and potential, will want to know how effectively the directors are performing their stewardship function. They will use the financial statement as a basis for decisions to dispose of some or all of their shares, or to buy some more. Investment decisions depend on expectations of the benefits of the investment, which in turn depend on expectations of future growth and product demand. Expectations of future growth are based on information that includes earnings per share, dividends per share, leverage, and liquidity. Thus, the financial statements are considered very important to shareholders.

### **Financial Statement Information and Investment Decisions**

Most reviewed empirical works that were carried out in the area of financial statements information and shareholders revealed that researchers found a plausible association to exist between financial information and investment

decisions of shareholders (Nkuhi 2015; Heikal, Khaddafi & Ummah 2014; Zagger & Zagger 2006; Anaja & Onoja 2015; Ekwe 2013). These opinions were theoretically anchored on the traditional role of accounting which bothers on the provision of historical information as it relates the business performance and further usage of the past performance so detected to measure or estimate the future and form opinion about the firm's future performance. It is therefore important and proper that financial statements being crucial to investment decisions are regulated by different national bodies and globally by IASB in order to forestall uninformed decisions.

### **Stock Prices and Shareholders' Investment Decisions**

Osuala, Ugwumba and Osuji (2012) submitted that shareholders in the Nigerian capital market cannot be said to have relied on the information available in the financial statements to make decisions as regards their investments based on the findings they made in their empirical study. The result hence appears to differ from opinions held by most researchers on this topic. The researchers opined that market price of shares is one of the vital factors capable of influencing the shareholders' decisions asides financial statement information.

Information on stock prices is not contained in financial statements produced by companies in Nigeria. Rather these information are gotten from the business news and reports circulated by the Nigerian Stock Exchange and Securities and Exchange Commission. Stock prices can be described as the market price of

common stocks held by ordinary shareholders. Market prices of ordinary shares are usually higher than their book values often representing the extent to which shares have appreciated in value in the market as against as the book worth of the shares. Stock prices change in stock markets on a daily basis. Moreover, during certain times of the year, it is easy to notice that stock prices appreciate every morning, and this may take place many times in one day for some stocks. This means that stock prices are determined by supply and demand forces influenced by corporate firm characteristics. There is no full proof system that indicates the exact movement of stock prices. However, the factors behind increases or decreases in the demand and/or supply of a particular stock could include company fundamentals, external factors, and market behavior.

It is possible that, in addition to financial statement information, shareholders may consider the growth or behavioral pattern of stock prices of common stock prior to their investment decisions as opined by Osuala, Ugwumba and Osuji (2012).

### **Theoretical Review**

Certain schools of thought abound on the nature of information which should be central to the preparation of financial statements including which group of people that should be borne in mind when preparing the financial reports of organizations. These theories are regarded as theories of equity and are reviewed hereunder;

**Entity Theory:** this theory of financial statement upholds the entity concept of accounting. The proponents of entity

theory upholds that since an organization is a distinct body having its own existence other than that of its owners; this fact and concept should also be borne in mind when preparing the financial statement. In other words, the business unit rather than the proprietor is the center of accounting interest (Manukriti 2016). And accounting information produced by the organization should be targeted to meet this purpose.

Hence the accounting equation will be:  

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' Equity}$$

**Enterprise theory:** upholds the social theory of accounting. Enterprise theory conceives firms as organisms that exist for the benefit of various groups of people which will include shareholders, creditors, employees, government and the general public. It holds that financial statement of firms should be prepared in such a way as to show the value added by the firm to these groups of people having in consideration that they are all stakeholders to the business of the organization. As such the retained earnings of the firm and any other reserve made to promote the going-concern is not solely for the benefit of the shareholders but other stakeholders who are beneficiaries of the value added of the organization.

Evidently from the stance of enterprise theory, the best statement in the financial report that will serve the interest of all the stakeholders is the value added statement. But it is important to note that International Financial Reporting Standards currently do not promote this social theory in the financial report having not included

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value added statement as mandatory part of financial reports.

**Proprietary Theory:** the proprietary theory of equity posits that the financial reports should be tailored to meet the needs of contributors of the business capital alone. The concept underpinning this theory is that since the business firm is an agent to the shareholders or an arrangement through which they operate; its financial reports should be addressed to these equity holders in the manner that suits their needs.

