



Assessment of Digital Communication Technologies (DCTS) in Newspaper Publishing in Nigeria

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Abstract

This study evaluates the impact of DCTs on newspaper publishing within selected Nigerian newspapers. It focuses on four newspapers, two publicly owned and two privately owned. The research utilizes a mixed methods approach, combining qualitative and quantitative methodologies. In response to the investigation on the forms of DCTs used in Nigerian newspaper publishing, findings reveal a spectrum of technologies employed, notably e-mail, phone calls, instant messaging, video conferencing, video, blog, podcast, streaming, e-newspaper, and web newspaper. The prevalence of e-newspapers stands out prominently among the identified forms. Interview responses align with the questionnaire findings, emphasizing the diverse use of DCTs. Examples include the shift to online-based platforms, preference for e-copies, and the facilitation of news gathering and dissemination through digital channels. Regarding the areas of DCT usage within newspaper organizations, the study identifies newsgathering, news processing, and news dissemination as primary domains. Notably, news dissemination emerges as the predominant area benefiting from DCTs. Interview insights reinforce the significance of DCTs across these areas, enabling easy access to online news sources, facilitating information sourcing, and transforming the production process through enhanced aesthetics and design. The study concludes that the relevance of DCTs in Nigerian newspaper publishing cannot be over-underscored. While certain forms of DCTs like e-newspapers are extensively utilized, others remain underutilized. News dissemination sees the most pronounced impact, while opportunities for improvement exist in newsgathering and processing. The study recommends among other things that Newspaper Proprietors' Association (NPAN) should encourage broader utilization of various DCTs in newspaper publishing.

Keywords: Digital Communication Technologies (DCTs), Newspaper Publishing, Nigeria, Media Technology,

Introduction

The popularity of the new media, notably the Digital Communication Technologies (DCTs) carries a lot of promises and poses a lot of challenges to the traditional newspaper. Kraidy (2004) observes that DCTs are seen as the bearer of enormous hopes and deeply seated fears. According to Mitchell (as cited in Sepastein, 2014) thinking of the way people use the digital space and thinking of the way content functions in the digital space have been a challenge for the newspaper industry because that is not what they are grounded in. Mitchell further states that declining revenue coupled with low readership also constituted major challenges for the newspaper industry; thus, forcing it to refocus on how best to utilize the web to revive itself. Additionally, the advent of DCTs has resulted in rapid growth of online news organizations. Newspapers are now accessed more online on mobile phones, computers, tablets, I pads and game consoles embedded with text, animations, pictures; audio and video clips thereby creating a cross media content delivery. Moreover, this development also provides comfortable and flexible options in information gathering,



processing, storage and distribution across multiple platforms for both the user and producer of information (Raj, 2013).

Communication throughout history has been an essential human need, crucial for societal bonds, education, and expressing emotions (Gallager, 2006). In the current era characterized by globalization, technological revolution, and democratization, media and communication hold pivotal roles (Kaul, 2012, p.114). Digital communication technologies (DCTs) have become a critical facet of human life, marking a significant revolution in the 21st century (Nguyen, 2017). DCTs encompass various electronic mediums facilitating the exchange of information, including computer, telecommunication, audio, visual, and consumer electronic gadgets. Digital communication covers any form of communication using technology (Kaul, 2012). It involves the transfer of discrete messages over communication channels. Infrastructure supporting digital communications and information systems includes cable networks, mobile and wireless networks, and data storage and processing centers (Oughton, Tran, Jones & Ebrahimi, 2018). In Nigeria, DCTs have substantially impacted newspaper production, altering information realms significantly more than other industries (Ezugwu, 2011). The industry has embraced digitalization across its functional wings, aiming for competitive advantages. Newspaper publishing has evolved, with the advent of 'new media' altering the landscape dominated by radio, TV networks, magazines, and newspapers, significantly influencing societal information consumption (Randall, 2000). The role of newspapers is to disseminate fresh, honest, and balanced information on various public interest matters. Technological advancements directly correlate with changes in journalism, transforming news presentation into contemporary online formats (Hernandez & Rue, 2015). Digital packages, computer usage, and changing practices signify the impact of technology on journalistic methods (Usher, 2016).

