



# AN EMPIRICAL STUDY OF THE SUSTAINABLE PERFORMANCE OF AGRICULTURAL FIRMS IN NIGERIA

Micheal Emmanuel Ugwuindu

Department of Economics and Management, Shanxi University, China

## Abstract

*This study is an empirical study of the sustainable performance of agricultural firms in Nigeria from a perspective of social identity theory. The study was quantitative and qualitative. Primary and secondary data sources were used for the study. For the quantitative study, a sample of 264 respondents gotten using email sent out to small, medium-scale and large-scale firms in Nigeria and for the qualitative analysis, interviews were granted by six firm senior executives. The questionnaire was developed in a 5-point Likert scale format. The Spearman's rank-order correlation was used to test the validity of the questionnaire at a 5% level of significance. Analysis was conducted using descriptive statistics correlations and hypotheses was conducted using multiple regression analysis. Findings from the study revealed among others that; managerial behaviour positively impacts firm sustainable performance. Employee behaviour positively impacts firm sustainable performance. Customer behaviour positively impacts firm sustainable performance. Based on the study's findings, the researcher recommended that re-engineering of manufacturing processes be done to ensure efficient use of resources. Improved packaging to increase shelf life should be the priority of firms. Better inventory management, waste audits and measurements should be undertaken by firms for improved sustainable development.*

**Keywords:** Agricultural firms; Customer behaviour; Employee behaviour; Sustainable performance.

## INTRODUCTION

Increasing global environmental awareness and the push for sustainable economic growth have shifted the focus of corporations on environmental sensitivity. It is because of this desire for long-term sustainability that a number of international organizations have been formed, each with their own set of rules for human interaction with the natural world. Using these criteria, businesses are persuaded to see how their strategic role in society can influence behavior and alter the physical, social, and economic environment (Ngwakwe, 2009). Companies are re-awakening to the strategic and competitive role of environmental responsibility in corporate survival as a result of government regulations, social pressure groups, and green consumer pressure at various national levels. Companies are beginning to realize the importance of environmental responsibility in their long-term survival (Ngwakwe, 2009).

As a result of current agricultural food production techniques, ecosystems are under stress in two ways. It is impossible to have one without the other because they lead to resource depletion. Another issue is that food waste from the manufacturing process harms both the environment and public health (Wenzel & Süßbauer, 2021). This matter is of a greater importance in the developing countries given the prime position of agriculture in their economies. In Nigeria for example, the agriculture sector provides more than 60% of employment and remains the primary source of food for a large chunk of the country's population (Babalola & Babalola, 2013). Moreover, agriculture and food processing businesses account for most of SME activities in the country (Oloruwa, 2018). These statistics imply that the waste generated by the Nigeria food processing sector are indeed considerable. These result from activities in the industry including food production, preparation and consumption. There will be a loss of important biomass and nutrients as a result, as well as additional waste and potential environmental issues.

It is no secret that food waste contributes to water pollution, poor working conditions, and sick workers (Gustavsson et al., 2018). As a result, these can lead to higher labor costs and in some cases, higher trash disposal costs. The limited land resources can also be severely strained by the disposal of large amounts of onerous trash, whether in a landfill or by processing and disposal (Evans, 2011).

The term "waste" refers to anything that has been produced or consumed but has not yet been put to use. Included are all types of wastes and residues from various sources: agricultural and industrial as well as municipal (Stancu et al., 2016). Most European regulations classify these compounds as waste because they are removed from the manufacturing process as unwanted elements. The term "by-product," which is frequently heard in the workplace, refers to compounds that are secondary in nature but have a market value (Papargyropoulou et al., 2014).

Waste in the food industry is marked by a high percentage of waste that is specific to the product. If the finished product's quality must be maintained, then not only must waste be generated, but the volume and type of waste that is generated, which consists mostly of organic residue from processed raw materials, cannot be changed (S.M & Barrett, 2017). No matter how hard you try, product-specific waste is difficult to use and dispose of because of its low biological stability, possible pathogen, high water content and quick autoxidation.

Organic raw materials are transformed into consumables through extraction or separation of the nutritionally useful components of the raw materials (Kantor et al., 1997). Due to the lack of nutritional value or inedible components in the unused remains, they cannot be used as a food source. Product-specific waste is unavoidable when raw materials are processed (Kantor et al., 1997). It's created over the course of several manufacturing steps, each of which involves removing the raw materials' essential components. After extraction, other valuable components are often found in the residue.



Disposal, source minimization, and zero-point discharge have all been described in terms of waste management. The sustainability of waste disposal is a major concern for most food processing operations. Waste reuse has become more appealing as a result of new types of process engineering, new products, and new markets (Papargyropoulou et al., 2014). "Recovery" is a key word to emphasize food waste's uniqueness. Instead of being viewed as trash, agro-industry by-products can be used to create high-quality new products (Kiil et al., 2017). However, in order to properly manage waste, a company must consider the costs and long-term viability of the strategy.

