

Perception of Journalists in Ebonyi State on Artificial Intelligence for News Writing

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Abstract

Today, news texts can be created automatically and presented to readers without human participation. This developing trend is fast become the norm in journalism profession. The aim of this study, therefore, was to investigate how journalists in Ebonyi Sate perceive artificial intelligence for news writing. Two research questions were formulated to guide the study: to what extent are journalists in Ebonyi State aware of artificial intelligence for news writing? How do journalists in Ebonyi Sate perceive the reliability of news written by artificial intelligence? This study adopted a descriptive survey design and reviewed literature under empirical and conceptual. The study used Media richness theory (MRT) to give foundation to this study. The population of this study was all the 230 registered members of the NUJ, Ebonyi State chapter. Data was generated using census sampling method and 230 copies of questionnaire were administered to the respondents. Data generated from the field were analysed using frequency and percentage, while testing of hypotheses was done using chi-square. Findings revealed that journalists in Ebonyi State are aware of artificial intelligence for news writing but do not believe that news from this source is reliable. The study recommended that, journalists in Ebonyi State should embrace artificial intelligence in this digital age. It also recommended that workshops should be organized for the journalists by their media organizations to enable them see the need to embrace this new technological innovation for effective journalism practice in the present digital era.

Key words: Artificial intelligence, Perception, Journalists, News writing, Ebonyi State

Introduction

The use of artificial intelligence (AI) in news writing has changed the dynamics of journalism. It is making the work of journalism easier but there are also fears by journalists that this could create unemployment by displacing many of them from their media organizations specially those in the print media.

Media organisations have started to work with algorithms to operate and publish software-generated news articles. Templates are produced in journalistic but difficult processes that require painstaking manual work (Jung, Song, Kim, Im & Oh, 2017). Although this era remains in an early market phase, computerized journalism has arrived in newsrooms. For example, Forbes makes use of an artificial-intelligence platform provided through the means of the technology company, Narrative Science, to generate computerized information on company income and inventory charges from live datasets and content material harvested from preceding articles (Gani & Haddou, 2014). AP partnered with Automated Insights to start automating quarterly income reviews and now publishes 3000 such financial stories each quarter (Miller, 2015). After an earthquake hit Los Angeles one morning, it took just three minutes for the LA Times to jot down and submit a piece of writing about it online. It was written with the aid of an algorithm (Neal, 2014). Algorithms are no longer just used in news writing; they are also used in news selection and editing. In the Guardian from the U.K., the algorithmic newspaper software programme elects the maximum famous Guardian articles and assembles them right into a weekly published newspaper (Ellis, 2013). It is widely known that search engines like Google and yahoo also use algorithms to show information on their site.

As the technologies are intruding into the advent of information, students have begun to look

at the changing nature of journalism amid data abundance, computational exploration, and algorithmic emphasis with developing significance for the media industry and for journalism as a practice and profession (Lewis, 2015). Among the data-orientated practices rising in journalism, (Carlson, 2015 as noted in Jung, Song, Kim, Im and Oh, 2017), stated that no technological innovation seem as probably disruptive as artificial intelligence in journalism, because it calls up issues about the future of journalistic labour, news compositional forms, and the very basis of journalistic authority. Meanwhile, automated content material without human intervention beyond the preliminary programming could make reporters free from dealing with basic works and find more time for recreation and greater investigative reporting.

Statement of the Problem

In this study, the researcher considered artificial intelligence as algorithms that automatically convert data into news texts with little or without human participation. The use of software to actually write a news story is a new advancement and not all journalists are aware of its capabilities in the news room (Clerwall, 2014). Only few studies have been done in this area, the outstanding ones, includes works done by (e.g. Okiyi and Nsude, 2019; Clerwall, 2014; Wolker and Powel, 2018). To the best of the researcher's knowledge, none of these studies precisely provided insight to the local situations and realities, particularly as it affects Ebonyi State, this indicates that there is paucity of empirical literature on the perception of journalists in Ebonyi State on artificial intelligence for news writing. It is this gap in knowledge that this study is designed to close.