In Nigeria, the rise of new media is linked to the telecommunication revolution initiated by the Nigerian Communications Commission (NCC) (Emerah, Oyedele & David, 2013). The deregulation of the telecommunications sector led to phenomenal growth in telephone and internet penetration. Nigerian newspapers now maintain online versions, breaking news and leveraging social media for quick dissemination. These platforms facilitate convergence, combining video, text, and graphics for enhanced storytelling (Ani, 2015). DCTs encompass diverse forms, including internet, email, and social media, fundamentally changing communication dynamics (Sarokin, 2015; Davis, Deil, Rios & Canche, 2014). Social media, in particular, has revolutionized individual and organizational activities (Statista, 2017), notably impacting marketing practices. In newspaper publishing, DCTs have permeated every stage of production, from news gathering to dissemination. Email serves as a quick and efficient tool for communication and distribution, while cellphones have replaced traditional tools for news collection (Dayo & Chioma, 2012). Empirical studies reveal the positive impact of new technologies on journalism in Nigeria and Ghana (Ani, 2018; Zangana, 2017). These studies highlight improvements in newspaper quality, efficiency, and workplace dynamics due to technological integration.

Given the above review, it is clear that DCTs have affected the entire system of newspaper publishing in Nigeria. Information is the primary input as well as the final output of the newspaper industry. Therefore, it will not be an exaggeration to say that the radical changes brought in the realm of information through DCTs revolution are bound to affect the newspaper more than any other industry (Ezugwu, 2011). Against this background, one can therefore consider the Nigerian newspaper industry as one whose peculiar experience needs to be investigated vis-à-vis the effects of DCTs on its publishing processes. Therefore, this study seeks to assess the extent to which DCTs are used in newspaper publishing in Nigeria.

Objectives of the Study

Accordingly, the following objectives are formulated to guide the research.

1. To determine the forms of DCTs used in newspaper publishing in Nigeria.
2. To establish the areas of usage of the DCTs by the newspaper organizations.

Research Questions

1. What forms of digital communication technologies (DCTs) are utilized in Nigerian newspaper publishing?



2. In what areas do newspaper organizations employ DCTs?

Methodology

This research employs a mixed methods design, combining qualitative and quantitative approaches for data collection and analysis. Creswell and Clark (2007) define research design as the set of procedures used to collect, analyze, interpret, and report data in research studies. This research would assess the effects of DCTs on newspaper publishing in selected newspapers in Nigeria. Four newspapers would be investigated. The two of the newspapers are public owned while the other two are private owned. Meanwhile in terms of geographical dispersion, the two of the newspapers are northern based while the rest two are southern based. The selected newspapers are as follows: *Leadership* (North-Central), private – Abuja; *Triumph* (North-West), public – Kano; *Nigeria Observer*, (South-South), public, - Edo, and *Tribune* (South- West), private, Ibadan. The study's population consists of 675 staff members from four Nigerian newspaper organizations: *Leadership*, *Tribune*, *The Triumph*, and *Nigerian Observer*. The population frame is based on data from these newspapers' Personnel Departments, with varying staff numbers in each organization.

