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# Science and Technology Reportage in Selected Nigerian Newspapers: A Study of *Punch, The Guardian* and *Vanguard*

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**Abstract**

Science and technology have become one of the most important aspects of human society given the level of impacts in human interaction as well as work. Likewise, in their role as agenda-setting organs, it is expected of newspapers to attribute importance to issues through their coverage of such issues as science and technology. Hence, the main objective of this study was to investigate how the select Nigerian newspapers (*Punch, The Guardian* and *Vanguard*) provided coverage of science and technology issues in their reportage between December 2021 and May 2022. The

researchers also set out to determine the level of coverage given to science and technology news by the newspapers; to ascertain the story types (genres) used in reporting science and technology by the newspapers; and identify the sources of science and technology news in the select newspapers. This study adopted quantitative content analysis approach, using agenda-setting theory as its theoretical framework. This study found, among others, that the level of coverage of the issue of discourse was low. Again, different story types were used, but the news genre was mostly applied while major sources of science and technology news were private companies and foreign media. In the vein of these findings, the researchers recommended that Nigeria's newspapers should increase their coverage of science and technology stories. Also, features and opinion articles (by specialists in the field of science and technology) should be used to explain how most science and technology equipment function, and can be utilised.

**Keywords:** Coverage, Innovations, Newspaper reportage, Science, Technology.

**Introduction**

We live in a techno-scientific world where science and technology assume a focal point in the lives of citizens. Citing the National Science and Technology Centre, Australia, Batta, Ekanem and Udousoro (2014) state that science is not just functional – it helps to illuminate the world in new and unexpected ways. Matyek and Toholde (2019) claim that science and technology span the theoretical fundamentals of biology, physics, chemistry, mathematics and metamorphoses into applied science like electronics, engineering, robotics, computer science, mechatronics, bio-engineering, space technology and nanotechnology among others. These, according to Matyek and Toholde (2019), are all essential human advancements used in the manufacturing, health, and agricultural sectors that propel the overall economy of a nation and in turn national development. Technology is so important that seven of the top ten in 2022 Forbes' World Richest Men list made their fortunes in technology. Reports by Forbes (2022) show the list thus:Elon Musk (Tesla, SpaceX), Bernard Arnault & family (LVMH), Jeff Bezos (Amazon), Gautam Adani & family (Infrastructure, commodities), Bill Gates (Microsoft), Larry Ellison (Software), Warren Buffett (Berkshire Hathaway), Mukesh Ambani (Diversified), Larry Page (Google) and Sergey Brin (Google).

From transportation and security to education and the rise in online learning and virtual conferences online learning in the wake of the pandemic, technology is rapidly transmuting every aspect of human life. The sacred fact is that technological and scientific innovations are changing the world daily, and continually there will be constant changes in the affairs of humans that it has become hard to predict what might happen next due to the dynamism of science and technology. Over the past years, easy-to-use tools, which have brought about seamlessness and the smoothing of the way people carry out their daily activities towards satisfaction have become the norm. Through science and technology, the work and lifestyle of the vast majority of people who have access to them have changed. Nguyen and Tran (2019) consider science and technology as a central part of international politics and policy since US President Harry Truman gave birth to the new post-war era of development in which development replaced the colonial concept of civilization as the dominant discourse for the West's influence on the rest of the world (p.1). As the mission to develop the world (namely to conquer poverty and solve the problems of under-development) was fuelled by optimism about the exhaustible science and technology capacity of the developed world, Naz (2006) posits that progress was accordingly expected to follow more or less automatically from the transfer of technology.

Today policymakers continue to see the globalization of science and technology as a crucial means to alter human behaviours for the sake of economic prosperity, better living standards and personal freedom (Naz, 2006). Science and technology continue to be key economic growth indicators for all countries in the global north and global south. The development of the science and technology sector of any developing nation has the propensity to transform it into a developed nation (Suener & Saridogan 2011; Lee-Roy, 2012). Not only should a nation desire technology transfer from first-world countries, but it should also desire to promote indigenous science and technology tailored to meet specific needs and goals of such a nation, hence Matyek and Toholde (2019) assert that: the quest for national growth and development by countries all over the world is predicated on their zeal to attain sustainable economic growth and development. Economic growth is tied to the Gross National Product and Human Development Index which has many indices summarized under a strong economy, a vibrant agricultural sector and the nurturing and sustenance of indigenous science and technology to meet the specific

technological needs of developing countries especially those in sub-Saharan Africa (p. 72)