This theory reflects the traditional role of accounting information dating back to the period of stewardship accounting where the stewards are expected to release information to the use of the masters, i.e. the proprietors and no other. The accounting equation under the proprietary theory will be presented as: Proprietors' Equity = Assets – Liabilities.

### **Under-pinning Theory**

A narrower variant of proprietary theory is the residual equity theory which excludes the preferred stockholders from the equity equation. However, the implication of this theory is that elements of the financial statement which do not address the information requirements of the shareholders may not necessarily be included. It emphasizes the importance of the income statement from which the proprietors can assess the financial performance of the firm and consequently their dividends; the statement of financial position to view the status of assets as against liabilities and networth; cash flow statement to assess their liquidity; and other accompanying parts that explains the

statements further. Sharma (2012) holds that Income statement, balance sheet and statement of cash flow are the basic and the most important financial statements which interprets the quantitative data of a company's performance; and the standard of International Accounting Standards Board (IASB) which upheld that firms need only prepare statement of financial position, statement of comprehensive income, other comprehensive income and cash flow statement and other accompanying footnotes of which all geared to meet the needs of the primary users of financial information (where primary users are present and potential investors, lenders and other creditors) alone, suggests that the board adopts this traditional concept of financial statement.

Proprietary theory with emphasis on the residual equity theory is adopted for this research work for its focus on the information needs of shareholders since it is purposed to assess the rate at which investors in the equity shares of firms rely on the financial report and its content in the formation of their investment decisions.

### **Empirical Review**

The use of financial reports and financial information by investors, existing and potential in the formulation of their investment decisions have attracted the attention of several scholars from different countries of the world.

Zaigham, Wang and Ali (2019) studied the causal relation between stock market performance and firm investment decisions in China. Stock prices were adopted as the independent variable

whereas the sampled firms' investment expenditures were adopted as the dependent variable. Using panel regression analysis, the researchers found that stock prices have negative influence on the investment decisions of the managers of the selected firms. They also concluded that firms who face financial challenges tend to have higher sensitive investment decisions in response to changes in stock prices than others who do not. A condition that was attributed to information asymmetry.

Berheci (2008) studied the interdependence of the components of financial statements and its influence on financial decisions. The study analyzed financial information needs of various parties to the financial report and considered the financial report an essential commodity in the investors' decision making process. It was concluded that the lack of transparency of the published information, which is subject to evenness and conservatism, is the cause for the information asymmetry between the providers and the users of accounting information. While noting that lack of knowledge on economic matters by users of accounting information can contribute to uninformed decision, the study recommends high quality reference to the system and regular financial reports audit as a panacea to the problem of relying on unfaithful financial reports in making investment decisions.

According to Zager and Zager (2006), significant number of investment information comes from accounting information systems and from financial statements and "reading" contents of financial statements provide whole

number of different instruments and analyses procedures for understanding business. After a thorough review of various financial ratios, the researchers concluded that condensed statement and consequent financial information can be very useful in estimating the current business quality and creating assumption for more successful business in the future.

Maidoki (2013) utilized primary data and survey approach to study the interrelationship between financial reports and effective managerial decision making. The concept which forms the backbone of the research rested on the fact that managers often engage in decisions which are made on the basis of their knowledge about financial information contents of the financial statement. The study which was targeted at the staff of WEMA bank plc in western Nigeria applied tables and percentages in the analyses of responses gathered, and they found that financial reporting as a device for disclosure of organization's financial dealings can eliminate some problems, resulting from inappropriate planning and decisions. The study hence concluded that to resolve conflict of incomparability of financial statements of similar firms, entities should comply with rules regulating the preparation and disclosure of financial statement and reports in order to ensure uniformity and accuracy.