Objectives of the Study

The general objective of this study is to find out the perception of journalists in Ebonyi State on artificial intelligence for news writing. To investigate this phenomenon, the study explores the following specific objectives:

1. To find out whether journalists in Ebonyi State are aware of artificial intelligence for news writing.
2. To determine the level of reliability journalists in Ebonyi State attach to news written with artificial intelligence software.

Research Questions

1. To what extents are journalists in Ebonyi State aware of artificial intelligence for news writing?
2. How do journalists in Ebonyi State perceive the reliability of news written by artificial intelligence?

Research Hypotheses

The following hypotheses guided the study.

1. H_{01} : Journalists in Ebonyi State are not aware of artificial intelligence for news writing.
2. H_{02} : Journalists in Ebonyi State do not perceive news written by artificial intelligence as reliable.

Significance of the Study

This study is significant in the sense that it will provide useful information for advancement of further studies in the field of journalism as regards news writing. The information in this study will encourage future research and development of academic knowledge by way of books, seminar paper, journals, and etcetera in this area of study.

Literature Review

Artificial Intelligence

In recent times, artificial intelligence has risen to the forefront of public discourse because of its significant influence in the area of cloud computing, big data, the Internet of Things (IOT), virtual reality and its potential to bring new possibilities for global development (UNESCO, 2019). AI is already transforming web search, advertising, e-commerce, finance, logistics, media and several other areas. The target of AI technology is to provide systems that enable human like interactions with software and provide decision support for specific

tasks (Wilson and Jibrin, 2019). According to (Junctan, 2018), while AI is perceived as a cutting-edge technology for global development, there are also fears that AI is highly likely to be a threat to people because of features of performing activities that were in the past, a preserve of humans, thus, there are fears that it could replace teachers, engineers, lawyers and it could be weaponized for social control. Similarly, Andrew (2016) notes that a number of valuable jobs, currently done by humans, such as examining security video to detect suspicious behaviours, monitoring traffic flow and offences, moderating online posts etc. can be done swiftly by AI technology, which means humans may very soon be replaced by AI. Straders (2019), agrees that there are bound to be new responsibilities over ethics, economics and safety regarding artificial intelligence innovations.

Although artificial intelligence technology is very effective for certain specific tasks, it is still limited and far from matching the highly diverse cognitive abilities of humans. There are still deficiencies in the (AI) technology. For instance, Chui, Manyika and Miremadi (2018) repeated some of the limitations of AI to include data labelling, which has to be done by human, explanation problem, generalization of learning and bias in data and algorithms, all of which would require human assistance for now.

Artificial intelligence in journalism

Artificial intelligence is already being used in many newsrooms to create and deliver different types of news (Kim and Kim, 2018). Indeed, it has been used for the automated writing of articles since 2014 (Kim and Kim, 2021) and has become an essential element of contemporary newspaper production in the Global North (Túñez-López, Toural-Bran, and Cacheiro-Requeijo, 2018). The use of algorithms and automated processes transforms journalistic work (Jamil, 2020), changes news production routines and narratives (Kim and Kim, 2018) and also impacts the retrieval, storage, conception, transmission and consumption of information (Túñez-López, Toural-Bran, and Nogueira, 2019). News companies are aware and have started to work with algorithms to operate and publish soft-ware generated news articles. Although the technology is still in an early stage in the market, automated journalism has arrived in the newsroom (Jung, Song, Kim, Im. and Ho, 2017). Automation of news writing will be a possibility for media agencies to reinvent information production gadget through the means of producing information faster, at a larger scale, and with fewer errors. It additionally will be useful for the target market pursuing greater news stories and independent reporting. Although, (Autor, 2015) slated that there were periodic warnings within last centuries that automation in this new era is going to wipe massive variety of middle class jobs, such concerns have these days regained prominence as Brynjolfsson and McAfee (2014), assert that there is never been a better time to be an employee with special competencies or the right education, due to the fact that human beings can now use technology to create and capture image and write news stories. However, there is never been a worse time to be an employee with only 'ordinary' competencies and skills to offer, due to the fact that computers, robots, and different digital technologies are obtaining those capabilities and skills at an extraordinary rate.