To promote the national growth and development of countries, more reports by indigenous newspapers on science and technology becomes an imperative genre of journalism because it brings to the lime-light innovations in the science and technology world, and also promotes indigenous science and technology that can be exploited by individuals, corporate organisations and government agencies for national development (Matyek & Toholde, 2019). This may be the reason why Xie, Tang and Xie (2012) call for ethics in science and technology. The authors advocate for the adoption of standards or principles that the society and public use to appraise science and technology activity as right or wrong, and the awareness of considering science-tech activities. Nevertheless, scientists do not regard communication as an important part of their professional duty rather they see the job of bringing science to the mass as that of the media (Ndlovu, Joubert & Boshoff, 2016). The few who are conscious of public communication as a scientist's social responsibility often have heavy workloads and/or lack knowledge and skills to work effectively with journalists and audiences (Ndlovu et al., 2016). When they do get involved, another set of issues arise. Scientists often place themselves in a superior position to journalists. In light of the foregoing, Rashid (2020) avers that: media is the reflection of the society, and being the opinion maker of the society, it has the vital responsibility to educate and inculcate awareness in the masses about certain issues of the society. As a fourth pillar of the state, it is in the domain of the media to build a nation through dissemination of the information for the knowledge of the masses. Media reflects the society and reports what is happening in the society (pp. 2-3). The role of media in societal development is inevitable, hence the quest of this study to investigate the coverage of science and technology by *Punch, The Guardian* and *Vanguard* newspapers within the period covered by this research, which is between December 2021- May 2022.

One of the roles of science communicators is often to help make the hidden dimensions of issues more visible and better understood; enabling science to be seen in its social and cultural contexts, and facilitating conversations about its meaning and significance. The media all over the world, Nigerian media inclusive, particularly the print, have been involved in science communication. However, studies on newspaper coverage of science and technology issues are said to be burdened with problems

generally. Dunwoody (2008) writes about science news being overwhelmingly focused on biomedical topics, a coverage that follows journalistic rather than scientific norms, the accuracy of science news being a contested arena and the appropriate training for science journalists remaining a contentious topic. With information technology, new means of communication such as the Internet, mobile phones, etc. have been introduced using satellite transmission in addition to the existing ones. These advances in mobility, joined with inventions in the area of telecommunications technology, such as the telephone and radio, have served to broaden the range of human activities and expand the scope of human exchanges (Engwa, 2014). In the modern world, all countries try to excel in science and technology as through scientific development the way for economic prosperity thrives. Nigeria as a developing country requires proper government attention on science-tech development to strengthen its economy.

Given the above background, and having observed the dearth of studies on science and technology coverage by the Nigerian press, this study sets out to determine the extent to which science and technology issues are accorded a place in three Nigerian newspapers. This investigation is focused on the frequency of coverage, the story types, and to determine the sources of science and technology news stories covered by the select newspapers. The objectives of this study included: 1. To determine the level of coverage given to science and technology news by the select Nigerian newspapers. 2. To ascertain the story types (genres) used in reporting science and technology news by the select Nigerian newspapers. 3. To identify the sources of science and technology news in the select Nigerian newspapers.

**Theoretical Fortification**

This study is anchored in the Agenda-Setting Theory of communication which was propounded in 1972 by McCombs and Shaw. The theory explains that media provide information to the public and create import on such information. Nwabueze and Ejezieh (2019) claim that the more attention media outlets pay to a certain phenomenon, the more importance the public attribute to such an issue. Guanah, Dalung and Anho (2018) seem to hold a similar view and postulate that time and space constraints force the mass media to focus on few topics deemed newsworthy. Deciding on issues, persons and topics perceived as important and worth focusing on by the media is known as agenda-setting

role of the media. Relating that to this study, the knowledge of the importance of science and technology as segregated by the Nigerian newspapers reportage will keep the readers' understanding which will translate into the public being abreast of economic, social, political and environmental effects of the science-tech. This will in turn reflect in the overall input of science and technology in our national development. This theory is also relevant to this study because until the media raise a discourse around the issue of science and technology, most people will not give it a second thought. This fact is supported by Guanah (2014) who opines that, "…until the media are involved, no matter or issue revolves; every issue remains docile until the media choose to activate it and cause it to be matters of national discourse" (p.8).

