

# SUSTAINABILITY DISCLOSURE OF NON-FINANCIAL LISTED FIRMS IN NIGERIA: ARE THERE DIFFERENCES IN THE LEVEL OF DISCLOSURE AMONG INDUSTRY SECTORS?

\*Adesina, Julius Babatunde<sup>1</sup>, PhD; Asaolu<sup>2</sup>, T.O. & Nwidobie, B.M<sup>3</sup>.

<sup>1,3</sup> Department of Accounting, Finance & Taxation  
Caleb University Lagos

<sup>2</sup>Vice-Chancellor, University of Ilesa, Osun State

\*Corresponding Author: [jbatees@gmail.com](mailto:jbatees@gmail.com), 08033448410

## Abstract

*Sustainability disclosure in many jurisdictions is still voluntary while it is mandatory in other climes. In Nigeria, the Nigeria Exchange Group (NGX) requires listed firms to include sustainability report in their annual reports from 2019. This study investigated whether there are differences in the level of sustainability reporting among the seven sectors of the non-financial listed firms on NGX. Population for the study was all the 97 non-financial listed firms on NGX while a sample of 30 firms were purposively and proportionately selected, based on largest capitalisation, from the seven sectors of the non-financial firms on NGX. Contents analysis was used to determine the level of quantity and quality disclosures while ANOVA was used as a method of analysis to determine if there were variations in the level of reporting by the seven sectors. Results showed that there were variations in the level of sustainability quantity and quality disclosures at 1% level of significance, with P-values of 0.00001 and 0.00006 respectively. It was therefore recommended that governments at both the federal and state levels should continuously enforce environmental and, health and safety laws with appropriate sanctions for any breach.*

**Key Words:** Stakeholders, Sustainability disclosure, Sustainability reporting quantity and Sustainability reporting quality.

## 1.0 Introduction

In the face of global environmental challenges and growing concerns about social and governance impacts, sustainability reporting has emerged as a pivotal concept guiding the trajectory of businesses and industries. The pursuit of sustainable practices has transitioned from a mere trend to a fundamental imperative, necessitating comprehensive and transparent reporting mechanisms. Sustainability reporting, encompassing environmental, social, and governance (ESG) disclosures, plays a pivotal role in facilitating stakeholder understanding of an organisation's commitment to sustainable practices.

One critical dimension in understanding the efficacy of sustainability reporting is its variance across different industry sectors. Industries, with their distinct operational dynamics, face varying levels of environmental and social challenges, creating a complex landscape for reporting. Consequently, analysing whether sustainability reporting disclosure varies among industry sectors becomes paramount.

There appeared to be no study that have assessed whether there are differences in the level of sustainability disclosures among the seven industry sectors of non-financial listed firms in Nigeria. Although there are few studies on individual sector (Asaolu, Agboola, Ayoola & Salawu, 2011; Joseph, Madugba, Ben-Caleb, Agburuga, Ani, Jegede & Fadoju, 2021; Herbert, Nwaorgu, Onyilo & Iormbagah, 2020) on oil and gas industry and (Owolabi, Adetula, Akinwunmi & Uwuigbe, 2016) on one of the companies in the industrial sector.

Therefore, the aim of this study is to determine whether sustainability quantity and quality disclosures vary amongst industry sectors of non-financial listed firms in Nigeria.

We employed a quantitative and qualitative content analysis to analyse sustainability disclosures by the sampled firms in the seven sectors of the non-financial firms listed on the Nigerian Exchange Limited (NGX). The rest of the study is structured as follows: the next section deals with the theoretical review and hypothesis development, while the section following is on methodology. Section four deals with data analysis and discussion of results while the final section is on conclusion and recommendations.

## **2.0 Literature review**

### **2.1 Theoretical review and hypothesis development**

Stakeholder theory was developed by Freeman and Reed (1983). Before 1983, it was traditionally believed that business organisations exist to meet the objective of the owners, which is usually to maximise the shareholders' value. However, Freeman and Reed (1983), opined that business environment had changed and the obligations of business organisations are not only towards the shareholders but towards a wide group, which they referred to as stakeholder, that is, those group who can affect the achievement of the firm's objective. Freeman and Reed (1983), define stakeholder as any identifiable group or individual who can affect the achievement of organisation's objective or who is affected by the achievement of the organisation's objective. This definition means that shareholders, creditors, employees, suppliers, consumers, government, media, interest groups and the society in general are stakeholders of every firm (Freeman, 2010; Freeman & Reed, 1983). This definition of stakeholder is appropriate to our study of sustainability reporting by the seven sectors of the non-financial listed firms on the NGX.