To ensure a representative sample, the researcher derived a sample size of 256 using the Taro Yamene Formula. This sample was evenly distributed among the four newspapers and divided by departments. Sixteen individuals from each department, including Editorial, Advertising, Circulation, Production/Printing, Administrative, Account/Finance, and Personnel/Human Resources, were selected. The sampling technique employed is stratified random sampling, considering two private-owned newspapers and two public-owned newspapers, as well as northern and southern geographic regions. The final sample frame included *Leadership*, *Tribune*, *the Triumph*, and *Nigerian Observer*, selected through a simple random sampling process. The research employs two primary data collection tools: an open-ended questionnaire and an interview guide, blending survey research and interviews to adopt a mixed research methodology. The questionnaire comprises two sections: Personal Profile: Gathering demographic data (e.g., age, gender, role), encompassing six items. Research Components: Delving into Digital Communication Technologies (DCTs) in newspaper publishing and their usage within organizations, consisting of five items. To ensure the questionnaire's validity, experts in media and technology validated its content. Reliability was established through a pilot study assessing internal consistency via Cronbach's alpha or inter-rater reliability. The interview guide is structured around DCT-related themes, mirroring the questionnaire's research components. It consists of open-ended questions aligned with the study objectives. Its validity was confirmed through expert review, ensuring alignment with research goals. Reliability was assured via interviewer training, guaranteeing consistency in questioning and interpretation across different interviews. Qualitative data from the interviews underwent thematic analysis to identify and report patterns or themes in responses. Quantitative data from the questionnaire will be subjected to descriptive statistics, likely involving frequencies or percentages regarding DCT usage. The findings will be presented using simple percentage tables, offering a comprehensive view of the impact of DCTs in Nigerian newspaper publishing.

Data Presentation

This section analyses data from a questionnaire and key informant interviews conducted among staff members of four Nigerian newspapers: *Leadership*, *Nigerian Tribune*, *The Triumph*, and *Nigerian Observer*. With a total sample size of 256, 240 individuals participated in the survey, and 16 were interviewed. Of the 240 administered questionnaires, 237 were returned, yielding an impressive response rate of 98.7%. The analysis is based on these 237 responses, deemed representative of the study sample. The small number of unreturned questionnaires (2.3%) does not significantly impact the study's reliability and generalizability. Regarding interviews, 14 out of the 16 selected personnel were interviewed, resulting in an 87.5% response rate. The aim of data analysis is to interpret findings in response to two key research questions: 1) What forms of digital communication technologies (DCTs) are utilized in Nigerian newspaper publishing? 2) In what areas do newspaper organizations employ DCTs? Subsequent sections



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will present and analyze the collected data, providing insights into the utilization of DCTs within Nigerian newspaper publishing.

Table 1: Demographic Composition of the Respondents

Category	Frequency	Percentage
Gender		
Female	71	30
Male	166	70
Total	237	100
Age Distribution		
15 - 25 Years	28	11.9
26 - 35 Years	53	22.3
36 - 45 Years	60	25.4
46 - 55 Years	48	20.2
56 - 65 Years	33	13.9
66 - Above Years	15	6.3
Total	237	100
Marital Status		
Single	67	28.2
Married	139	58.7
Divorced	20	8.4
Widowed	11	4.7
Total	237	100
Educational Qualification		
FSLC	2	0.8
O'Level	20	8.5
ND/NCE	124	52.4
Degree/HND	41	17.2
Postgraduate	50	21.1
Total	237	100
Occupation		
ICT	33	13.9
Journalism	102	43.1
Technical Engineering	42	17.7
Marketing	19	8.0
Advertising	14	5.9
Public Relations	15	6.3
Others	12	5.1
Total	237	100
Income		
Low Income	60	25.3
Medium Income	162	68.3
High Income	15	6.4
Total	237	100

Source: *Field Survey, 2023*

Table 2: Newspaper Organizations the Respondents Work with

Newspaper Organization Working with	Frequency	Percentage
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<i>Leadership</i>	61	25.8
<i>Nigerian Tribune</i>	59	24.9
<i>The Nigerian Observer</i>	58	24.4
<i>The Triumph</i>	59	24.9
Total	237	100

Source: *Field Survey, 2023*

Table two shows the newspaper organizations the respondents in the sample of the study work in. The table shows that 61 respondents representing 25.8% work with *Leadership*, while 59 respondents representing 24.9% work with *Nigerian Tribune*. It is also shown in the table that 58 respondents, representing 24.4% work with *The Nigerian Observer*, and 59 respondents, representing 24.9% work with *The Triumph*. Results available in this table have demonstrated that all leadership has the highest number of respondents.