**Conceptualization of Science and Technology interdependence**

Today, every industry is being disrupted by the changes that science and technology have brought to all aspects of human life. Nearly everything has been digitalized in the age of the Internet and technology, including audio, books, and even the Bible, which can be programmed to transmit messages or play at specified moments. For instance, the shift to digital technology, which largely ensures some level of security, represents the evolving globalisation environment as it relates to insecurity. According to Tamsons (2022), the digital revolution will also have an impact on human work since it will generate new positions that do not yet exist and improve working conditions by making them safer, more intelligent, and more creative. Also, as an alternative to the previous practice of solar panels only producing power when the sun is shining, there are now solar panels that can operate in the dark and be fuelled by rain. These developments could turn solar energy into a constant source of power, assisting in the global transition to net-zero emissions (Broom, 2022).

Recently, Data Scientists Network (formerly known as Data Science Nigeria, DSN) established a digital education access and delivery platform in Nigeria that aids parents and educators in preparing African children for the Fourth Industrial Revolution and the world of work. It created the "MacroTutor," an affordable, AI-powered, on-demand edtech solution for schools and parents to access the best teachers and digital learning content in specialised fields like coding, artificial intelligence, robotics, programming, machine learning, data analytics, interaction design, etc. (TechCabal, 2022). Courtesy of technology, the Federal Government of Nigeria is trying to digitize public service by the end of the

first quarter of 2023. Ibiene Roberts, the Ministry of Special Duties and Intergovernmental Affairs' Permanent Secretary, is cited in NaijaBlitzNews (2022) as saying that the creation of Standard Operation Procedures (SOP) is a component of Enterprise Content Management (ECM), which has the goal of digitising records and automating workflow to improve information sharing and collaboration among Ministries, Departments, and Agencies (MDAs).

In keeping with technological development, Cho Jae-weon, a professor of urban and environmental engineering at the Ulsan National Institute of Science and Technology (UNIST) in South Korea, has created a biogas and manure-producing toilet that is connected to a lab. The BeeVi toilet, a combination of the terms "bee" and "vision," employs a vacuum pump to transfer waste into an underground tank, saving water (Onikewide.com, 2022). There, the waste is broken down by microorganisms into methane, which the building uses to power a gas stove, a hot-water boiler, and a solid oxide fuel cell. Cho Jae-weon also devised a virtual currency called Ggool (which means honey in Korean), and each person using the eco-friendly toilet earns 10 Ggool a day. The relationship between science and technology is intertwine. Brooks (1994) suggests that the public may be forgiven its confusions, as indeed the relationships between science and technology are very complex, though interactive, and are often different in different fields and at different phases of a technological life cycle. Rashid (2020) notes that:

> Science and technology have a leading impact on society which is increasing day by day. Now human life is completely changing, all segments and walks of life have radically changed. If we see ways of communication, our working styles and different ways of performing our works, our residences, what we wear, what we eat, how we transport and the quality and extent of our lives, science has drastically changed the moral standards, ethical values and basic beliefs of mankind. (p. 2)

Citing Nelson, Brooks (1994) defined technology both as specific designs and practices and as generic knowledge that provides understanding of how things work. It is important to note that technology is not just things, but also embodies a degree of generic understanding, which makes it seem more like science, and yet it is understanding that relates to a specific artifact, which distinguishes it from normal scientific

understanding, although there may be a close correspondence. Kiyici and Kiyici (2007) are of the view that scientific information and new developments influence human lives making every human endeavour systematic. These developments in science and technology lead to educating literate individuals in terms of science and technology, or individuals who can think creatively and deliver their ideas freely. Anaeto, Asiabaka, Ani, Nnadi, Ugwoke, Asiabaka, Anaeto, and Ihekeronye (2016) believe that science and technology hold the key to the present and future development of Nigeria or any other country. Kiyici and Kiyici (2007) agree that technology plays a fundamental role in wealth creation, improvement of the quality of life and real economic growth and transformation in any society. Thus, developments in science and technology influence our lives in a gradually increasing way, which leads society to equip future generations with working knowledge of science and technology issues.