The clamour by stakeholders in recent time for sustainability disclosures has led to increased attention to sustainability reporting by firms (O'Donovan, 2002; Lambrechts et al, 2019; Rocal & Searcy, 2012; Crawford & Williams, 2010; Ho & Taylor, 2007; Deegan & Rankin, 1997). Firms are under obligation to provide sustainability information in form of a report covering all aspect of sustainability to satisfy the clamour of the stakeholders in accordance with Freeman and Reed (1983) definition of stakeholder. Although, the information need of each category of stakeholder is different (Michelon & Parbonetti, 2012). For example, stakeholders with financial interest in the firm will be more interested in the economic dimension of sustainability disclosure, whereas the environmental pressure groups will be more concerned about the environmental aspects. The internal stakeholders, such as employees, may demand for more social information.

Freeman (2010) opined that there is a complex interconnection between economic and social issues, therefore, it is inappropriate for any stakeholder to consider a company's social responsibility as isolated from its economic performance, this is because, in today's business world, companies must consider all aspects of sustainability to be successful. Therefore, firms would consider the adoption of sustainability reporting concepts within their corporate strategies and objectives, which would include embracing the practice of sustainability disclosure, in response to the stakeholders' demand.

Advocates of stakeholder theory believe that one of the objectives of sustainability is transparency concerning the firm's performance. As transparently disclosed information about the firm's sustainability performance, whether positive or negative, will be, even by non-specialist stakeholders, easily understood and assessed to determine the firm's overall performance. This transparency may also involve allowing feedback from both external (e.g., investors) and internal (e.g., managers and employees) stakeholders. Such mutual communication between the firm and its stakeholders would build and sustain relationship and loyalty with the firm's stakeholders, which will guarantee the firm's legitimacy (Brusca et al, 2018; Ralph & Stubbs, 2014).

However, industry type has been found to be one of the factors that have significant impact on the level of sustainability disclosure by firms. According to Jenkins (2006), sustainability performances are diverse depending on firms' sectors and Svensson et al. (2009) opined that the level of sustainability information disclosure depends on the type of a firm's industry. Environmental information tends to be provided more by environmental sensitive firms whereas manufacturing firms tend to provide more sustainability information than firms in the service sector. In their study, Gamerschlag et al. (2010) discover that companies in consumer and energy supplying industries disclose more sustainability information than those in service industries.

Various studies also confirmed that corporate social responsibility (CSR), social responsibility report or sustainability reporting varies among industry groups (Mahmood, 1999; Reverte, 2009; Brammer & Pavelin, 2006, 2008; Campbell *et al.*, 2003; Cho & Patten, 2007; Deegan & Gordon, 1996; Hackston & Milne, 1996; Roberts, 1992; Zeng *et al.*, 2012). While some industries have great impact on the environment in their operations, such as the oil and gas industry, telecom industry with their mast, etc., some have minimal impact on the environment. Those industries that have great impact on the environment need to comply with environmental regulations and should, therefore, disclose their environmental policies and practices, otherwise stakeholders and especially investors may assume the worst (Cormier & Magnan, 2003; Clarkson *et al.*, 2008; Cho & Patten, 2007; Hackston & Milne, 1996; da Silva Monteiro & Aibar-Guzmán, 2010).

In this study, an industry comparison of the level of quantity and quality of sustainability disclosures by the seven sectors of the non-financial listed firms in Nigeria was therefore, investigated, by testing the following hypotheses:

H<sub>1</sub>: The quantity of sustainability disclosures differs among industry sectors of non-financial listed firms in Nigeria.

H<sub>2</sub>: The quality of sustainability disclosures differs among industry sectors of non-financial listed firms in Nigeria.

## 2.0 Empirical literature

Aggarwal and Singh (2019) analysed the corporate social responsibility (CSR) and sustainability reporting (SR) practices of Indian 60 top listed companies, in terms of disclosure quantity and quality, and investigated the differences in sustainability reporting practices by dimension, industry, ownership structure, firm size and profitability. They collected data from annual reports, business responsibility reports, CSR and sustainability reports. They developed a comprehensive Sustainability Reporting Index (SRI), based on several standards and guidelines, comprising of 80-item equally weighted index under 7 dimensions, namely, economic (8 items), governance and ethics (15), environment (16), community (9), customers and product responsibility (8), employees and labour practices (17) and human rights (7). And then used content analysis technique to determine level of quantity and quality of disclosure. Results show that 18 items of the index were not disclosed by most companies in India, while sustainability reporting quality was found significantly lower than sustainability reporting quantity. Further, it was discovered that sustainability reporting practices significantly differ by dimension/category, industry-type and firm-size but were not influenced by ownership structure.

Zarzycka and Krasodomska (2021) investigated factors that determines the differences in the quantity and quality of non-financial key performance indicators of 169 large public interest entities in Poland. Factors considered includes investors, employees, customers, industry type, ecologists, experience of the company in non-financial reporting and reporting standard. Findings showed that industry type, ecologists and reporting standard determine the significant differences in the quality and quality of key performance indicators reported by the firms.