Table 3: Department of work by the Respondents

Work	Frequency	Percentage
Administration	59	24.9
Editorial	61	25.8
Printing/Production	59	24.8
Circulation	58	24.5
Total	237	100

Table 3 shows the department of work by the respondents in the sample of the study. The table shows that 59 respondents representing 24.9% are administrative staff members, while 61 respondents representing 25.8% are editorial staff. It also shown in the table that that 59 respondents, representing 24.8%, work in the printing/production department, and 58 respondents, representing 24.5%, work in the circulation department. Editorial department has the highest number of respondents.

Research Question1

What are the forms of digital communication technologies (DCTs) used in newspaper publishing in Nigeria?

Table 4: Forms of DCTs used in Newspaper Publishing

Forms of DCTs	Frequency	Percentage
E-Mail	26	10.9
Phone Call	11	4.7
Instant Messaging	14	5.9
Video Conferencing	18	7.6
Video	21	8.8
Blog	16	6.7
Podcast	24	10.1
Streaming	23	9.9
E-Newspaper	52	21.9
Web Newspaper	32	13.5
Total	237	100

Table four shows the forms of DCTs used in newspaper publishing identify by the respondents in the sample of the study. The table shows that 26 respondents representing 10.9% identify the e-mail as a form DCTs, 11 respondents representing 4.7% identify phone, 14 respondents representing 5.9% for instant messaging, 18 respondents, representing 7.6% for video conferencing, and 21 respondents representing 8.8% for video.

Furthermore, 16 15 respondents representing 6.7% identify blog, 24 respondents representing 10.1% identify podcast, 23 respondents representing 9.9% for streaming, 52 respondents, representing 21.9% for E-newspaper, and 32 respondents representing 13.5% web newspaper. The respondents identified different forms in which the DCTs are used with the most preponderant one to be e-newspaper.

Table 5: Level of Awareness of the Areas of Usage of DCTs

Level of awareness of the use areas of usage of DCTs	Frequency	Percentage
Not at all aware	17	7.2
Slightly aware	42	17.7
Somewhat aware	36	15.2
Moderately aware	91	38.3
Extremely aware	51	21.6
Total	237	100

Source: *Field Survey, 2023*

Table 5 shows the level of awareness of the areas of usage of DCTs in newspaper publishing by the respondents in the sample of the study. The table shows that 17 respondents representing 7.2% indicate lack of awareness of the level of the usage of DCTs in newspaper publishing, 42 respondents representing 17.2% admit that they are slightly aware, and 36 respondents representing 15.2% say that they are somewhat aware. It also shown in the table that that 91 respondents, representing 38.3% agree that they are moderately aware, and 51 respondents representing 21.6% said they are extremely aware. Majority of the respondents have agreed that they are moderately aware of the use of DCTs in newspaper publishing.

Research Question 2

What are the areas of usage of the DCTs by the newspaper organizations?

Table 6: Areas of Usage of DCTs

Table 6 shows the areas of usage in newspaper publishing identify by the respondents in the sample of the study.

Areas of Usage of DCTs in Newspaper publishing	Frequency	Percentage
News Gathering	83	35.0
News Processing	65	27.5
News Dissemination	89	37.5
Total	237	

Source: *Field Survey, 2023*

Table 6 shows the areas of usage in newspaper publishing identified by the respondents in the sample of the study. The table shows that 83 respondents representing 35.0% identified an area of usage of the DCTs in newspaper publishing to include newsgathering, 65 respondents representing 27.5% identified news processing, and 89 respondents representing 37.5% identify news dissemination. The respondents identified the areas of usage of DCTs to include newsgathering, processing, and dissemination with majority of them emphasizing newsgathering.

