Article

ALEXANDRIA
The Journal of National and International Library and Information Issues

Prominence of occurrence accorded to climate change information in Tanzanian newspapers

Alexandria: The Journal of National and International Library and Information Issues
1–18

DOI: 10.1177/0955749020950608
journals.sagepub.com/home/ala
SAGE

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Abstract

Study was conducted to analyse degree of prominence that Tanzanian newspapers accorded to climate change information. We argue that the level of prominence accorded to climate change information by Tanzanian newspapers is inadequate. Prioritising the coverage of climate change information in newspapers is important for facilitating its access, promotion and dissemination for awareness creation. Triangulation of quantitative content analysis and in-depth interview method approaches and a sample size of 1600 newspaper editions drawn from six Tanzanian newspapers for a span of 10 years were used. Newspaper editions were quantitatively content analysed and the frequencies at which climate change information articles were placed at the various parts of the newspapers were analysed. Findings indicate that a total of 81,162 articles were published. Of this total, only 684 (0.84%) articles covered climate change information. Furthermore, findings indicate that, of the total 684 climate change information articles, only 53 (7.6%) were placed in the front pages of the six Tanzanian newspapers for all 10 years, giving a yearly average of 5.3 articles for all newspapers and only 1 article for each newspaper per year, whereas the majority (631, 92.25%) of articles in climate change were randomly placed in the inside pages. The Chi-square test ($\chi^2 = 10.000$; df = 1; p value < 0.002) shows that significant differences exist between the locations of number of articles in front pages and inside pages. The findings suggest that climate change information in Tanzanian

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newspapers was not given the necessary level of prominence. Study recommends that newspaper media houses should have editorial policy that will ensure that they have a social responsibility of reporting climate change information prominently in their newspapers for wide public access and dissemination. This paper also recommends the need for the provision of specialised trainings such as climate change journalism to news editors, journalists and reporters for equipping them with the good writing styles and skills that will enable them to produce more appealing climate change stories that will attract its front page placement status for setting an agenda in the direction of climate change adaptation, coping and mitigation mechanisms in Tanzania

Keywords
climate change, content analysis, newspapers, prominence, Tanzania

Introduction

Climate change is a serious challenge affecting all countries around the world. The negative impacts of climate change such as drought, floods, low food production, erratic heavy rainfalls, biodiversity loss and land degradation have been experienced at different intensities in many countries including Tanzania (Intergovernmental Panel on Climate Change (IPCC), 2007; United Republic of Tanzania (URT), 2012). As such, various adaptation, coping and mitigation strategies have been developed over time to combat the impacts of climate change. This in turn calls for the creation of awareness about the negative effects of climate change and the necessary strategies against such effects.

Information is an important ingredient when assessing the impacts of climate change and developing suitable adaptation, coping and mitigation strategies. Timely access to trustworthy, relevant and current climate change information is necessary for increased awareness about the impacts of climate change, adaptation, coping and mitigation mechanisms as well as better management of climate change-related hazards (Cruce, 2007; Debela et al., 2015; Dinshaw et al., 2012; Kropp and Scholze, 2009; Lagos and Wirth, 2009). According to Tall et al. (2014), access to the right climate change information at the right time and through right channels enables communities to make informed decisions and prepare themselves for the adverse climatic conditions, thereby improving their productivity and profitability while managing risks. Since climate change is unobtrusive and complex issue that most people are unable to grasp (Schäfer and Schlichting, 2014), thus they mostly learn about it by receiving information from media such as newspapers, television and radio (Anderson, 2011; Arlt et al., 2011; Schäfer, 2012; Stamm et al., 2000).

Newspapers have for a long time played a crucial role as vehicles of information dissemination on various subjects such as climate change for awareness creation, informing, enabling sharing of experiences, educating and influencing behavioural change (Chand, 2017; Falaki and Adegbija, 2013; Gadzekpo et al., 2018; Harris, 2017; Schmidt et al., 2013; Shrestha, 2002). Newspapers have additional advantages when compared to other mass media as they can be easily stored for longer time for future reference. In African context in particular, single newspaper can often be shared by many

readers. Furthermore, newspapers provide flexibility in reading them as readers can study and review the contents at their own appropriate place and relevant time, and they can also provide prominent coverage to a particular subject (Aiyesimoju and Awoniyi, 2010; Boykoff and Boykoff, 2007; Dolsak and Houston, 2014; Nelson, 2011; Salathong, 2007; URT, 2012). Newspapers are also relatively less expensive as compared to other media such as television and radio. According to McCombs (1977), Boykoff (2010) and Culloty et al. (2019), print publications such as newspapers are assumed to have a stronger agenda setting impact than broadcast media such as television and radio news for the public and policymakers. Besides, newspapers offer a simpler means of methodically collecting and analysing data (Schmidt et al., 2013).