## 3.0 Methodology

This study was designed to test whether there are differences in the level of sustainability disclosures among the seven sectors of the non-financial listed firms on NGX. All the 97 non-financial firms listed on the Nigerian Exchange (NGX) and active during the study period, 2016 – 2020 formed the population for the study. Sample for the study consists of 30 firms, purposively and proportionally selected from the seven sectors of non-financial firms listed on NGX. The selection was determined in such a way as to ensure that the total capitalisation for the 30 firms gives at least 70% of the total capitalisation of all the 97 non-financial listed firms on NGX. As opined by Janicka, and Sajnóg (2022), market capitalisation has a significant positive effect on the quality of sustainability reporting by firms, therefore, the firms with the highest capitalisation from each sector were selected to form the study sample. This was based on the view from previous studies that support that firm size has a significant correlation with firm disclosure, as larger firms tend to disclose more than smaller ones (Antara et al, 2020; Meutia et al, 2017; Hartikayanti et al, 2016). Based on the above selection criteria, the sample was selected as shown on Table 1

### Table 1: Sample spread

Sector	Number of firms selected
Basic material	3
Consumer goods	8
Consumer services	4
Health care	2
Industrial	7
Information technology	3
Oil and gas	3
Total	30

**Source: Author’s compilation, 2023**

Content analysis was used to determine the sustainability reporting quantity and quality scores by the sampled non-financial listed firms in Nigeria covering the period of five years, 2016 to 2020. A scoring tool of 90 sustainability disclosure index was constructed from the Global Reporting Initiative 2016 Standards, which gave a total of 90 disclosures per year under the four dimensions of sustainability reporting. Sustainability reporting quantity score was determined by a coding process that consists of a dichotomous recording of the disclosure or non-disclosure of each indicator. Each item disclosed was awarded a score of 1 while item not disclosed was awarded 0. The percentage of the total score was then determined.

To arrive at sustainability quality disclosure score, a scoring tool was developed to represent the quality criteria, as summarised in Table 2.

**Table 2: Tool for scoring sustainability disclosure quality**

SR quality	Criterion	Score
Nil	No disclosure	0
Poor	Minimal, general and non-quantitative disclosure	1
Below average	Descriptive and company – specific/quantitative disclosure, but many relevant points not addressed	2
Average	Descriptive and company – specific/quantitative disclosure, but some relevant points not addressed	3
Above average	Descriptive and company – specific/quantitative disclosure, but without comparative data	4
Excellent	Descriptive and company – specific/quantitative disclosure, with relevant comparative data	5

**Source: Adapted from Nobanee & Ellili (2015). Corporate sustainability disclosure in annual reports: Evidence from UAE banks: Islamic versus conventional – 2023.**

This scoring tool was developed based on previous studies (Aggarwal & Singh, 2019; Nobanee & Ellili 2015; Vormedal & Ruud, 2009). The scores obtained by each firm was expressed in percentage. Higher scores reflect a quality sustainability report.

The average quantity and quality scores per year for all the sample firms were determined to give the sustainability quantity (SRQT) and quality (SRQL) scores for each year under study. The average for all the sampled firms under each industry sector and covering the

period of study, 2016 – 2020, was determined to represent the sustainability quantity (SRQT) and quality (SRQL) disclosure levels per industry sector.

To carry out a comparative analysis of the quantity and quality of sustainability reporting disclosures by industry type of non-financial listed firms in Nigeria, ANOVA was used. This follows the method of data analysis employed by Metakanye et al (2021) and Akanno et al (2015) in their studies.

#### 4.0 Data analysis and discussion of results

##### 4.1 Data analysis

##### 1 Sustainability Disclosure Quantity

##### *Overall Sustainability Reporting Quantity (SRQT)*

**Table 3: Summary of ANOVA Results**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Basic materials	5	137.4074	27.48148	2.839506		
Consumer goods	5	213.4722	42.69444	42.62731		
Consumer services	5	112.5	22.5	0		
Health care	5	81.11111	16.22222	2.530864		
Industrial	5	175.7143	35.14286	37.51071		
ICT	5	143.7037	28.74074	151.6872		
Oil and gas	5	180	36	56.33745		

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	2386.959	6	397.8264	9.487125	0.00001	2.445259
Within Groups	1174.132	28	41.9333			
Total	3561.091	34				

**Source: Author's Computation, 2023**

The result, as presented in Table 3 shows that the level of (SRQT) quantity of sustainability reporting disclosures differ across the seven sectors of non-financial listed firms in Nigeria. Giving the P-value of 0.000, which is significant at 1% significance level, and the F value of 9.487125 and F-critical value of 2.445259, the null hypothesis is rejected while the alternate hypothesis is accepted. It is thus concluded that, the quantity of sustainability reporting differs among the seven sectors of the non-financial listed firms in Nigeria.