Discussion of Findings

Responding to the research question that seeks to establish the forms of digital communication technologies (DCTs) used in newspaper publishing in Nigeria, it is discovered that the forms of DCTs used in newspaper publishing as identified by the respondents included e-mail (10.9%), phone calls (4.7%), for instant messaging (5.9%), video conferencing (7.6%), and video (8.8%). Furthermore, other forms identified include blog (6.7%), podcast (10.1%), streaming (9.9%), e-newspaper (21.9%), and web newspaper (13.5%). The respondents identified different forms in which the DCTs are used with the most preponderant one being the e-newspaper. Responses from interview on the



theme of forms of digital communication technologies (DCTs) used in newspaper publishing in Nigeria collaborates the results of the findings from the questionnaire on the research question on the forms of DCTs. The interviewees equally identified the forms of DCTs to cut across e-mail, phone call, instant messaging, blog, streaming, e-newspaper, and web newspaper. For instance, an interviewee for the study, the head of finance and administration of the *Nigerian Observer*, Osarhiemen (2023) points out one of the forms of DCTs to include online newspapers. “You know, ours now is online based.” In addition to that, the head, legal/administration of *Nigerian Tribune*, Wole Efunuga (2023), notes that “people prefer to get the e-copy and read it page by page because it is in their phones.” More so, another interviewee for the study, a features editor and South-West editor of *Nigerian Tribune*, Oyetimi (2023), asserts that “not only could we get stories from our reporters, even those who are not our workers could call us and send photographs to us. Head of editorial of *The Triumph*, Abdullahi (2023), maintains that “the reporters file their stories through our emails. We have the email of the company; we have our individual addresses.” The head, circulation/administration, *The Triumph*, Ibrahim (2023), “We deliver our paper both online and in the physical. Online, we have triumph online, through which we dispense our information through a regular basis. Every hour of the day, we sent out information to our readers.” Head of sales and circulation, *Leadership*, Muka (2023), digital technology has brought more advantages to the industry. Media houses now find it easy to send out news to their readers even without the hard copy or e-copy.” The interviewees also identified the e-newspaper as the most dominant forms in which the DCTs are used in newspaper publishing.

Furthermore, answering the research question that seeks to identify the areas of usage of the DCTs by the newspaper organizations, the respondents identified the areas to include newsgathering (35.0%), news processing (27.5%), and news dissemination (37%). News dissemination is the most predominant area of the usage of DCTs in line with the findings of the study. Responses from interview on the theme of areas of usage of DCTs in newspaper publishing in Nigeria collaborates the results of the findings from the questionnaire on the research question on areas of DCTs. The interviewees equally identified the areas of DCTs to cut across the facets of newsgathering, news processing and news dissemination. For instance, an interviewee for the study, the head of finance and administration of *The Nigerian Observer*, Osarhiemen (2023), points out that “in sourcing information, it is easy for the editors and those in the news department to be able to have access to the online written news because of digital communication technology.” Furthermore, the Acting Managing Director, *The Nigerian Observer*, Agbayagbuna (2023), identifies the area of DCTs usage to include newsgathering, news processing, and news dissemination. Every aspect of publication now, since the advent of the new media, most newspaper houses took to digital production. So, any newspaper house that is not using digital communication technology, definitely, will not survive in this new era of media production. So, every aspect of the newspaper publishing, even up to the printing of the hard copy.

A features editor and South-West editor of *Nigerian Tribune*, Oyetimi (2023), contends that the usage of the DCTs cut across news gathering, processing and dissemination. He maintains that “because of digital communication technology, what we do is that we follow other online platforms apart from *Nigerian Tribune* and get stories and then we can call our reporters to find out the veracity of the story. In addition to that head legal/administration of *Nigerian Tribune*, Efunuga (2023), notes that:

“In those days when the newspaper started, it was a kind of colorless production. It was bereft of aesthetics, beauty. It was not appealing to the eyes. But development, events on the field, brought about these innovations which led to digital communication and all that. Before now, there was nothing like photo cropping. It was what we called cut and paste. Just cut the photograph and paste and it goes like that. Now, you can crop, you can put aesthetics, you can design, you can superimpose, you can do a lot of things as a result of digital communication technology.”