The history of newspaper landscape in Tanzania can be traced back when Tanganyika (the then Tanzania Mainland) was still under Germany colonial rule. According to Sturmer (1998), the first newspaper named *Msimulizi* (the storyteller) was published by the Anglican Universities' Mission to Central Africa in Zanzibar in the year 1888. In 1957, the Kiswahili-published newspaper known as *Sauti ya TANU* (the Voice of TANU), which was privately owned by one political party known as Tanganyika African National Union (TANU), was established. *UHURU* (Independence) newspaper was established on the Tanganyika's Independence Day (9 December 1961) to replace the Voice of TANU newspaper. In 1972, the *Daily News* and *Sunday News* became the English language government-owned newspapers, which were published daily and weekly, respectively. In the same year, TANU established her weekly newspaper known as *Mzalendo* (the patriot). As a result of commercialisation of media industry, the newspaper industry in Tanzania started to experience dramatic changes in 1990s which led to increased number of newspapers (Kweka, 2013; Murthy, 2011). Until 2015, there were 39 registered newspapers comprising of 14 English and 25 Kiswahili language published newspapers and most of them were privately owned (African Media Barometer, 2015; URT, 2016).

Prioritising the coverage of information in climate change in the newspapers is important as it facilitates easy access, promotion and dissemination of such information. News placement on the front pages of newspapers has a greater impact as it can be easily seen by readers (Granner et al., 2010) and be used by other media outlets such as news commentary programs in television and radio for more dissemination (Salathong, 2007). This means that, if newspapers place climate change articles on their front pages, there are more chances of raising the issues of climate change into the wider public discourse. This, in turn, may contribute to building appropriate behaviours towards climate change matters.

In the context of this article, the concept of prominence refers to a priority that information is given in the newspapers' pages. It is the positioning of an article or story within the prominent pages of the newspapers to communicate its importance. It is also operationalised as the extent at which articles appear on the front page section of the newspaper (Schooler et al., 1996). Prominence plays a crucial role in shaping media salience whereby the placement of the news is likely to draw more or less audience attention. Prominence is measured by counting the total number of articles containing a particular issue appearing on the front page of a newspaper against the total number of articles containing the same issue appearing in other pages in the newspapers (Carol and McComb, 2003; Lim, 2010).

It has been repeatedly reported that newspapers attach inadequate priority in publishing developmental and scientific issues as compared to political and social issues (Bacon, 2013; Elia, 2018; Mudombi et al., 2014; Narayana and Kumar, 2009; Nkya, 2017; Ogessa and Sife, 2017; Okorie and Oyedepo, 2011; Tagbo, 2010). Bacon (2013) reported an overall inadequacy of publishing stories about climate change science prominently in the Australian newspapers. In India, Narayana and Kumar (2009) reported that newspapers tend to prioritise advertisements, politics, entertainment and crime events while ignoring developmental topics such as climate change. A study carried out in Nigeria revealed that the degree of prominence accorded to agriculture by newspapers was as low as 4.8% (Okorie and Oyedepo, 2011). Tagbo (2010) argues that although climate change news may have so many dimensions that can raise public awareness, yet they are still not given front page coverage in the newspapers. In Zimbabwe, Mudombi et al. (2014) reported that climate change issues covered in the Zimbabwean media were not prominently presented.

In Tanzania, Ogessa and Sife (2017) reported that only 4.9% of agricultural articles were placed on the front pages of the newspapers that were published in the four daily newspapers in 5 years between 2010 and 2015. Elia (2018) observed a low trend of Tanzanian newspaper to publishing climate change information in front pages in two Tanzanian newspapers. Similarly, Nkya (2017) reported that developmental news affecting the lives of the average Tanzanian citizens hardly receive prominence in the news reported in the media of national status. Since prominence of climate change information in newspapers facilitates easy access, promotion and dissemination of such information, it is important to document how often climate change articles appear in the Tanzanian newspapers prominently.

The present study was conducted to analyse the level of prominence given to climate change information by six Tanzanian newspapers published for a span of 10 years between 2006 and 2015. In this context, climate change information includes various aspects of climate change phenomenon such as change of rainfall and temperature patterns, frequency and intensity of weather events such as droughts and floods as well as their effects, warning signals for extreme events, seasonal forecast and all other information related to the consequences of climate change, climate change education and awareness and mechanisms for climate change adaptation, coping and mitigation (IPCC, 2007; Mudombi et al., 2014; Nzeadibe et al., 2011). Other scholars, for example, Carvalho and Burgess (2005) and Schäfer et al. (2014), have considered extreme weather conditions as particularly relevant because they have high news value due to the potential damage they cause to the countries vulnerable to the consequences of climate change and because they are often connected to climate change through news media for creating awareness. Specifically, this article focuses on the level of prominence accorded to climate change articles by Tanzanian newspapers based on their ownership type and language orientation, challenges that impede prioritisation of climate change information in Tanzania newspapers and the trend of priority accorded to climate change information in Tanzanian newspapers.