Tables 4 to 7 show the results for each of the four dimensions of sustainability reporting quantity disclosures.

**Sustainability Reporting Quantity: Governance Dimension**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Basic materials	5	228	45.6	1.244444
Consumer goods	5	305.5	61.1	23.425
Consumer services	5	215	43	0
Health care	5	174	34.8	1.2
Industrial	5	273.7143	54.74286	19.98367
ICT	5	192	38.4	155.0222
Oil and gas	5	270.6667	54.13333	48.53333

**Table 4: Summary of ANOVA Results**

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<b>Between Groups</b>	2746.526	6	457.7544	12.84751	0.00000	2.445259
<b>Within Groups</b>	997.6347	28	35.62981			
<b>Total</b>	3744.161	34				

**Source: Author’s Computation, 2023**

Table 4 shows that the Governance dimension of sustainability reporting quantity differs across the seven sectors of the non-financial listed firms in Nigeria, giving a P-value of 0.000, which is significant at 1% significance level, and F statistic of 12.84751 and F-critical value of 2.4445259. This follows the same pattern with the overall sustainability reporting quantity disclosures.

**Sustainability Reporting Quantity: Economics Dimension**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Basic materials	5	205.1282	41.02564	0
Consumer goods	5	279.8077	55.96154	37.62944
Consumer services	5	182.6923	36.53846	0
Health care	5	153.8462	30.76923	0
Industrial	5	256.044	51.20879	2.173651
ICT	5	279.4872	55.89744	34.18803
Oil and gas	5	328.2051	65.64103	51.28205

**Table 5: Summary of ANOVA Results**

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	4620.053	6	770.0088	43.02646	0	2.445259
Within Groups	501.0927	28	17.89617			
Total	5121.145	34				

**Source: Author’s Computation, 2023**

Table 5 reveals that the Economic dimension of sustainability reporting quantity differs across the seven sectors of the non-financial listed firms in Nigeria, giving a P-value of 0.000, which is significant at 1% significance level, and F statistic of 43.02646 and F-critical value of 2.445259. This follows the same pattern with the overall sustainability reporting quantity disclosures.

### Sustainability Reporting Quantity: Environmental Dimension

**Table 6: Summary of ANOVA Results**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Basic materials	5	26.98413	5.396825	27.21088
Consumer goods	5	94.64286	18.92857	85.99065
Consumer services	5	23.80952	4.761905	0
Health care	5	4.761905	0.952381	1.70068
Industrial	5	89.11565	17.82313	87.32473
ICT	5	69.84127	13.96825	218.4429
Oil and gas	5	46.03175	9.206349	42.07609

#### ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	1438	6	239.6918	3.62584	0.008689	2.44526
Within Groups	1851	28	66.10657			

**Source: Author's Computation, 2023**

Table 6 shows that the Environmental dimension of sustainability reporting quantity differs across the seven sectors of the non-financial listed firms in Nigeria, giving a P-value of 0.008689, which is significant at 1% significance level, and F statistic of 3.62584 and F-critical value of 2.445259. This follows the same pattern with the overall sustainability reporting quantity disclosures.

### Sustainability Reporting Quantity: Social Dimension

**Table 7: Summary of ANOVA Results**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Basic materials	5	110.7527	22.15054	0.924962
Consumer goods	5	191.9355	38.3871	41.73712
Consumer services	5	60.48387	12.09677	0
Health care	5	27.41935	5.483871	9.885536
Industrial	5	121.659	24.3318	58.76107
ICT	5	97.84946	19.56989	183.4894
Oil and gas	5	135.4839	27.09677	81.74355



ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	3366.646	6	561.1077	10.43113	0	2.445259
Within Groups	1506.167	28	53.79167			

**Source: Author’s Computation, 2023**

From Table 7, the Social dimension of sustainability reporting quantity differs across the seven sectors of the non-financial listed firms in Nigeria, giving a P-value of 0.0000, which is significant at 1% significance level, and F statistic of 10.43113 and F-critical value of 2.445259. This follows the same pattern with the overall sustainability reporting quantity disclosures.

**Sustainability Disclosure Quality: Overall Sustainability Reporting Quality (SRQL)**

**Table 8: Summary of ANOVA Results**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Basic materials	5	63.9259	12.7852	1.39534
Consumer goods	5	115.889	23.1778	25.258
Consumer services	5	64.2222	12.8444	0.0037
Health care	5	54.2222	10.8444	0.17037
Industrial	5	125.048	25.0095	10.88
ICT	5	98.8889	19.7778	91.2017
Oil and gas	5	123.556	24.7111	42.4104

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	1138.5	6	189.751	7.75308	6E-05	2.4453
Within Groups	685.28	28	24.4742			
Total	1823.8	34				

**Source: Author’s Computation, 2023**

The result, as presented in Table 8 shows that the level of (SRQL) quality of sustainable reporting disclosures differ across the seven sectors of non-financial listed firms in Nigeria. Giving the P-value of 0.00006, which is significant at 1% significance level, and the F value of 7.753081 with F-critical value of 2.445259, the null hypothesis is rejected while the alternate hypothesis is accepted. It is thus concluded that, the quality of sustainability reporting differs among the seven sectors of the non-financial listed firms in Nigeria.