Given the following, the broad objective of this study is to undertake an empirical study of the sustainable performance of agricultural firms in Nigeria. Specifically, the study seeks to examine the relationship between managerial behaviour on the firm sustainable performance of agricultural firms in Nigeria. Find out the extent to which employee behaviour impacts the firm sustainable performance of agricultural firms in Nigeria and determine how customer behaviour impacts the firm sustainable performance of agricultural firms in Nigeria.

## **LITERATURE REVIEW**

From a theoretical perspective, the social identity theory and self-categorization theory are two theories that aim to explain how group connections influence our attitudes, feelings, and behaviors. Social identity theory and self-categorization theory have unique differences, although they all contain comparable assumptions and meta-theoretical attitudes at their foundation. We will refer to them as the "social identity method" in this part because of that. Social identity theory asserts that our self-concept is made of both personal and social identities; personal identity refers to our individual traits, while social identities are obtained from the communities to which we belong. ' Gender and ethnicity are just two examples of social groupings that we can belong to, as well as professional associations like the American Society of Association Executives (ASAE), which we can also join (e.g., environmental groups). It is important to recognize the similarities and distinctions among members of one's in-group and out-group when constructing one's social identity. To fit in with the dominant social group's standards, one must conform to its own set of values, principles, and behavior in order to be categorised. Since "group members are psychologically driven to regard [their] groups as different from and more positive than other relevant groups," according to social comparison theory (Suls & Wills, 1991), in-group members give preference in judgments and resource allocation to their own group members (Brown, 2000; Hewstone et al., 2002). When it comes to our ingroup, we are more likely to like, trust, and know each other than we are when it comes to our outgroup members, for example (Tanis & Postmes, 2005; Foddy et al., 2009).

Depending on the position of the parties involved, the effects of ethnocentrism on waste management results might be either peaceful or conflictual, depending on the circumstances.

Climate change and environmental attitudes and behavior are increasingly being studied through the lens of social identity notions. A growing body of research reveals the influence of social identity on pro-environmental elements not directly related to social identity. For waste management, the social identity approach has two major advantages: first, it explains how members of a group can encourage (or discourage) greater commitment to finding solutions; second, it acknowledges how ties between members of different social groups can hamper significant progress toward better waste management policies.

Empirical studies have found that causes and prevention of food waste are linked to age, gender, and location. It was shown that gender disparities were not significant in terms of people's desire to box their leftovers because they feared being seen as obnoxious or because they thought it was against societal standards. In contrast, the amount of food thrown away by females and younger customers was higher than the amount thrown away by males (Collison & Colwill, 1987). According to Sebbane and Costa (2018), men were more likely than women to have larger gaps between their declared and real food waste.

It has been noted that cultural and regional discrepancies in food waste, such as the differences in food consumption habits associated with pre-packaged versus freshly prepared meals, can have an impact on the amount of food that is thrown away. Furthermore, Wang et al. (2017) found that the amount of restaurant waste in China was comparable to that in Nordic countries when compared to Western nations. In addition, the study found that restaurant food waste was higher among tourists than residents, and that restaurant food waste varies by city type.

## **METHODOLOGY**

### *Population and Sample*

The study's population was made up of operators of small, medium, and large-scale enterprises in the food processing industries in Nigeria. Agricultural food processing operators were chosen as the sample population because they are linked to the subject of the study and are interested in the sustainability of food waste management.

Probability sampling entails selecting a totally non-random sample from the group of individuals you are interested in (referred to as the "population"). The outcomes of this study will be generalizable to the full population. In other words, without having to collect data from the entire group, we expect the same findings across the board. A probability random sampling was employed to collect a sample size of 264 respondents.



The data collection process was essential since it allowed for the collection of a large quantity of information in a brief period. The theme of the questionnaire is also varied. Questionnaires do not have time constraints, particularly when distributed by mail, email, or online. In the context of the research, respondents are kept secret. The poll provides actionable statistics, and this information should be used to develop new techniques for following tactics and tendencies in the audience. The study's findings make analysis and visualization tremendously simple. The statistics should be readily quantified to compare and contrast with other kinds of studies. The questionnaire may also be translated into different languages to enhance comprehension and answer rate. A total of 300 questionnaires were shared with small, medium and large-scale Enterprises agricultural/food processing firms in Nigeria. A total of 264 questionnaires were filled out properly and was utilized to conclude the study.

### *Measurement of Variables*

The scale for managerial behaviour was self-designed questionnaires gotten from the review of relevant related literature (Principato et al., 2018; Pirani & Arafat, 2016). The questionnaire has 6 items:

- (1) In managing food waste, the firm takes proper Inventory.
- (2) The firm management have a strong policy on food waste management.
- (3) The firm user uses technology in food waste management.
- (4) The firm management, keep accurate and transparent data on products being rejected.
- (5) The firm ensures employee commitment and in managing food waste.
- (6) The firm ensures that there is a cooperation between staff and management on food waste management.