Osuala et al (2012) studied the effect of information content of financial statements on the investment decisions of shareholders using a time series data. The coverage of the study on information content of financial

statements includes profitability, earning per share, dividend per share, leverage and liquidity whereas shareholders' investment decisions were represented by change in number of shares. The research applied regression analytical technique and found that shareholders in the Nigerian capital market do not rely much on financial statements as a major determining factor for their investment decisions. It was observed that other factors or variables outside firms' annual reports such as regularity of dividend payment and market price of shares are vital to shareholders' investment decisions. The study therefore recommends proper awareness creation by the appropriate agencies to enhance shareholders' understanding of the relevance of published accounts to enable them to know the financial states of the companies of their interest before making investment decisions.

Another study in Tanzania adopted primary data approach to analyse the role of financial statements in investment decision making. The study purposed to examine how financial reports information aid investors to evaluate the performance of a company for investment decision making. The study adopted the use of primary data collection method and targeted respondents that are knowledgeable in ratio analysis as a means of extracting financial information. Its findings show that financial statements are critical in the investment decision making and investors are confident with the use of financial statements in arriving at investments decisions. It was thereby recommended that firms should fully

apply the IFRS principles in the preparation of its financial reports and investors should seek consultancy services in the use of financial reports to make investment decisions (Nkuhi; 2015).

Ekwe (2013) conducted an investigation on the degree of reliance of the published financial statements by corporate investors utilizing a survey research design by which data were generated by means of questionnaire administered on one hundred and fifty corporate investors and senior management officials of the selected banks. On the basis of descriptive statistics and t tests which was conducted on SPSS analytical package, the study revealed that investors do understand the financial statement well before making investment decisions; most investors depend heavily on the credibility of auditors/financial expert approval of financial statement in making investment decisions and as such published financial statement is very important in the investors' decision making. The researcher therefore recommended that adequate care and due diligence should be maintained in preparing financial statements to avoid faulty investment decisions which could lead to loss of funds and possible litigations.

Anaja and Onoja (2015) combined both secondary data from ten years' time series and primary data to ascertain the role of financial statement on investment decision making in United Bank for Africa Plc. of Nigeria. The results of analysis showed that investors depend heavily on the credibility of auditors/financial expert approval of

financial statement in making investment decisions, and so published financial statement is very important in the investors' decision making. The scholars therefore concluded that, profitability, assets, liabilities and equities of banks are significant ways of evaluating the performance of a banks and thus, recommended that adequate care and due diligence should be maintained in preparation of financial statements to avoid faulty investment decisions

### Gap in Literature

Existing literature on the use of financial statements contents in making investment decisions have been approached from primary and secondary data perspectives. And some of the works found through their analyses that financial information contained by the financial statements influence the investment decisions of the ordinary shareholders. However, this is with the exception of Osuala, Ugwumba and Osuji (2012) who maintained in their findings that results of financial performance and status of firms did not affect the investment decisions of common stockholders.

So this research is geared towards following up on this distinctive opinion and also go a step further in including common stock prices of the firms in the regression model with the aim of holding or refuting the claim of the above researchers.

### Methodology

This research adopted the *expost facto* design which is appropriate for measuring facts and variables which occurred before the research and the variables cannot be manipulated in the

research process. The area of study is Nigeria since the companies under study are operating within the Nigeria capital market.

Secondary data were sourced from the annual reports of ten commercial banks in Nigeria using the judgemental sampling technique. The banks covered include Zenith, Diamond, Guaranty Trust, Sterling, Union, First City Monument, United Bank of Africa, Access, Fidelity and Stanbic IBTC. Shareholders' investment decision and financial statement information of these banks relating to profitability, efficiency and market prices of stock were collected. Panel data collected for the firms over a twelve year period (2006 – 2017) on four focus variables resulted in 480 data points used for the study. Multiple regression analysis was employed for analyzing the data set.

### Model specifications

The comprehensive model for the regression analysis is presented below:

$$SID_{it} = \beta_0 + \beta_1ROA_{it} + \beta_2MPS_{it} + \beta_3EPS_{it} + \mu_{it}$$

Where: SID = Dependent Variable

ROA, MPS, EPS = Independent Variables

$\beta_0$  = Intercept.

$\beta_1, \beta_2, \beta_3$  = Parameters for independent variables beta coefficients

Where: SID = Change in Shareholders' Investment Decision i.e. change in number of shares outstanding.