Tables 9 to 12 show the results for each of the four dimensions of sustainability reporting quality disclosures.

## Sustainability Reporting Quality Governance Dimension

**Table 9: Summary of ANOVA Results**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Basic materials	5	127.733	25.547	0.0853
Consumer goods	5	204	40.8	73.27
Consumer services	5	139	27.8	0
Health care	5	128	25.6	1.28
Industrial	5	230.743	46.149	15.199
ICT	5	172.533	34.507	190.46
Oil and gas	5	228.533	45.707	115.65

**ANOVA**

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	2511	6	418.5	7.3988	8E-05	2.4453
Within Groups	1583.8	28	56.563			
Total	4094.7	34				

**Source: Author's Computation, 2023**

Table 9 shows that the Governance dimension of sustainability reporting quality differs across the seven sectors of the non-financial listed firms in Nigeria, giving a P-value of 0.00008, which is significant at 1% significance level, and F statistic of 7.3988075 with F-critical value of 2.4452594. This follows the same pattern with the overall sustainability reporting quality disclosures.

## Sustainability Reporting Quality Economic Dimension

**Table 10: Summary of ANOVA Results**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Basic materials	5	123.07692	24.615385	0
Consumer goods	5	180.38462	36.076923	9.404586
Consumer services	5	134.61538	26.923077	0
Health care	5	123.07692	24.615385	0
Industrial	5	216.04396	43.208791	1.850018
ICT	5	161.53846	32.307692	64.4313
Oil and gas	5	228.71795	45.74359	6.627219

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>
Between Groups	2266.0573	6	377.67622	32.11801	0
Within Groups	329.25247	28	11.759017		
Total	2595.3098	34			

**Source: Author’s Computation, 2023**

Table 10 reveals that the Economic dimension of sustainability reporting quality differs across the seven sectors of the non-financial listed firms in Nigeria, giving a P-value of 0.00000, which is significant at 1% significance level, and F statistic of 32.11801 with F-critical value of 2.4452594. This follows the same pattern with the overall sustainability reporting quality disclosures.

**Sustainability Reporting Quality  
Environmental Dimension**

**Table 11: Summary of ANOVA Results**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Basic materials	5	12.380952	2.4761905	8.7377173
Consumer goods	5	54.880952	10.97619	25.392574
Consumer services	5	4.2857143	0.8571429	0.0453515
Health care	5	0.4761905	0.0952381	0.0453515
Industrial	5	49.52381	9.9047619	12.859457
ICT	5	33.650794	6.7301587	53.686067
Oil and gas	5	45.079365	9.015873	33.943059

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>
Between Groups	614.15281	6	102.3588	5.318936	0.0009067
Within Groups	538.83831	28	19.24423		
Total	1152.9911	34			

**Source: Author’s Computation, 2023**

From Table 11, the Environmental dimension of sustainability reporting quality differs across the seven sectors of the non-financial listed firms in Nigeria, giving a P-value of 0.0009067, which is significant at 1% significance level, and F statistic of 5.318936 with F-

critical value of 2.4452594. This follows the same pattern with the overall sustainability reporting quality disclosures.

### Sustainability Reporting Quality: Social Dimension

**Table 12: Summary of ANOVA Results**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Basic materials	5	22.58064516	4.516129032	1.479939877		
Consumer goods	5	60.64516129	12.12903226	7.87135796		
Consumer services	5	15.32258065	3.064516129	0		
Health care	5	2.258064516	0.451612903	0.031217482		
Industrial	5	55.57603687	11.11520737	8.454628469		
ICT	5	58.49462366	11.69892473	66.91178171		
Oil and gas	5	60.21505376	12.04301075	16.34871083		
<b>ANOVA</b>						
<b>Source of Variation</b>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<b>Between Groups</b>	750.59136	6	125.0985593	8.661823825	0.00002	2.4452594
<b>Within Groups</b>	404.39055	28	14.44251948			
<b>Total</b>	1154.9819	34				

**Source: Author's Computation, 2023**

Table 12 shows that the Social dimension of sustainability reporting quality differs across the seven sectors of the non-financial listed firms in Nigeria, giving a P-value of 0.00002, which is significant at 1% significance level, and F statistic of 8.661823825 with F-critical value of 2.4452594. This follows the same pattern with the overall sustainability reporting quality disclosures.