Engwa (2014) opines that today, because of the advancement in science, almost all recent technologies have a scientific background. When a new technology is discovered, it needs to be made available to the society. This process of providing a technology or its product to the masses, according to Intute (2007, as cited in Engwa, 2014), is known as engineering; engineering is the goal-oriented process of designing and making tools and systems to exploit natural phenomena for practical human use, often deploying results and techniques from science (p. 18). The fundamental objective of developing a technology is to provide good or services that will meet the demands or improve on the needs of the society, hence development. This implies that for development to be achieved there must be some inputs that will have a positive impact or changes to improve the well-being of man, some of such inputs are applied science and technology. Thus science, technology and development are symbiotic in their relationship as they are interdependent on each other. Rashid (2020) citing Wajeha (2012) further elaborates that the scientific advancements and development is nonetheless a great human revolution which has influenced every segment of the society and sphere of life. A man of previous centuries could hardly think or imagine the life which we are actually living (p. 2).

Similarly, Anaeto et al. (2016) agree that science as a branch of knowledge is concerned with the observation and classification of facts and formulation of general truth. Science suggests ideas and technology provides the basis for the applicability of such ideas; science clarifies and

justifies how an objective may be achieved. The "how" is translated into practical realization and from there, technology takes over and complements science (Williams, 1998). This therefore in the view of Anaeto et al. (2016) indicates that there is a symbolic relationship between science and technology in which science as a systematic search for truth provides the basis for technology. Without technology, science becomes impotent, and without science, technology does not exist. However, it is the technology (the application of techniques) and not science that leads to increase in production. In the past, science and technology constituted distinct traditions, maintaining separate identity paths of process and activities. But around the 19th century, there was a development of closer relationship between the two. The narrowing of that gap of separate identities culminated in the birth of the concept of science and technology (Anaeto et al., 2016, p. 39). Engwa (2014) provides further boost to the above in his postulation. The author seems to agree with the above when he opines that sometimes, the terms, science and technology are interchangeably used in normal day life to describe certain activities simply because they are interdependent on each other

**Empirical Review of Literature**

Petersen, Seear, and Bowman (2010) studied the views of key stakeholders in Australia and note that while the popular press has roles to play in the conveyance of information to the public, the majority of the respondents noted that the media were only part of the many avenues that should be utilised to provide the public with information about nano-technology. Additionally, the European Union (2010) in its Code of Conduct for responsible nano-research outlined a set of principles for stakeholders to respect. These deal with meaning, sustainability, precaution, inclusiveness, excellence, innovation and accountability. Those who communicate nano-science and nano-technology including science journalists would do well to study those principles and adapt them to their work. A fitting conclusion to this section and harping on the need for effectively communicating nano-scale science and engineering concepts may be captured in the words of Castellini, Wadejko., Holladay, Theim, Zenner and Crone (2007), "engaging the public in conversations about nano-technology research can be valuable and rewarding experience for both researchers and their audience. Not only will it bolster public science literacy, and understanding of nanotechnology, but it will also pave the

way for more favourable public policy on nano-technology-related issues" (p.188 ).

A team of researchers sponsored by UNESCO (2011), led by George Lugalambi of the Makerere University, Uganda and conducted a study on the coverage of science and technology in Africa. The study did a content analysis of newspapers in Cameroon, Ghana, Kenya, Namibia, South Africa, and Uganda. Results of the study showed that about 85 percent of the articles were in the news category while 15 percent were features. Again, 69 percent of the stories were written by local journalists and 6 percent by foreign writers. As to the origin of the stories, 68 percent originated locally while 25 percent and 6 percent had foreign and mixed origins respectively. Other findings were that 45 percent of the stories were attributed to local sources; 30 percent to foreign sources and 25 percent mixed sources. Also, 40 percent of the stories had male sources while 9 percent featured female sources. The study recommended among others a close working relationship with training institutions to introduce science curricula as a way of improving the understanding of science and technology which will enhance the newspaper coverage.

Groboljsek and Mali (2012) sought to explore the ways national newspapers in Slovenia cover issues on nano-technology, and how scientists in the field of nano-technology in Slovenia perceive media coverage of the issues. The authors conducted a content analysis of articles in three key Slovenian newspapers from 2004 to 2009. Based on their findings, the authors concluded that nano-technology is poorly presented in Slovenian newspapers. A significant proportion of articles were identified in science section coverage, but in general, the articles were dispersed across different sections of the newspapers and merely emphasised positive aspects of nano-technology. Yet, the overall impression was that news concerning this area received an insufficient amount of media attention. On the perceptions of media reporting of nano-technology, the authors state that the respondents' views indicate considerable dissatisfaction with the level and quality of media reporting. The rationale for this state of affairs is that nano-technology seems to be a novelty, partly because this emerging technology is significantly converging with other research fields.