Approaches to artificial intelligence Application in News Writing

Sim and Shin (2016) introduced an application that automatically writes articles called Stock Robot in their study. The necessary steps in Stock Robot include four phases: data collection and storage, critical event extraction, article content production, and article production. The artificial intelligence collects and analyzes data on social issues and stock indices in the past two years. Twitter is used as a platform in this study. The produced article was uploaded to Twitter on an account without any errors.

Los Angeles Times has switched to automatic reporting on earthquakes. Quakebot, an algorithm created by database maker Ken Schwencke, creates a text on earthquakes with magnitudes greater than 3.0, with data from the U.S. Geological Research Unit. The algorithm adds a map to the text and presents it by creating a title within minutes of the earthquake's first detection. According to Schwencke, Quakebot helps journalists by eliminating most of the regular work in earthquake reporting (Tornoe, 2014). Rutkin (2014) says that the Los Angeles Times

newspaper automatically publishes the news containing all the crucial details about the earthquake 3 minutes after the earthquake in California, and highlights this point: “The last sentence was the most important, it says, ‘this post was generated by an algorithm created by the author.’ This sentence got more attention”. Quakebot works by filling the gaps in the relevant places. When the U.S. Geological Survey Unit sends an e-mail alert about an earthquake, Schwenke’s bot parses the email, places the data in a template, and uploads the article to the newspaper’s content management system. It even sends an email to editors to see notifications. In addition, the newspaper has other bots to compare neighborhoods for a project; in this way, articles on city murders are automatically generated on the website.

Empirical Review

Clerwall (2014) investigated the topic “Enter the Robot Journalist” in Sweden. The author investigated how readers perceive software-generated content in relation to similar content written by a journalist. The study utilizes an experimental methodology where respondents were subjected to different news articles that were written either by a journalist or were software-generated. The respondents were then asked to answer questions about how they perceived the article - its overall quality, credibility, objectivity, etc. The study found that although there were no statistically significant differences due to the limited sample sized respondent, the experiment revealed interesting and mixed results. While the software generated content was perceived as more descriptive and boring, it was also considered to be more informative, objective, accurate, and trustworthy. It was also found that the respondents failed to assess the author of the article correctly whether it was written by a journalist or a computer. Overall, journalistic content produced by an algorithm was not or was barely discernible from content written by a journalist in this experiment. The study under review focused on how readers perceive software-generated content in relation to similar content written by a journalist. It did not consider the perception of journalists especially those in Ebonyi State on artificial intelligence for news writing. It is this gap in knowledge that this study tried to fill.

Another empirical study conducted by Wölker and Powell (2018) titled “Algorithm in the news room? Perceived credibility and selection of automated journalism” aimed to investigate how European newsreaders would perceive three forms of journalism (i.e., the human, the robot, and combined journalism created by both the human and the robot) in terms of content and source reliability. The study used experimental method to examine the phenomenon. Findings among other things show that, in large part, credibility perceptions of human, automated, and combined content and source (s) may be assumed equal. Only for sports articles was automated content perceived significantly more credible than that of human journalists. Credibility does not mediate the likelihood of news readers to either select or avoid articles for news consumption. As a result, it was shown that the effects of robots on journalism quality were highly undistinguishable for European readers. The study under review focused on how European newsreaders would perceive three forms of journalism (i.e., the human, the robot, and combined journalism created by both the human and the robot) in terms of content and source reliability, the present study is focused on the perception of journalists in Ebonyi state on artificial intelligence for news writing. It is this gap in knowledge that this study tries to fill.