Cronbach's Alpha was 0.863 for this scale's reliability. The rationale for including managerial behaviour derives from the fact that management's choices are known to have serious implications for operational efficiency, resource management, and firm performance (Guluță & Rusu, 2016; Miska et al., 2017). Moreover, employees tend to look to managerial example which influences their actions and have serious implications for their productivity and performance. Therefore, employees tend to buckle up and give extra effort when they perceive similar behaviours from management and act in lax manner when they view the opposite from their superiors (Paetzel et al., 2019). Similar arguments have been put forward within the context of food processing firms (Pirani & Arafat, 2016).

Employee behaviour scale was gotten from several pieces of literature reviewed (Aamir et al., 2018; Bharucha, 2018; Okumus, 2020; Papargyropoulou et al., 2016).

The scale was designed in a 5-point Likert format having 8 items the items on the questionnaire include:

- (1) The employees are made to adhere to the firm's policy on food waste management.
- (2) The employee avoids overproduction to reduce food waste.
- (3) The employee is constantly monitored to reduce food waste.
- (4) The staff makes use of an automated production process that ensures a significant reduction of food waste
- (5) Goods are subsidized towards the end of their shelf life to reduce food waste.
- (6) The business invests much in proper storage to reduce food waste.
- (7) The employee shows significant commitment to reducing food waste in production.
- (8) The firm train the staff to be waste-conscious and efficient.

The coefficient  $\alpha$  for this scale of 0.893. Similar rationale can be put forward for including employee behaviour as a predictor of sustainable performance as with management behaviour. The right behaviour by employees means that they are putting in the required effort, giving their best, and being mindful of waste. This is of particular importance in the food processing business as highlighted by scholars like Bharucha, (2018) and Okumus (2020). For instance, employees are directly responsible for managing serving waste by doing a proper job when servings customers and guests (Papargyropoulou et al., 2016; Amir et al., 2018).

The customer behaviour scale was designed from several kinds of literature (Betz et al., 2015; Liao et al., 2018; Miroso et al., 2018; Sirieix et al., 2017; Chen & Jai, 2018).

The 5-point Likert scale questionnaire has 7 items. The items include:

- (1) In the implementation of a sustainable food waste management program, the firm pays much attention to consumer purchasing behaviour.
- (2) The firm has proper management of customer expectations in the production process.
- (3) In managing food waste, the firm considers the consumer's income.
- (4) In the implementation of a sustainable food waste management program, the firm pays much attention to product packaging.
- (5) To ensure that food waste is better managed, the firm ensures that the products meet the customer expectations/satisfaction.
- (6) To ensure reduced food waste among the customers the firm use smaller packaging that ensures reduced food waste.



(7) The firm improves on the quality of our food product and this discourages food waste among the consumers.

The coefficient  $\alpha$  for this scale is 0.873.

Concerning the inclusion of customer behaviour as a dependent, the business management literature is replete with implication of customer satisfaction for business success (e.g., Beckers et al., 2018; Golovkova et al., 2019). Customer behaviour is therefore of key interest in the food processing industry most especially as regards food waste management as has been suggested by several authors (see for example, Betz et al., 2015; Liao et al., 2018; Miroso et al., 2018; Sirieix et al., 2017).

The firm's sustainability performance scale was a self-designed 5-point Likert scale questionnaire. The questionnaire was designed based on the review of the literature. The scale has 12 items. The scale has the following items on it:

- (1) Our firm conducts a periodic food waste audit.
- (2) In managing food waste, the firm considers the costs of management, production, procurement, and other related costs.
- (3) In managing food waste, the firm not only considers short-term profits but also focuses on long-term profit.
- (4) In the implementation of a sustainable food waste management program, the firm pays attention to consumer purchasing behaviour.
- (5) Our company considers the economic incentive of food waste management.
- (6) The firm ensures that the benefits resulting from saving food that would have gone to waste outweigh the costs associated with the implementation of the measure.
- (7) We train our staff to be waste-conscious and efficient.
- (8) The company manages customer expectations properly during the manufacturing process.
- (9) When deciding on a food waste management strategy, the company takes the market price into account.
- (10) When transaction costs associated with food waste prevention become so high that it becomes "rational" to let food go to waste.
- (11) Firms along the food chain need an economic incentive to tackle food waste.
- (12) Firms adopt food waste prevention measures that could contribute to a company's positive image or corporate social responsibility.

The coefficient for this scale is 0.917.

The control variables include: Position at the firm, Status of the institution or firm, Scale of business, Total cost of the business including working capital (excluding land), and Nature of Employment.