Peters (2013) studied the gap between science and media. He noted that, the relationship between science and the public or between science and the media has been characterised by terms such as distance, gap, barrier, fence, etc. The study noted among others, that researchers

from the humanities and social sciences tend to have more interactions with the media than those from the sciences. It is true as seen above that scientists, the media and the public are key elements in science communication. Batta, Ekanem and Udousoro (2014) in their study, Techno-scientific temper of three Nigerian newspapers (*The Guardian, Leadership,* and *Daily Trust),* opined that the culture of science and science communication in Nigeria are deemed as fragile compelling researchers to interrogate how newspapers contribute in creating awareness and knowledge of techno-science matters. The study examined the character and extent of techno-science coverage in three select Nigerian newspapers to determine the frequency of coverage, the orientation of the reports, genre or formats of reporting, sourcing of information and depth of reportage. The study was hinged on the Agenda-Setting Theory while the research method was a content analysis of 156 issues of newspapers for the year 2012. The findings among others show that out of the 329 techno-science stories captured in the study, biomedicine was the most frequently reported topic at 26.44 percent.

The study recommended that for the analysed newspapers to set meaningful agenda on techno-science in Nigeria, they need to broaden their scope of coverage beyond biomedicine and the news format of presentation; deepen the discourse/content of techno-science information by becoming more deliberative; consolidate routine science coverage as well as pay more attention to local sourcing of techno-science information. Toholde and Matyek (2019) assessed the reportage of technology startups in *Leadership* online, *Vanguard* online and *Thisday* online. The authors agreed that science and technology reporting has been an important genre of journalism because it brings to the limelight innovations in the science and technology world and also promotes indigenous science and technology that can be exploited by individuals, corporate organisations and government agencies for national development. The main objective of the study was to investigate the reportage of technology startups by online versions of three Nigerian newspapers (*Leadership, Vanguard and Thisday).* The study was anchored on Modernization theory while website content analysis was adopted as the methodology. Findings showed that out of a total of 129,857 reports by the three newspapers, 185 reports in 2018 publications were about technology startups. Among others, the study recommended that the Nigerian newspapers should dedicate more space for reports on technology startups.

**Methodology**

The study adopted content analysis as research design. It was used to examine the reportage of science and technology in *Punch, The Guardian* and *Vanguard* newspapers. According to Tipaldo (2013), content analysis refers to a family of techniques for studying the "mute evidence" of texts and artefacts, including oral text, such as speech and theatrical performance, audio-visual text, such as television programmes, movies, and videos It is given the elasticity, robustness and promise that content analysis holds as a methodological approach. The *Punch, The Guardian* and *Vanguard* newspapers were purposively selected for this study because they enjoy wide readership, they have editorial independence, and because of their high circulation rate in Nigeria.The population of this study is made up of the 546 copies of the newspapers published between December 2021 and May 2022, a period of six months. Within this period, each of these newspapers published 182 editions. The composite sampling technique was employed to avoid any pitfalls that may arise from the use of the continuous week technique. Six months of study were constructed to yield 6 weeks or 42 days in which the selected editions were studied. This period multiplied by 3 (newspapers) yielded 18 weeks or 126 days. The table of constructed weeks is shown below.

| **Week 1** | **Week 2** | **Week 3** |
|---|---|---|
| Day Date | Day Date | Day Date |
| Sunday 28/12/21 | Sunday 17/1/22 | Sunday 22/2/22 |
| Monday 7/12/21 | Monday 4/1/22 | Monday 23/2/22 |
| Tuesday 15/12/21 | Tuesday 26/1/22 | Tuesday 3/2/22 |
| Wednesday 9/12/21 | Wednesday 20/1/22 | Wednesday 18/2/22 |
| Thursday 3/12/21 | Thursday 28/1/22 | Thursday 26/2/22 |
| Friday 11/12/21 | Friday 1/1/22 | Friday 13//2/22 |
| Saturday 19/12/21 | Saturday 16/1/22 | Saturday 21/2/22 |