### 4.2 Discussion of Results

The hypotheses tested are that sustainability quantity and quality differ among the seven sectors of the non-financial listed firms in Nigeria. Results from the ANOVA on Table 3 show that the average sustainability reporting quantity disclosure significantly differ among the seven sectors of the non-financial listed firms in Nigeria, at 1% significance level. When the four sustainability reporting disclosures are considered, results show that the Governance dimension, Table 4, Economic dimension, Table 5, Environmental dimension, Table 6 and Social dimension, Table 7, show that sustainability quantity disclosures for the four dimensions statistically differ across the seven sectors of the non-financial listed firms in Nigeria, at 1% confidence level.

Results on Table 8 show that the average sustainability reporting quality disclosure significantly differ among the seven sectors of the non-financial listed firms in Nigeria, at 1% significance level. When each of the four sustainability reporting disclosures dimensions are considered, results show that the Governance dimension, Table 9, Economic dimension, Table 10, Environmental dimension, Table 11 and Social dimension, Table 12, show that sustainability quality disclosures for the four dimensions statistically differ across the seven sectors of the non-financial listed firms in Nigeria, at 1% confidence level.

These results agree with the findings of Haniffa and Cook (2005), Reverte (2009), Hartikayanti et al (2016) that concluded that Industry type affect the level of sustainability reporting by firms. However, the finding is contrary to the results obtained by Tagersson et al (2009), Hadayah et al (2019) and Ariyani and Hartomo (2018).

The result is in line with Legitimacy theory that posits that, firms, to legitimatise their operations tend to provide information on their environmental practices to convince the society that they are complying with the social contract with the society.

## 5.0 Conclusion and recommendations

From the study results, it is concluded that sustainability disclosures vary among industry groups in Nigeria. Firms operating in industries such as oil and gas, industrial, manufacturing firms under consumer goods, etc., affect the environment and their employees and customer's safety and health more than firms in consumer services, ICT, etc., industries.

It is therefore, recommended that governments and government agencies, both at the federal and state levels, should continuously enforce environmental, health and safety laws with appropriate sanctions for any breach.

## References

- Aggarwal, P. & Singh, A. J. (2019). CSR and sustainability reporting practices in India: an in-depth content analysis of top-listed companies. *Social Responsibility Journal*, 15(8): 1033-1053. <https://doi.org.10.1108/SRJ-03-2018-0078>
- Akanno, S. N., Che, F., Radda, A. & Uzodinma, I. (2015). Patterns of corporate social and environmental disclosure in Nigeria. *International Journal of Business and Financial Management Research*, 3, 71-82
- Antara, D. M. D., Asri Dwija Putri, I G.A.M., Ratnadi. N. M. D. & Wirawati, N. G. P. (2020). Effect of Firm Size, Leverage, and Environmental Performance on Sustainability Reporting. *American Journal of Humanities and Social Sciences Research*, 4(1), 40-46.
- Ariyani, A. P., & Hartomo, O. D. (2018). Analysis Of Key Factors Affecting The Reporting Disclosure Indexes Of Sustainability Reporting In Indonesia. *International Journal of Business, Economic and Law*, 16(1), 15–25.
- Asaolu, T. O., Agboola, A. A., Ayoola, T. J., & Salawu, M. K. (2011). Sustainability reporting in the Nigerian oil and gas sector. In *Environmental Management Conference*, Federal University of Agriculture, Abeokuta, Nigeria, 12-15 September 2011, 1-24. <http://scholar.oauife.edu.ng>.