2.3 Theoretical Framework

This study is anchored on Media richness theory (MRT). The theory was developed in 1984 by Richard L. Draft and Robert H. Lengel, to describe and evaluate communication channels within organisations. Media Richness Theory postulate that communication channels that are able to convey messages in clear and timely manners are considered as having the richness of communication channels (Moghawerni, 2014). The theory according to (Asemah, et al, 2017 as cited in Okiyi and Nsude 2019) is used to rank and evaluate the richness of certain communication media, such as phone calls, video conferencing and email. According to Asemah, et al (2017, p.270), “as technology has advanced, this theory is constantly being reviewed and retooled to fit in the modern technology rich world we find ourselves. This theory is related to this paper in the sense that artificial intelligence and its uses have become universal, and are applied in media organisations. And one of its

objectives is to ensure speed, accuracy and fidelity in production of news and their distribution, as a result, the notion guiding the theory are manifest in the use of AI in journalistic practices (Okiyi & Nsude, 2019). This theory is related to this study because as technology advances, news writing takes a new form to fit into the modern technology which includes artificial intelligence written news articles.

Methodology

The study adopted descriptive survey research design because of the information required for the study. According to Aina (2006) descriptive survey is a study which uses the sample data in any systematic investigation to describe and explain what is in existence or non-existence on the present status of a phenomenon being investigated. The design is considered appropriate because the study was carried out in order to elicit the opinions of the registered members of NUJ, Ebonyi State on their perception of artificial intelligence for news writing. The population of the study comprised 230 registered members of Nigerian Union of Journalists (NUJ), Ebonyi State chapter. Census sampling was adopted for this study. Questionnaire was used as the instrument for data collection. A total of 230 copies of the questionnaire were administered to respondents with the assistance of two research experts. Collected data was presented in frequency tables and percentages and hypotheses were tested with chi square.

Test of Hypothesis Decision Rule

If the calculated chi-square $(X)^2$ is equal or greater than the critical value (chi-square table of value), reject H_0 and accept H_1 .

If the calculated chi-square $(X)^2$ is lower than the critical value (chi-square table of value), reject H_1 and accept H_0 .

Data Presentation and Analysis

This chapter dealt with presentation and analysis of data that is presented in tables in line with the research questions that guided the study. The responses to the questions are sequentially with descriptive/explanatory notes and discussion after each table. This is for the purpose of proper understanding of the findings and the probable implications. The study tested two null hypotheses

Hypotheses one:

H_0 : Journalists in Ebonyi State are not aware of artificial intelligence for news writing

Response Category	Frequency	Percentage
Strongly Agree	5	2
Agree	7	3
Uncertain	13	6
Disagree	85	37
Strongly Disagree	120	52
Total	230	100

Source: Field work (Udoh, 2022)

Expected frequency $(Ef) = \frac{230}{5} = 46$

Degree of freedom = $K-1$

= 5-1

= 4

Formula:

$$x^2 = \sum \frac{(Of - Ef)^2}{Ef}$$

Ef

Using the formula

S/N	O	E	O-E	(O-E) ²	(O-E) ² /E
1	120	46	74	5476	119.04
2	85	46	39	1521	33.07
3	13	46	-33	1089	23.67
4	7	46	-39	1521	33.07
5	5	46	-41	1681	36.54

$$x^2 = 245.39$$

At a 0.05 level, 4 degree of freedom, the critical value (table value) is 9.49. Since the chi- square (x^2) calculated value of 245.39 is greater than the critical value of 9.49, the null hypothesis H_0 : Journalists in Ebonyi State are not aware of artificial intelligence for news writing was rejected and H_1 : was accepted meaning that they are aware of artificial intelligence for news writing.

Hypothesis Two: H_0 : Journalists in Ebonyi State do not perceive the news written by artificial intelligence as reliable.