### *Statement of Hypotheses*

As per the first objective of the study, managerial behaviour is believed to impact on competitive advantage of a company. Studies (e.g., Guluță & Rusu, 2016) suggest that management choices typically have strong implications for competitive ness because management controls and allocate productive resources, ensure operational efficiency, and thus, improve firm profitability and competitive advantage. Moreover, employees have been known to act based on the body language of managers (Miska et al, 2017). Strict monitoring, effective management, and astute oversight on the part of management would likely motivate workers to put in their best and exhibit proper behaviour (Paetzel et al., 2019). Pirani and Arafat (2016) put forward similar arguments as pertains to the food processing industry. These arguments imply that that Managerial behaviour positively impacts on firm sustainable performance and this is what will be proposed for the first hypothesis. Based on these arguments, hypothesis 1 is stated as follows:

*H<sub>1</sub>: Managerial behaviour positively impacts firm sustainable performance.*

As per the second objective, it is stated that those employees who have a strong sense of company identity, on the other hand, are motivated to work hard to achieve the firm's shared goals for improved performance because they see these successes and failures as personally significant (van Dick et al., 2006; Lee et al., 2015). Those employees who lack firm identification, on the other hand, are less invested in their work and employer, less likely to view firm successes and failures as personally significant, and thus less likely to show high levels of work engagement and discretionary effort (Mael & Ashforth, 1992). Strong identification is expected to occur when one's own group is considered to be "good" in terms of accepted standards and values. As a good benchmark, companies that show social and environmental responsibility will be looked upon favorably. Our conclusion is this: Firm identity influences employee behavior, which in turn affects the firm's long-term viability. Based on the foregoing, it is expected that employee behaviour would impact on sustainable performance positively. Hypothesis 2 is thus, stated as follow:

*H<sub>2</sub>: Employee behaviour positively impacts firm sustainable performance.*

In terms of the third objective of the study, societal influences have an impact on "social identities," or the sense of self derived from group affiliations, in people (Tajfel and Turner 1986). People are more likely to engage in environmentally friendly practices if they see others doing so (Goldstein et al., 2008; Han & Stoel 2017; Welsch & Kühling 2009). Additional research shows that people who identify with an environmental group are more likely to make environmentally friendly decisions and





engage in environmentally friendly activities (Stancu et al., 2016). A person's self-identification as a "typical recycler" predicts their intentions to recycle, regardless of other factors such as attitudes, subjective norms, and perceived behavioral control (Papargyropoulou et al., 1987). People in dominant and minority groups with a high degree of in-group attachment are more likely to hear messages supporting sustainable waste management. Information about sustainable practices can be more readily accepted by those who have a strong sense of in-group identity when it is presented in the context of that group's shared, superior identity (Flapper et al., 2002). The foregoing arguments suggest that customer behaviour could positively impact sustainable performance. Hence, hypothesis 3 is developed as follows:

H3: Customer behaviour positively impacts firm sustainable performance.

The conceptual model which derives from the stated hypotheses of the study is outlined as follows in Figure 1.

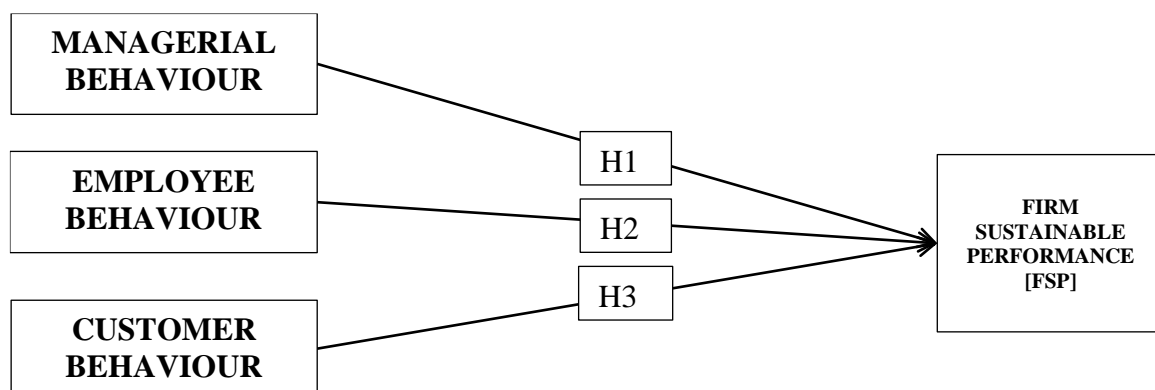


FIG 1. THE CONCEPTUAL MODEL

Model Specification

For this study which is to capture the sustainable performance of agricultural firms in Nigeria from the social identity perspective which is the major and only model employed for this research and also this model specification is along side the social identity perspective, we developed regression model for the study and it goes thus;

FSP = a1 + b1MB + b2EB + b3CB + +U1 (1)

FSP = a1 + b1MB + U1 (2)

FSP = a2 + b21EB + U2 (3)

FSP = a3 + b31CB + U3 (4)

Where;

FSP= Firm Sustainable Performance,

MB = Manager Behaviour,

EB = Employee Behaviour,

CB = Consumer Behaviour

$a_1 \dots a_6, b_1 \dots b_6$  are parameters to be estimated for the models

$U_1, U_2,$  and  $U_3,$  = stochastic error terms for model 1, 2, and 3.