- Brammer, S., & Pavelin, S. (2006). Voluntary environmental disclosures by large UK companies. *Journal of Business Finance and Accounting*, 33(7–8), 1168–1188.
- Brammer, S., & Pavelin, S. (2008). Factors influencing the quality of corporate environmental disclosure. *Business Strategy and The Environment*, 17(2), 120–136.
- Brusca, I., Labrador, M., & Larran, M. (2018). The challenge of sustainability and integrated reporting at universities: A case study. *Journal of Cleaner Production*, 188, 347–354.
- Campbell, D., Craven, B., & Shrides, P. (2003). Voluntary social reporting in three FTSE sectors: A comment on perception and legitimacy. *Accounting, Auditing and Accountability Journal*, 16(4), 558–581.
- Cho, C. H., & Patten, D. M. (2007). The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organizations and Society*, 32(7), 639–647.
- Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society*, 33(4), 303–327.
- Cormier, D., & Magnan, M. (2003). Environmental reporting management: a continental European perspective. *Journal of Accounting and Public Policy*, 22(1), 43–62.
- Crawford, E. & Williams, C. (2010). Should corporate social reporting be voluntary or mandatory? Evidence from the banking sector in France and the United States. *Corporate governance*, 10(4), 512–526.
- da Silva Monteiro, S. M., & Aibar-Guzmán, B. (2010). Determinants of environmental disclosure in the annual reports of large companies operating in Portugal. *Corporate Social Responsibility and Environmental Management*, 17(4), 185–204.
- Deegan, C. & Gordon, B. (1996). A study of the environmental disclosure practices of Australian corporations. *Accounting and Business Research*, 26(3), 187–199.
- Deegan, C. & Rankin, M. (1997). The materiality of environmental information to users of annual reports. *Accounting, Auditing & Accountability Journal*, 10(4), 562–583.
- Freeman, R. & Reed, D. (1983). Stockholders and stakeholders: A new perspective on corporate governance. *California Management Review*, 25(3), 88–106.
- Freeman, R. (2010). *Strategic management: A stakeholder approach*. Cambridge, Melbourne: Cambridge University Press.
- GRI- Global Reporting Initiative (2016). *Sustainability Reporting Standards*. <http://www.globalreporting.org>.
- Hackston, D., & Milne, M.J. (1996). Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, Auditing & Accountability Journal*, 9(1), 77–108.
- Haniffa, R. dan & Cooke, T. E. (2005). The impact of culture and governance on corporate social reporting. *Journal of Accounting and Public Policy*, 24, (5), 391–430.

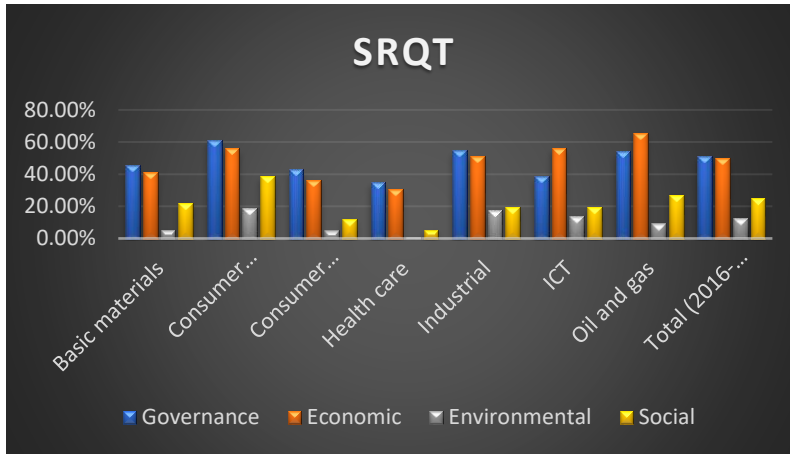
- Hartikayanti, H. N., Trisyardi, M. R. & Saptono, E. R. B.(2016). Effect of Corporate Characteristics on Environmental Disclosure. *International Journal of Applied Business and Economic Research*, 14(10), 6111-6134.
- Herbert, W. E., Nwaorgu, I. A., Onyilo, F. & Iorombagah, J. A. (2020). Sustainability reporting and performance of listed upstream oil and gas firms in Nigeria: A content evaluation approach. *International Journal of Applied Economics, Finance and Accounting*, 8(1), 46-61.  
<https://doi.org.10.33094/8.2017.2020.81.46.61>
- Hidayah, N. Badawi, A. & Nugroho, L. (2019). Factors affecting the disclosure of sustainability reporting. *International Journal of Commerce and Finance*, 5(2), 219-229.
- Ho, L.-C. J., & Taylor, M. E. (2007). An empirical analysis of triple bottom-line reporting and its determinants: evidence from the United States and Japan. *Journal of International Financial Management and Accounting*, 18(2), 123– 150.
- Janicka, M.& Sajnóg, A. (2022). The ESG Reporting of EU Public Companies. Does the Company’s Capitalisation Matter? *Sustainability*, 14(4279). <https://doi.org/10.3390/su14074279>
- Lambrechts, W., Son-Turan, S., Reis, L., & Semeijn, J. (2019). Lean, Green and Clean? Sustainability Reporting in the Logistics Sector. *Logistics*, 1-23.
- Madugba, J. U., Ben-Caleb, E., Agburuga, T. U. Ani, W. C., Jegede, S. L. & Fadoju, S. O. (2021). Environmental reporting and sustainability reports in oil companies in Nigeria. *International Journal of Financial Research*,12(1), 310-318:  
<https://doi.org/10.5430/ijfr.v12n1p310>
- Mahmood, A. (1999). The impact of market characteristics on the comprehensiveness of disclosure in financial reports: An empirical study. *The Journal of Commercial Researches*, 13(1), 47.
- Matakanye, R.M.; van der Poll, H.M.& Muchara, B. (2021). Do Companies in Different Industries Respond Differently to Stakeholders’ Pressures When Prioritising Environmental, Social and Governance Sustainability Performance? *Sustainability*, 13(12022). <https://doi.org/10.3390/su132112022>
- Meutia, I., Mukhtaruddin, S. Y. & Faisal, M. (2017). Ceo’s experience, foreign ownership and corporate social responsibility: A case of manufacturing companies. *Corporate Ownership & Control*, 14(3-2).
- Michelon, G., & Parbonetti, A. (2012). The Effect of Corporate Governance on Sustainability Disclosure. *Journal of Management and Governance*, 16, 1-33.
- Nobanee, H. & Ellili, N. (2015). Corporate sustainability disclosure in annual reports: Evidence from UAE banks: Islamic versus conventional. *Renewable and Sustainable Energy Reviews*, 55, 1336-1341.  
<http://doi.org/10.1016/j.rser.2015.07.084>
- Gamerschlag, R., Möller, K., & Verbeeten, F. (2010). Determinants of voluntary CSR disclosure: empirical evidence from Germany. *Review of Managerial Science*, 5 (2), 233–262. <https://doi.org/10.1007/s11846-010-0052-3>
- Jenkins, H. 2006. Small Business Champions for Corporate Social Responsibility. *Journal of Business Ethics*, 67 (3), 241–56. <https://doi.org/10.1007/s10551-006-9182-6>.