Head of editorial of *The Triumph*, Abdullahi (2023), identifies the areas of the use of DCTs to include “newsgathering and other functions that are done in producing the paper. Everything here, we use computers and we apply digital communication technology in all the processes.” The head of technical service controller, *The Triumph*, Hussein Taiwo Yusuf, indicates that the usage is applied from “we download the stories from our correspondence, from there, we make the layout, after that we include the pictures all in the computer. We do the pagination on the computer, the layout for the pages is all done in the computer.” An editor with *Leadership*, Fakeye (2023), submits that DCTs are



applied in “many ways in publishing newspapers. Right from news gathering to the point of news processing that has to do with the cleaning up and preparing the pages, the page designing and everything.”

Conclusion

Based on findings from the two research questions, it could be concluded that DCTs are pertinent in newspaper publishing in Nigeria. There are different forms of DCTs used in newspaper publishing which include e-mail, phone calls, instant messaging, video conferencing, video, podcast, streaming, e-newspaper, and web newspaper with the most predominant form of DCTs being the e-newspaper. Results available from the study have shown that other forms of DCTs are not well utilized in newspaper publishing. Areas of usage of DCTs include newsgathering, news processing, and news dissemination. News dissemination is the most predominant area of the usage of DCTs. The usage of DCTs is not pronounced in newsgathering and processing.

Recommendations

The study recommends that:

1. The Newspaper Proprietors’ Association (NPAN) of Nigeria should improve in the use of other forms of DCTs in newspaper publishing such as e-mail, phone calls, instant messaging, video conferencing, video, podcast, and streaming.
2. The Nigerian Guild of Editors (NGE) should scale up the use of DCTs in the areas of newsgathering and processing.

References

- Ani, G. E. (2015). Assessment of the effect of new communication technologies on the performance of print journalists in Nigeria. Unpublished PhD thesis, Enugu State University of Technology, Enugu, Nigeria.
- Bagozzi, R. P., Davis, F. D., &Warshaw, P. R. (1992), Development and test of a theory of technological learning and usage. *Human Relations*, 45 (7), 660–686.
- Chris, L. (2001). The evolution of the newspaper of the future *Magazine*.
- Cohen, L. Manion, L. & Morrison, K. (2007). *Research methods in education*, (6th Ed.), Routledge.
- Contreras, E. (2013). *Social state: Thoughts, stats and stories about the state of social media in 2013*. Social Nerdia.
- Creswell, J. & Clark, P. (2007). *Designing and conducting mixed methods research*. Sage Publication.
- Davis, C. H., Deil-Amen, R., Rios-Aguilar, C., & Canche, M. S. (2014). *Social media in higher education*. Claremouth.
- Dörnyei, Z. (2003). Attitudes, orientations and motivation in language learning: Advances in theory, research and applications. *Language Learning*, 53, 3–32.
- Elder, S. (2009). *ILO school-to-work transition survey: A methodological guide sampling methodology module 3*. International Labour Organisation.
- Emerah, A., Oyedele, S., & David, J. (2013). Determinants of customer satisfaction in the Nigerian telecommunication industry: Empirical evidence. *International Journal of Management and Strategy*. <http://www.facultviournal.com/webmaster/upload/>. Accessed on 5th February, 2022.
- Ezugwu, N.M. (2011). The impact of information communication technologies (ICTs) on journalism practice in Nigeria: A study of the Nation, Sun and Champion Newspapers. Research Project Submitted to the Department of Mass Communication, University of Nigeria, Nsukka in Partial Fulfilment as the Requirements for an Award of Master of Arts Degree in Mass Communication.
- Frankfort-Nachmias, C., &Nachmias, D. (2008). *Research methods in the social sciences*, (7th Ed.), Worth Publishing.
- Gallager, R. (2006). Principles of digital communications I. Massachusetts Institute of Technology. <http://ocw.mit.edu>. Accessed on 19th January, 2022.
- Garrison, B. (1996). *Successful strategies for computer-assisted reporting*. Lawrence Erlbaum Associates.
- Hammersley, M., & Atkinson, P. (2007). *Ethnography: Principles in practice*. Routledge.
- Jones, J.& Salter, L. (2012). *Digital journalism*. Sage Publications Ltd.