## RESULTS

Respondents based on position at the firm shows that managers had greater percentage of 34.8%, followed by directors 31.4%, then senior staff 22.0% while junior staff had 11.7%. Although there are more senior staffs than junior staff position at the firm will not be a deciding factor as shown in Table 1.

Respondents based on status of firm indicates that majority of the firms (51.1%) are public owned while 48.9% are private owned. The disparity between the status of firm is insignificant as shown in Table 1.

TABLE 1. DEMOGRAPHIC CHARACTERISTICS

Demographic characteristics	Category	Frequency	Percentages
Position at the firm	Director	83	31.4
	Manager	92	34.8
	Senior staff	58	22.0
	Junior staff	31	11.7
	Total	264	100.0
Status of firm	Private owned	129	48.9
	Public owned	135	51.1
	Total	264	100.0
Scale of business	Small and Medium-scale Firm	227	86.0
	Large Scale Firm	37	14.0
	Total	264	100.0
Working capital	Less than N1.5 million	29	11.0
	N1.5 - N50 million	84	31.8
	N50 - N200 million	97	36.7
	N200 million and above	54	20.5
	Total	264	100.0
Nature of Employment	Work part-time	89	33.7
	Work full-time	175	66.3
	Total	264	100.0

Table 1 shows the distribution of the respondents based on the scale of business shows that small and medium scale firms have greater majority of 86% while large scale firms have 14.0%. Although majority of the respondents are small and medium scale enterprises the scale of business will not be a significant factor in this study.

Distribution based on working capital shows that majority have a working capital of N50 - N200 million while the least have a working capital of Less than N1.5 million. This shows that majority for the respondents have a working capital less than 200 million as shown in Table 1.



Responses based on the nature of employment shows that 66.3% of the respondents are full time workers while 33.7% are part time workers. This is an indication that majority of the workers will understand better the context of the study as shown in Table 1.

There was no need to worry about common method variance because the information was gathered from two distinct sources. It was found that Podsakoff et al. (2003)'s statistical remedy reduced the amount of source bias significantly. For this study, Podsakoff and Organ (1986) stated that they arranged the survey data in random order and then used Harman's one-factor test to avoid common method bias. It is possible for a single factor to account for more than half of the total variance, according to Podsakoff and Organ (1986). A principal component factor analysis was used to test all of the variables. In this dataset, the total variance extracted by a single factor is 41.69%, which is less than the 50% recommended threshold for common method bias.

Initially, the factorability of the 33 items was examined. Several well-recognised criteria for the factorability of a correlation were used. Firstly, it was observed that all the 33 items correlated at least .3 with at least one other item, suggesting reasonable factorability (see Appendix).

**Kaiser-Meyer-Olkin Test**

The Kaiser-Meyer-Olkin (KMO) Test determines how well your data is suitable for Factor Analysis. The test determines sampling adequacy for each variable in the model as well as for the whole model. The statistic is a measure of the percentage of variance that may be common variation among variables. The result of the Kaiser-Meyer-Olkin measure of sampling adequacy was .931, above the commonly recommended value of .6, and Bartlett's test of sphericity was significant ( $\chi^2(5500) = 528.0, p < .01$ ) as shown in Table 2.

TABLE 1. KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.931
	Approx. Chi-Square	5500.711
Bartlett's Test of Sphericity	df	528
	Sig.	.000

**Principal Components Analysis**

Principal component analysis is adopted for all items, and maximum variance orthogonal rotation is carried out. The final analysis results are obtained, as shown in Table 3. From the analysis results, 4 factors were extracted from exploratory factor analysis which are Managerial Behaviour, Employee Behaviour, Consumer Behaviour and Firm Sustainable Performance The load of all items on the corresponding factors is greater than 0.6, and the load on other factors is less than 0.5, indicating that the

scale has good one-dimensional property.