Returns on Total Assets;  $\frac{\text{Profit after tax}}{\text{Total assets}}$

MPS = Market price per Share

EPS = Earnings per Share

### Results and Discussions

Data collected from the financial reports of the selected banks were analyzed

using the panel regression method while adopting the fixed and random effect model. The Hausman test was conducted to guide the choice of either fixed or random effect models of the multiple regression results obtained. This test has a pair of hypotheses which are stated thus;

**Hypothesis I**

Ho1: Returns on assets has no significant effect on the investment decisions of shareholders

Ho: Accept the random effect model

H1: Accept the fixed effect model

The result of the Correlated Random Effects - Hausman test appended as Appendix I yields a chi-square value of 14.77 approximately at 1% level of significance, so we reject the null hypothesis and therefore accept the fixed effect regression model as appropriate for testing the hypotheses raised in this work.

Table 1 below contains the result of the regression estimate coefficient for

returns on assets as one of the financial statement information on the shareholders’ investment decisions in ten selected commercial banks in Nigeria. According to the result obtained in the table, returns on assets at the lag one year period has a positive association (beta value = 7.72 approximately) with the changes occurring in the equity holdings of selected banks.

It therefore suggests that returns on assets as a measure of banks’ profitability in terms of total assets invested in the banks moves in the same direction with changes occurring in the shareholders’ decisions to invest more in the banks or otherwise. It also implies that reduction in the values of returns on assets of selected banks in a given year will, all things being equal, be associated with corresponding decrease in shareholders’ investment decisions in the following year and at a statistically significant level.

Table 1: Fixed Effect Regression of ROA, EPS and MPS on SID

Dependent Variable: SID  
 Method: Panel Least Squares  
 Date: 11/26/18 Time: 13:47  
 Sample (adjusted): 2007 2017  
 Periods included: 11  
 Cross-sections included: 10  
 Total panel (balanced) observations: 110

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.281014	0.201497	-1.394634	0.1663
ROA(-1)	7.718132	2.603194	2.964870	0.0038
EPS(-1)	0.000571	0.002995	0.190648	0.8492
MPS(-1)	0.047098	0.014005	3.363067	0.0011

## Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.503473	Mean dependent var	0.448787
Adjusted R-squared	0.404934	S.D. dependent var	1.150670
S.E. of regression	0.088626	Akaike info criterion	3.118303
Sum squared resid	114.9553	Schwarz criterion	3.437451
Log likelihood	-158.5067	Hannan-Quinn criter.	3.247751
F-statistic	2.064891	Durbin-Watson stat	2.062146
Prob(F-statistic)	0.026318		

*Source: Researcher's Eviews Output 2018*

So in the light of this result, we reject the null hypothesis 1 as have been restated in this subsection and therefore conclude that returns on assets has significant influence on the investment decisions of shareholders. This outcome is in agreement with that of Osuala, Ugwumba & Osuji (2012) who employed ROA as a measure of firms' profitability (PRO) and regression as analytical technique, and found that PRO has significant effect on the shareholders' investment decisions of the selected firms in their study.

**Hypothesis II**

Ho2: Earnings per share have no significant influence on shareholders' investment decisions

The second coefficient on table 1 above depicts the result obtained for the regression of earnings per share on the shareholders' investment decision. The beta coefficient of earnings per share at the one year lag suggests that EPS influences shareholders' decisions directly. At such, growth in the earnings per share reported by the firm in its financial reports has the likelihood to generate additional investments from the shareholders. It is evident from the

foregoing that shareholders of commercial banks in Nigeria are prone to react to changes in the earnings per share reported by banks in the same direction.

However, the direct relationship that is found between earnings per share and shareholders' investment decisions has a low coefficient value of 0.0006 approximately and is not statistically significant. The implication being that the level of association found in this study to exist between the two variables is negligible and does not warrant statistical conclusions or inferences on its basis. This is because the t-statistics of the EPS beta coefficient is low ( $0.19 < 2$ ) and its probability value is outside the acceptable bounds of 5%.

Hence the null hypothesis which holds that earnings per share have no significant influence on shareholders' investment decisions will be accepted and its alternative implication jettisoned.

**Hypothesis III**

Ho3: Market price per share has no significant effect on shareholders' investment decisions of some selected money deposit banks in Nigeria.