- Kaul, V. (2012). The digital communications revolution. *Online Journal of Communication and Media Technologies*, 2(3), 113.
- Matthew, R. (1998). *Technology advances in journalism*. cyberjournalist.org.in/advance.html.
- New Media Book Project (2016). *Multimedia journalism*. newmediaskool.org/index.php?option=com_content&view=article&id=1343:multimedia-journalism&catid=1:latest-news&Itemid=50. Accessed on 10th January, 2022.
- Nguyen, N. (2017). *A Tool for Digital Communication Implementation in the Marketing Funnel*. Master's Thesis.
- Norwegian Ministry of Foreign Affairs (2020). *Digitalization for development*. Digital Strategy for Norwegian Development Policy.
- Nsude, I. (2005). Technology and enhanced job opportunities in the Newspaper industry. In I. E. Nwosu, J. E. Aliede, & I. Nsude (Eds), *Mass communication: One course, many professions*. Enugu: Cecta Nigeria Limited.
- Obijiofor, L., & Green, K. (2001). New technologies and future of newspapers. *Asia Pacific Media Educator*, 1(11), 7.
- Odorume, A. (2012). Historiography of the print media: A global-cum-Nigerian perspective. *Journal of African Studies*, 1, 1-9.
- Omenugha, N. L. (2019). *Media management and disruptive technology: The Nigerian newspaper industry today*. Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor of Philosophy.
- Onyike, I. E., Chiaba, C. D., & Temodeh, C. I. (2014). The print media in the era of the new media: prospects and challenges. *Benin Mediacom Journal* 8, 126-134.
- Raj, S. J. (2013). News media and technology in a global information age: Multi-platform vertical integration and acquisition in the global media spectrum. *Media watch: An International Peer Reviewed Research Journal in Communication and Media*, 4(2) <http://www.mediawatchglobal.com>. Accessed on 5th December, 2021.
- Randall, D. (2000). *The Universal Journalist*. Pluto Press.
- Riffe, D., Lacy, S., & Fico, F. (1998). *Analyzing media messages: Using quantitative content analysis in research*. Erlbaum Associates.
- Salman, A., Ibrahim, F., H., Abdullah, M.Y., Mustafa, N., & Mahbob, M.H. (2011). The Impact of the new media on traditional mainstream mass media. *The Innovation Journal: The Public Sector Innovation Journal*, 16, (3), 2 - 11.
- Saperstein, T. (2014) The Future of the print: newspapers struggle to survive in the age of technology. *Havard Political Review*. <http://havardpolitics.com/covers/future-print-newspapers-struggle-survive-age-technology/>. Accessed on 6th December, 2021.
- Sarokin, D. (2015). *Types of digital communication*. <https://www.techwalla.com/articles/types-of-digital-communication>. Accessed on 9th December, 2021.
- Statistical (2017). *Statistical*. <https://www.statista.com/topics/1164/social-networks/>. Accessed on 5th November, 2021.
- Usher, N. (2016). *Interactive Journalism: Hackers, Data, and Code*. Illinois: University of Illinois Press.
- Venkatesh, V. & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46 (2), 186- 204.
- Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information systems research*, 11 (4), 342–365.
- Zangana, A. (2017). *The impact of new technology on the news production process in the newsroom* A Dissertation submitted to the University of Liverpool in partial fulfillment of the requirements for the degree of Doctor of Philosophy.