Response category	Frequency	Percentage
Strongly Agree	93	40
Agree	82	36
Uncertain	17	7
Disagree	28	12
Strongly Disagree	11	5
Total	230	100

Source: Field work (Udoh, 2022)

$$\text{Expected frequency (Ef)} = \frac{396}{795}$$

$$\text{Degree of freedom} = K-1$$

$$= 5-1$$

$$= 4$$

Formula:

$$x^2 = \sum \frac{(Of - Ef)^2}{Ef}$$

Using the formula

S/N	O	E	O-E	(O-E) ²	(O-E) ² /E
1	30	46	-16	256	5.57
2	35	46	-11	121	2.63
3	10	46	-36	1296	28.17
4	68	46	22	484	10.52
5	89	46	43	1849	40.20

$$x^2 = 87.09$$

Since the chi-square x^2 calculated value of 87.09 is greater than the critical value of 9.49, the null hypothesis H_0 : Journalists in Ebonyi State do not perceive news written by artificial intelligence are reliable was accepted and the alternative hypothesis H_1 : Journalists in Ebonyi state perceive news written by artificial intelligence are reliable was rejected.

Findings

1. Journalists in Ebonyi State are aware that artificial intelligence can write news.
2. Journalists in Ebonyi State do not perceive news written by artificial intelligence as reliable.

Discussion of Findings

This study was conducted to investigate the perception of journalists in Ebonyi State on artificial intelligence for news writing.

Findings based on this research questions indicated that journalists in Ebonyi State are aware of artificial intelligence for news writing. This finding is supported by the result of the test of hypothesis **one** where Ho1 was rejected and the alternate hypothesis, Hi1 was accepted implying that journalists in Ebonyi State are aware of artificial intelligence in news writing. This finding agreed with that of (Jung, Song, Kim, Im, and Ho, 2017) news company are aware and have started to work with algorithms to operate and publish sort-ware generated news articles. Although the technology is still in an early stage in the market, automated journalism has arrived in the newsroom and is well aware of.

Findings from this study also indicated that journalists in Ebonyi State do not perceive news written by artificial intelligence as reliable. They believe that journalists who visit the scene of incidents or news events will be more accurate than machine analyzed data or generated news by the so called artificial intelligence that depend solely on what is entered in the software whether it is fake information or not. This negative perception by Journalists in Ebonyi State is supported by the findings based on the test result of hypothesis **two** where Ho2: Journalists in Ebonyi State do not perceive news written by artificial intelligence as reliable. The above finding is similar to that of Clerwall (2014) which upholds that artificial intelligence cannot replace human journalists in credibility and reliability. Wolker and Powel (2018) also submits that in large part, credibility perceptions of human, automated, and combined content and source (s) may be assumed equal. Only for sports articles can automated content be perceived significantly more credible than that of human journalists. Credibility does not mediate the likelihood of news readers to either select or avoid articles for news consumption while Kaa and Krahmer (2014) found that journalists reported that the reliability of the human journalist was higher than that of a robot. Moreover, journalists stated that the perceived expertise of artificial intelligence was greater. This study has succeeded in adding value to the available literature in the subject area.

Conclusion

From analyses made in this study, it is palpable that journalists in Ebonyi State are aware of the new technology that enable news articles to be written with little or no human intervention. The background of the study was highlighted and the problem of the study was subsequently stated. Two null hypotheses were formulated to guide the study, one of which is, Journalists in Ebonyi State do not perceive news written by artificial intelligence as reliable. The study adopted a descriptive survey design and reviewed literature under conceptual and empirical clarifications. Media richness theory guided the study. The sample size of the study was 230. Census sampling was used. Data collected were analysed and presented in tables using frequency and percentages, while test of hypotheses was done using chi-square. One of the findings revealed that journalists in Ebonyi State do not perceive that artificial intelligence can write reliable news stories.

However, media organizations have to accept that artificial intelligence approach in news writing is something to embrace because the world is fast moving into the age of innovative technologies and any country or profession that fails to follow the new trend could be left out.

Recommendations

Based on the findings of this study, the researcher recommends as follows:

1. Media organisations in Ebonyi State should organize workshops, seminars and conferences to enlighten journalists on the importance of artificial intelligence in news writing.

2. Journalists in Ebonyi State should embrace artificial intelligence believing that it is reliable and has come into every field of human endeavours, including journalism.

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