The market price of shares in the selected money deposit banks yields a positive beta coefficient in the multiple regression result on table 1 above. The regression outcome suggests that market price of shares at the lag of one year period will influence the decision of a shareholder to invest in the selected firms at beta level of 5% (0.047). The implication of this finding is that a unit increase in the market value of shares in the selected banks can lead to 5% increase in the investment a shareholder is willing to make in the selected commercial banks in Nigeria. Thus, the study opines, based on this outcome that shareholders of selected banks respond to changes occurring in the market value of shares in arriving at their investment decisions.

The above outcome is statistically significant at 1% implying that the beta coefficient of MPS can be relied upon in drawing of statistical inferences. In the light of the findings made thus far as it concerns the market price of shares, we reject the null hypothesis as restated in this subsection and therefore conclude that market price of shares influences investment decisions of shareholders of some selected banks in Nigeria.

### **Summary of Discussion**

The regression analysis in table 1 above shows that returns on assets and market prices of firms' shares predict the investment decisions of shareholders in the preceding financial year. In addition to the coefficients and their probability values, the residual statistics of the multiple regression analysis also justifies the validity of the regression estimates. The r-squared value of 50% suggested that the selected variables in

the regression model can explain up to half of the changes that will occur in the investment outcome of shareholders in these selected banks. Also, the f-statistics is significant at 5% suggesting that the regression model is well fitted and independent variables are sufficient to explain the changes that occur in the shareholders' investment decisions which is the dependent variable. The Durbin-Watson statistics of 2.06 approximately indicates that the regression estimate is reliable to a reasonable extent. So the study found that financial statement information on profitability and prevailing market price of shares have significant effects on shareholders' investment decisions.

### **Conclusions and Recommendation**

Based on the findings made in the previous section, this paper concludes that information on profitability of a bank which can be found in the financial statements as well as the prevailing market price of common stocks held by shareholders can influence significantly, their investment decisions.

The study therefore recommends that financial statements preparation should be viewed substantially as a means of communicating to shareholders and enabling them to arrive at the best economic decisions; thus firms are better instructed to ensure that no part or process of the financial statement preparation should be trivialized.

Shareholders should however understand that immediate gains do not guarantee future wealth; in other words, the observed reaction at the lag one year period may not be the best decisions with respect to changes in their

investment choices in the selected banks in this study.

Accounting bodies at the local and international scenes should also tighten their grip on the regulation of valid financial statements by companies by ensuring that auditors of public firms beam their torchlight on the bookkeeping process which is fundamental to the final reports they produce.

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**Appendix**

Hausman Test  
 Correlated Random Effects - Hausman Test  
 Equation: Untitled  
 Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	14.766653	3	0.0020

\*\* WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
ROA(-1)	7.718132	5.229345	0.976068	0.0118
EPS(-1)	0.000571	-0.000145	0.000001	0.3969
MPS(-1)	0.047098	0.018406	0.000080	0.0013

Cross-section random effects test equation:

Dependent Variable: SID  
 Method: Panel Least Squares  
 Date: 11/26/18 Time: 13:49  
 Sample (adjusted): 2007 2017  
 Periods included: 11  
 Cross-sections included: 10  
 Total panel (balanced) observations: 110

Variable	Coefficient	Std. Error	t-Statistic	Prob.
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ROA(-1)	7.718132	2.603194	2.964870	0.0038
EPS(-1)	0.000571	0.002995	0.190648	0.8492
MPS(-1)	0.047098	0.014005	3.363067	0.0011

Effects Specification

URL: <http://journals.covenantuniversity.edu.ng/index.php/cjbss>

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**Cross-section fixed (dummy variables)**

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R-squared	0.503473	Mean dependent var	0.448787
Adjusted R-squared	0.404934	S.D. dependent var	1.150670
S.E. of regression	0.088626	Akaike info criterion	3.118303
Sum squared resid	114.9553	Schwarz criterion	3.437451
Log likelihood	-158.5067	Hannan-Quinn criter.	3.247751
F-statistic	2.064891	Durbin-Watson stat	2.062146
Prob(F-statistic)	0.026318		

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