- O'Donovan, G. (2002). Environmental disclosures in the annual report: Extending the applicability and predictive power of legitimacy theory. *Accounting, Auditing & Accountability Journal*, 15(3), 344-371.
- Owolabi, F., Adetula D., Akinwumi, T. & Uwuigbe, U. (2016). Assessment of sustainability reporting in Nigerian industrial goods sector. *3rd International Conference on African Development Issues (CU-ICADI 2016)*.
- Ralph, M., & Stubbs, W. (2014). Integrating environmental sustainability into universities. *High Education*, 67, 71–90.
- Reverte, C. (2009). Determinants of corporate social responsibility disclosure ratings by Spanish listed firms. *Journal of Business Ethics*, 88(2), 351-366.
- Roberts, R. (1992). Determinants of corporate social responsibility disclosure: An application of stakeholder theory. *Accounting, Organizations and Society*, 17(6), 595-612.
- Roca, L. C., & Searcy, C. (2012). An Analysis of Indicators Disclosed in Corporate Sustainability Reports. *Journal of Cleaner Production*, 20, 103-118.  
<http://dx.doi.org/10.1016/j.jclepro.2011.08.002>
- Svensson, G., Wood, G., Singh, J., & Callaghan, M. (2009). Implementation, communication and benefits of corporate codes of ethics: an international and longitudinal approach for Australia, Canada and Sweden. *Business Ethics: A European Review*, 1 (4), 389–407. <https://doi.org/10.1111/j.1467-8608.2009.01571.x>
- Taggersson, T., Blank, V., Broberg, P., & Collin, S.-O. (2009). What explains the extent and content of social and environmental disclosures on corporate websites: A study of social and environmental reporting in Swedish Listed Corporations. *Corporate Social Responsibility and Environmental Management*, 16, 352-364.  
<http://doi:10.1002/csr.194>.
- Zeng, S. X., Xu, X. D., Yin, H. T., & Tam, C. M. (2012). Factors that drive Chinese listed companies in voluntary disclosure of environmental information. *Journal of Business Ethics*, 109(3), 309-321.

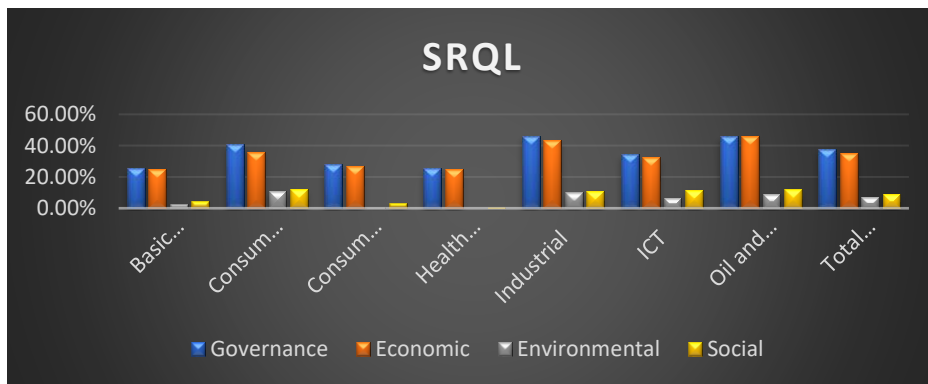


### Appendix 1

### Graphs of Sustainability Quantity and Quality Disclosures by the Seven Sectors



**Figure 1: Sustainability Quantity Disclosures by the Seven Sectors of non-Financial Listed Firms**



**Figure 2: Sustainability Quality Disclosures by the Seven Sectors of non-Financial Listed Firms**