| **Week 4** | **Week 5** | **Week 6** |
|---|---|---|
| Day Date | Day Date | Day Date |
| Sunday 28/3/22 | Sunday 17/4/22 | Sunday 22/5/22 |
| Monday 7//3/22 | Monday 4/1422 | Monday 23/522 |
| Tuesday 15//3/22 | Tuesday 26/4/22 | Tuesday 3/5/22 |
| Wednesday 9//3/22 | Wednesday 20/4/22 | Wednesday 18/5/22 |
| Thursday 3//3/22 | Thursday 28/4/22 | Thursday 26/5/22 |
| Friday 11//3/22 | Friday 1/4/22 | Friday 13//5/22 |
| Saturday 19/3/22 | Saturday 16/1422 | Saturday 21/5/22 |

The instruments of data collection were the coding sheet and coding guide. The validity of the instrument was ascertained by two lecturers from Department of Mass Communication, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State, Nigeria. The researchers determined the reliability of the study with the use of two coders who were randomly selected to do the coding. The units of analysis were straight news, features, opinion column and cartoon. The content categories include the level of coverage, story genres and the sources of science and technology news.

**Data Presentation and Analysis**

**Table 1:** Level of coverage given to science and technology news by the select newspapers

| Newspapers | No. of Stories | Percentage |
|---|---|---|
| **The *Punch*** | 76 | 31.28 |
| ***The Guardian*** | 62 | 25.51 |
| ***Vanguard*** | 105 | 43.21 |
| | **243** | **100** |

**Source:** Content Analysis, 2022

From this table, the newspapers had their monthly coverage of science and technology stories thus: The *Punch* (December 2021- 5, January 2022-0; February 2022- 11; March 2022- 38; April- 19; May 2022- 3); *The Guardian ((*December 2021- 5, January 2022-18; February 2022- 19; March 2022- 9; April- 0; May 2022- 11), and *Vanguard* ((December 2021- 9, January 2022-1; February 2022- 29; March 2022- 33; April- 5; May 2022- 26). The information in this table implies that the three newspapers had an average of only 40 stories on science and technology in the entire six months under study.

**Table 2:** Story types (genres) used in reporting science and technology news by the select newspapers

| Type of stories | The Punch | The Guardian | Vanguard | Total |
|---|---|---|---|---|
| News Stories | 31 (27.68%) | 24 (21.43%) | 57 (50.89%) | 112(46.09%) |
| Features | 11 (30.56%) | 11 (30.56%) | 14 (38.88%) | 36 (14.81%) |
| Opinion/Columns | 3 (30%) | 2 (20%) | 5 (50%) | 10 (4.12%) |
| Advertisement | 2 (66.67%) | 1 (33.33%) | 0 (0 %) | 3(1.24%) |
| Editorial | 1 (100%) | 0 (0%) | 0 (0%) | 1 (0.41%) |
| Photographs | 28 (34.57%) | 24 (29.63%) | 29 (35.80%) | 81 (33.33%) |
| **Total** | **76** | **62** | **105** | **243 (100%)** |

**Source:** Content Analysis, 2022.

Table 2 showed that the 'news story' genre was the most used to report science and technology stories while Editorial was the least used. The data in the above table imply that most other story types that would have helped to give more details about science and technology were not utilised by the newspapers.

**Table 3:** Sources of science and technology news in the select newspapers

| Type of stories | The Punch | The Guardian | Vanguard | Total |
|---|---|---|---|---|
| Ministry of Sc. & Tech. | 7 (17.95%) | 11 (28.21%) | 21 (%) | 39(16.05%) |
| Foreign Media | 20 (40%) | 13 (26%) | 17 (34%) | 50(20.58%) |
| Experts in Sc. & Tech. | 9 (20.93%) | 14 (32.56%) | 20 (46.51%) | 43 (17.69%) |
| Private Companies | 37 (36.63%) | 22 (21.78%) | 42(41.59%) | 101 (41.56%) |
| Columnists/ Opinions | 3 (30%) | 2 (20%) | 5 (50%) | 10 (4.12%) |
| **Total** | **76** | **62** | **105** | **243 (100%)** |

**Source:** Content Analysis, 2022.

Table 3 showed that the highest sources of news about science and technology are private companies, and not from the Ministry of Science and Technology whose primary function is to promote everything about science and technology as it relates to Nigeria. The inference is that private companies are spearheading the publicity of their products while the Ministry of Science and Technology is not doing much about publicising what is happening in the science and technology sector of Nigeria.