TABLE 2. QUESTIONNAIRE SCALE KEY

Managerial Behaviour	MB1-MB6
Employee Behaviour	EB1-EB7
Consumer Behaviour	CB1-CB7
Firm Sustainable Performance	FSP1-FSP12

TABLE 3. ROTATED FACTOR MATRIC

	Factor			
	<i>MB</i>	<i>EB</i>	<i>CB</i>	<i>FSP</i>
MFB1	.091	.605	.228	.123
MFB2	.172	.653	.201	.169
MFB3	.131	.680	.236	.238
MFB4	.309	.562	.127	.196
MFB5	.313	.622	.120	.203
MFB6	.349	.573	.260	.192
EF1	.143	.470	.317	.237
EF2	.201	.438	.291	.439
EF3	.305	.461	.114	.467
EF4	.326	.443	.183	.505
EF5	.263	.269	.282	.601
EF6	.229	.294	.217	.598
EF7	.245	.189	.212	.678
EF8	.282	.319	.347	.482
CB1	.230	.148	.462	.264
CB2	.359	.181	.466	.351
CB3	.323	.131	.475	.381
CB4	.176	.190	.573	.363
CB5	.232	.238	.535	.348
CB6	.269	.267	.590	.150
CB7	.161	.316	.683	.156
FSP1	.387	.226	.455	.124
FSP2	.471	.347	.364	.126
FSP3	.438	.224	.400	.205
FSP4	.483	.332	.298	.206
FSP5	.668	.243	.188	.294
FSP6	.615	.295	.273	.258
FSP7	.643	.224	.186	.268
FSP8	.703	.207	.130	.309
FSP9	.600	.162	.239	.288
FSP10	.586	.168	.342	.064
FSP11	.509	.112	.421	.154
FSP12	.343	.278	.442	.026

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

As shown in Table 4, Capital ( $M = 2.66$ ,  $SD = 0.92$ ), MB ( $M = 3.87$ ,  $SD = 0.80$ ), EB ( $M = 3.78$ ,  $SD = 0.76$ ), CB ( $M = 3.78$ ,  $SD = 0.77$ ) and FSP ( $M = 3.79$ ,  $SD = 0.73$ ) show a higher



deviation from the mean.

TABLE 4. DESCRIPTIVE STATISTICS

	Mean	Std. Dev.	N
Capital	2.6667	.92425	264
MB	3.8750	.80132	264
EB	3.7680	.76988	264
CB	3.7868	.77749	264
FSP	3.7926	.73404	264

As shown in Table 6, Working Capital shows an insignificant weak correlation with Managerial Behaviour ( $r=0.074$ ,  $p>0.05$ ), Employee Behaviour ( $r=0.036$ ,  $p>0.05$ ), Consumer Behaviour ( $r=-0.004$ ,  $p>0.05$ ) and firm sustainability Performance ( $r=0.073$ ,  $p>0.05$ ). Managerial Behaviour has strong and significant positive correlation with Employee behaviour ( $r=0.74$ ,  $p<0.05$ ), Consumer Behaviour ( $r=0.605$ ,  $p<0.05$ ) and Firm Sustainability Performance ( $r=0.649$ ,  $p<0.05$ ). Employee Behaviour have significant strong positive correlation with consumer behaviour ( $r=0.707$ ,  $p<0.05$ ) and Firm Sustainability Performance ( $r=0.707$ ,  $p<0.05$ ). Consumer Behaviour have significant positive correlation with Firm Sustainability Performance ( $r=0.739$ ,  $p<0.05$ ).

TABLE 5. CORRELATIONS

	CAPITAL	MB	EB	CB	FSP
CAPITAL	1				
MB	.074	1			
EB	.036	.707**	1		
CB	-.004	.605**	.707**	1	
FSP	.073	.649**	.726**	.739**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

a. Listwise N=264

A multiple regression was run to test the impact of managerial functions/behaviour (MB) on firm sustainable performance (FSP). The result shows that result is significant at 5% level of significance, these variables statistically significantly predicted  $p < 0.05$ ,  $R^2 = .419$ . hence the hypothesis 1 is accepted with implies that Managerial behaviour positively impacts on firm sustainable performance as shown in Table 7.

To test for hypothesis 2, multiple regression was run to test the impact of employee functions/behaviour (EB) on firm sustainable performance (FSP). The result shows that it is significant at 5% level of significance, these variables statistically significantly predicted FSP  $p < .05$ ,  $R^2 = .525$ . hence, we accept the hypothesis 2 which implies that Employee behaviour positively impacts on firm sustainable performance as shown in Table 7.

To tests for hypothesis 3, multiple regression was run to test the impact of customer behaviour (CB) on firm sustainable performance (FSP). The result shows that the

relationship between FSP and CB is significant at 5% level of significance, these variables statistically significantly predicted FSP  $p < 0.05$ ,  $R^2 = .544$ . hence, we accept the hypothesis 3, that Customer behaviour positively impacts on firm sustainable performance as shown in Table 7.