**Discussion of findings**

The first finding from this study revealed that a low level of coverage was given to science and technology news by the select Nigerian newspapers. For instance, in January and April 2022, *The Punch* and *The Guardian* newspapers had no single story on science and technology. This grossly inadequate coverage may be one of the reasons why scientists are taking it upon themselves to communicate about science with lay people (Reddy, 2009; Cicerone, 2010). Citing authorities (Hartz & Chappell, 1997; Suleski & Ibaraki, 2010), Pinto, Marçal and Vaz (2013) point out that this may be further justified by dissatisfaction with how journalists convey science to the public, or by the fact that a very low percentage of scientific journal articles receive coverage by the mass media. The media have the

responsibility to inform, educate, raise awareness, shape perception and opinion, and act as an advocate to shape public policy and societal decision-making for individuals, groups, and society. To do this, the media must draw attention to, give priority to, and set the agenda on a variety of topics, including science and technology. The media are the bridges between the society and ignorance because they disseminate knowledge that wipes out ignorance on issues, and empowers the public to make and take wise decisions on varied matters.

Further finding also revealed that, though, different story types were used, but the news genre was the mostly applied type. With this outcome, there is no way much can be known about science and technology, because, usually, news story type only gives a summary of an invent, without giving enough details. Using other news reporting format like the editorial would have laid more credence to the importance the newspapers attach to science and technology. An editorial shows a media's outfit's stand on important issues. However, that was not the case of the select newspapers that were analysed. Throughout this study (six months), there was only one editorial entitled "Improving voter technology ahead of 2023 elections" in *The Punch* newspaper of March 1, 2022. Likewise, the Feature (14. 81%) and Opinion/Column (4.12%) news type genres were sparsely used by the newspapers. Genres like these would have allowed experts who have a basic understanding of science and technology to properly educate the public about the current natures of digital technology and their possible trajectories in ways that are grounded in a deep appreciation for human and their usefulness to the society.

When it comes to analysing the major functions of the media (information, education, and entertainment), the key function the 'news story' genre performs is that of information delivery whereas, other genres like features and opinion articles function better in educating the public while photographs and advertising, even though they also inform and educate, likewise function best in their entertainment roles. The cardinal function of the media is to give the public correct, adequate and comprehensive reports about the goings on in the society, especially in their immediate environment. This should be done with the different news story types available since the heterogeneous public has a flare for different genres, and understands issues better when news items and stories are presented in the format they can align with. Additionally, this study found that the select newspapers gleaned most of their stories from

private companies (41.56%) and foreign media (20.58%). They sourced other news stories on science and technology from experts in science and technology (17.69%), Ministry of Science and Technology (16. 05%), and from Columnists and opinion article (4.12).

The low figure from experts in Science and Technology and the Ministry of Science and Technology that should be the main drivers of anything that has to do with science and technology is quite discouraging. This denies the public from benefiting from expertise information that may not be so easily available elsewhere. Hence, Appiah, Gastel and Burdine (2012) and Bauer, Yulye, Ramos, Massarani, Amorim and Howard (2013) assert that journalists lament insufficient support and cooperation from the science community, and find it hard to keep in touch with local science institutions to follow, monitor and report on new science developments. The advancement in the invention and usage of science and technology products in developed countries, and their continual coverage and reportage by foreign media may be the reason most of the select newspapers of this study sourced their science and technology stories (20.58%) from them.

**Conclusion**

The import of this study is that it provides robust understanding and appreciation of the state of science and technology in Nigeria as it relates to their coverage by newspapers, particularly for those who are not familiar with techno-scientific communication. The newspapers' adiabatic approach to the coverage of science and technology stories is not in any way encouraging. This is more so since the media symbolize society's creative force that is expected to furnish and feed the public with information about happenings around the world. The public depends on them to interpret as well as explain the technicalities that have to do with things like science and technology in a simple form for them to comprehend. In the vein of the findings of this study, the researchers recommended that: i. Nigeria's newspapers should increase their coverage of science and technology stories, ii. furthermore, outside the news story type genre, feature and opinion articles (by specialists in the field of science and technology) should be used to explain how most science and technology equipment function, and can be utilized; and iii. the ministry of science and technology should ensure that current information about the developments going on in the ministry is regularly made available to the public through the media, especially newspapers.

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