TABLE 6. HIERARCHICAL REGRESSION RESULTS FOR HYPOTHESIS

Dependent Variable: FSP											
Variable	B	t	Sig.	Variable	B	t	Sig.	Variable	B	t	Sig.
MB	.595	13.817	.000	EB	.692	17.063	.000	CB	.698	17.747	.000
R <sup>2</sup>	.422			R <sup>2</sup>	.526			R <sup>2</sup>	.546		
Δ R <sup>2</sup>	.419			Δ R <sup>2</sup>	.525			Δ R <sup>2</sup>	.544		
Sig.	.000 <sup>a</sup>			Sig.	.000 <sup>a</sup>			Sig.	.000 <sup>a</sup>		

Notes: n= 264. Firm sustainability Performance (FSP), Managers Behaviour (MB), Employee Behaviour (EB), Consumer Behaviour (CB)

## CONCLUSION

The study investigated an empirical study of the sustainable performance of agricultural firms in Nigeria from the perspective of social identity theory. The results of the empirical study show that managerial behaviour has a significant positive correlation with firm sustainable performance. This strong association between the two indicates that for a firm's sustainable performance, managerial behaviour is very important. The reason for this positive impact is not farfetched, as the managers are at the top echelon of the business. They drive any innovation in the firm and see to its implementation. They have the responsibility to improve the sustainable performance of the firms, especially as regards waste management. When managers have an environmental consciousness, they consider sustainability management of their waste. Research by Guo et al. (2019) has found that increasing concerns have been raised about firms' sustainable development performance. Businesses may benefit from the environmental traits of their managers, who are more likely to promote environmentally-friendly practices in their organizations. Waste management and green self-efficacy are used in their study to examine the relationship between the attributed responsibility of managers and the green, sustainable practices of businesses. Green and sustainable practices are more likely to be implemented when managers assume more accountability for their actions. Self-efficacy in sustainable actions is bolstered by trash management. Sustainable development practices can be improved by understanding the environmental features of managers.

A considerable link exists between long-term firm performance and employee behavior, according to the findings of this research. This indicates that the employee's actions or inactions have a major impact on the long-term performance of the company. Workers who identify with their company have a stronger sense of belonging and connection to it, which is in line with Deci et al. (2014)'s contention that belongingness is a major psychological need for workers. In addition, Haslam et al. (2016) assert that workers' positive sentiments toward their firm and employment are



fostered as a result of satisfying this desire for belonging. Employee loyalty is a key factor in a company's capacity to remain viable in the long term (Sheahan & Barrett, 2017) based on employees who have a strong sense of loyalty to the company are more likely to regard the company's policies as essential. They also believe that the firm's success and long-term viability are inextricably linked to their own. Also, Employees who don't feel a connection to their work or organization are less likely to display high levels of work engagement and extra effort (Flapper & Fransoo, 2014) because they are less emotionally invested in their work and employer. Scholars already showed that the psychological need for belongingness is satisfied by workers who identify with their employer and feel a sense of belonging and connection to it, according to social identity theory" (e.g., Deci et al., 2001). As a result of meeting this need for belonging, workers' positive feelings about their company and employment are bolstered (Haslam et al., 2003). As a result, employees who lack a strong sense of company identity exhibit less positive work and work-related behaviors, which can lead to subpar performance from the company as a whole. In addition, a strong sense of belonging to a company can lead to a greater level of commitment from employees, including a possible psychological investment in their work and employment (Haslam et al., 2003).

Moreover, the findings of the study indicate that consumer behaviour significantly has a positive correlation with firm sustainable performance. The reason for this is that it increases consumer loyalty in the near term, and as the firm continues to thrive in a more environmentally conscious future, it secures long-term customer loyalty as well. Customers see the term "sustainable" as anything that can continue and "be maintained at a specific pace or level." For consumers, this may mean their own health, the health and environment of others, or both, but it could also mean their money. Hence, the behaviour of the customers will affect firm performance. In the area of waste management, customers will like to support firms that undertake sustainable waste management. The study also found that consumer purchasing behaviour determines, to a large extent, the food waste management programmes of firms as they try to meet customer expectations (Suls & Wills, 1991).

Based on the qualitative study conducted using interviews, findings have shown that waste management is a challenge to firms irrespective of size. This agrees with the assertion of Armed (2008) who opined Waste management is an issue that all businesses, regardless of size, must contend with. Inadequate waste collection bins and bin structures; inadequate distribution of waste containers; a lack of adequate waste transport vehicles; an insufficient waste transport frequency; inadequate vehicle paths; and the unaddressed issue of waste transport from health care facilities are all issues that should be addressed. The biggest challenge with food waste management is its financial implications for the firms. In addition, machinery for

waste management is almost nonexistent in small and medium-scale food manufacturing industries. This makes waste management a major challenge. On the other hand, oversupply, production defects, trimming to achieve the desired shape, contamination, technological flaws, and inefficiency are the major sources of waste generation in the food processing firms in Nigeria.

Also, there are indications that employees' lack of technical expertise, poor motivation, and lack of commitment to handling waste constitute a major challenge in waste handling. This is in consonance with the opinion of respondents interviewed who held that for waste management to be successful, the employees must be carried along with its formulation of the policies so that they can show significant commitment to its implementation. The findings of this study also agree with WHO findings that employee attitude and lack of awareness can affect firms' sustainability waste management drive (Wenzel & Süßbauer, 2021). Also, several researchers have reported commitment and inclusiveness as the major thrust to successful implementation of sustainable waste management (Ayo et al., 2016). Also, another researcher has reported that Waste may be decreased in the manufacturing business by recycling resources, employing less hazardous alternative materials, or by altering design and manufacturing components and processes. Waste minimization or source reduction may result in a variety of advantages, including lower use of natural resources and reduced toxicity of wastes. (Gekas & Nikolopoulou, 2017).

Based on what we also previously saw in the result, iterating the findings of the study indicate that consumer behaviour significantly has a positive correlation with firm sustainable performance. The reason for this is that it increases consumer loyalty in the near term, and as the firm continues to thrive in a more environmentally conscious future, it secures long-term customer loyalty as well. Customers see the term "sustainable" as anything that can continue and "be maintained at a specific pace or level." For consumers, this may mean their own health, the health and environment of others, or both, but it could also mean their money. Hence, the behaviour of the customers will affect firm performance. Likewise, like we said A considerable link exists between long-term firm performance and employee behavior, according to the findings of this research. This indicates that the employee's actions or inactions have a major impact on the long-term performance of the company. Workers who identify with their company have a stronger sense of belonging and connection to it, which is in line with Deci et al. (2014)'s contention that belongingness is a major psychological need for workers. In addition, Haslam et al. (2016) assert that workers' positive sentiments toward their firm and employment are fostered as a result of satisfying this desire for belonging.

Further more based on the findings of the study, the findings of the study we see that Managerial behaviour positively impacts on firm sustainable performance. As mentioned earlier the reason for this positive impact is not farfetched as the managers





are at the top echelon of the business, they run the firms hence why they positively impact on the firm sustainable performance. Employee behaviour positively impacts on firm sustainable performance. The actions and in-actions of the employees significantly affects the firm sustainable performance. Lastly Customer behaviour also significantly positively impacts on firm sustainable performance.

This study is an empirical study of the sustainable performance of agricultural firms in Nigeria from a perspective of social identity theory. Specifically, the study seeks to examine the relationship between managerial behaviour, employee behaviour and Customer behaviour on the firm sustainable performance of agricultural firms in Nigeria. The study was quantitative and qualitative. Primary and secondary data sources were used for the study. For the quantitative study, a sample of 264 respondents gotten using email sent out to small, medium-scale and large-scale firms in Nigeria and for the qualitative analysis, interviews were granted by six firm senior executives. The questionnaire was developed in a 5-point Likert scale format. The Spearman's rank-order correlation was used to test the validity of the questionnaire at a 5% level of significance. Analysis was conducted using descriptive statistics correlations and hypotheses was conducted using multiple regression analysis. Findings from the study revealed among others that; managerial behaviour positively impacts firm sustainable performance. Customer behaviour positively impacts firm sustainable performance. Based on the study's findings, the researcher recommended that re-engineering of manufacturing processes be done to ensure efficient use of resources. Improved packaging to increase shelf life should be the priority of firms. Better inventory management, waste audits and measurements should be undertaken by firms for improved sustainable development. Packaging, labeling and types of packs as per buyer's requirements, consumer needs of importing countries should be implemented properly to reduce waste assorted with consumption. The development of cheap reusable and/or degradable packaging should be pursued by firms. Training and retraining of workers should be undertaken by firms for improved waste management. In addition, people prefer a positive image of their in-groups and do not want their in-group to be overtaken by other groups. (Papargyropoulou et al., 2014). Dissociative groups, which are out-groups to which the consumer aspires to belong, are an example of this. Study participants were asked about their intentions to engage in sustainable practices like waste sustainability, organic composting and recycling (Sheahan & Barrett, 2017). To avoid casting themselves in a negative light, members of the focus-group realized that a dissociated reference group was doing better on positive, long-term behavior (thus making the in-group look bad). In public places, where the communal self is most prominent, these effects were amplified. Friendly competition between rival groups such as cities, communities, organizations, or corporate units could be fostered as a practical application of this research (Kantor et

al., 1997). Another finding from the literature on social identity is that people with a high level of "in-group identification" are more affected by the effects of social identity. Organic purchases are predicted, for example, by self-declaration as a "green consumer" or a "organic consumer" (Sheahan & Barrett, 2017). Several researchers (e.g., Ayo et al., 2016) have reported commitment and inclusiveness as the major thrust to successful implementation of sustainable waste management (Ayo et al., 2016). Also, another researcher has reported that Waste may be decreased in the manufacturing business by recycling resources, employing less hazardous alternative materials, or by altering design and manufacturing components and processes. Waste minimization or source reduction may result in a variety of advantages, including lower use of natural resources and reduced toxicity of wastes. (Gekas & Nikolopoulou, 2017).

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