Theoretical framework

This study was anchored around the agenda-setting theory. According to Wagner and Payne (2017), agenda setting refers to the idea that media such as newspapers can create

public awareness and concern for particular issues by focusing attention on them. The theory was originally proposed by McCombs and Shaw (1972) whose effects were mainly related to political issues. However, nowadays the effects of the theory in question are also related in many other issues including climate change (Liu et al., 2011; McDonald, 2009). This theory assumes that by giving a prominent treatment to an issue such as climate change which is highlighted by its placement in the newspapers, the audiences will attach an importance to that issue and start to think on that direction. According to Brosius and Kepplinger (1990), Schooler et al. (1996), Lim (2010) and Granner et al. (2010), if articles are presented prominently, that is, by placing them on the front page of a section and in the first section of the newspaper, they can attract more readers than do articles presented less prominently as those at the inside parts of the newspaper. Since the main purpose of this study was to analyse the degree of prominence that climate change information is accorded in the Tanzanian newspapers, the agenda-setting theory is appropriate. The theory was used to guide the study in the formulation of research objectives, research questions and preparation of research instrument (code book).

Methods

This study used a triangulation of both quantitative content analysis and in-depth interview methods. Newspapers were quantitatively content analysed for a prominence aspect of newspapers articles for a period of 10 years. Content analysis is a research approach that systematically and objectively describes and quantifies phenomena, especially manifest communication content (Krippendorff, 2004). This was supported by in-depth interviews with newspapers' editors and journalists. The unit of analysis was climate change articles published in the newspapers which explicitly mentioned terms associated to 'climate change', 'global warming or greenhouse gases' or '*mabadiliko ya tabia nchi, ongezeko la joto duniani au ongezeko la hewa ukaa*' in Kiswahili. The key terms used include 'adaptation, coping and mitigation strategies to climate change' (*mikakati ya kukabiliana na mabadiliko ya tabia nchi*) and the impacts of climate such as changes in rainfall patterns (*mabadiliko ya vipindi vya mvua*), drought (*ukame*) and floods (*mafuriko*). The level of prominence was determined by the specific positions or placements of articles referring to climate change on the pages of a newspaper. Climate change articles that appeared on the front pages were regarded as the most prominently presented as compared to those appeared on the inside and back pages. The level of prominence attached to the newspapers was then measured by calculating the percentage of climate change articles which appeared in the front pages against the total number of articles containing climate change information in the all pages of newspapers.

The study population comprised of 39 registered newspapers (URT, 2016) published in Tanzania between January 2006 and December 2015. It also comprised of newspapers editors and journalists. Six registered newspapers, six news editors and six journalists were purposefully selected for the study. The newspapers were selected based on their mixed news coverage, reach and countrywide circulation, existence for at least 10 years (between January 2006 and December 2015) and consistency in publishing their editions. Newspapers were also considered for selection based on the ownership type,

Table 1. Selected newspapers.

	Selection criteria						
	Ownership		Language		Frequency		Publishers
Newspapers	Government	Private	English	Kiswahili	Daily	Weekly	
Daily News	x		x		x		Tanzania Standard News
Guardian		x	x		x		IPP Media
Habari Leo	x			x	x		Tanzania Standard News
Mwananchi		x		x	x		Mwananchi Communication Limited
Rai		x		x		x	New Habari Corporation
This Day		x	x			x	IPP/Media Solutions

language orientation and frequency of publication and publishing companies (Table 1) so as to minimise biases. Newspapers slanted completely on religious, politics and sensational issues were not considered for this study.

The referenced time period from 2006 through 2015 was purposively selected because this is the period in which milestone achievements and important national and international events were marked on climate change. Such events include but not limited to the formulation of National Programme of Action (NAPA) in 2007 (URT, 2007), which calls for identification of immediate and urgent climate change adaptation actions that are geared towards long-term sustainable development, the launching of National Climate Change Communication Strategy (NCCCS) in 2012 (URT, 2012), the Stern Review on the Economics of Climate Change (SRECC) in 2006 (Stern, 2008), the Kyoto Protocol which was revised in July 2006 and in March 2008 (Sampei and Aoyagi-Usui, 2009), the United Nations Climate Change Conference which was held in Copenhagen in 2009 (Cantley-Smith, 2010), release of IPCC reports in 2007 (Barkemeyer et al., 2017) and signing of Paris accord in 2015 Conference of Parties (COP) (United Nations Framework Convention on Climate Change (UNFCCC), 2020).

To obtain the total number of newspaper editions for both selected daily and weekly published newspapers, firstly, four daily newspapers were picked for 365 days in a year for a period of 10 years giving a total of 14,600 newspaper editions. Secondly, two weekly newspapers were purposefully selected for 4 days from each month for 10 years giving 960 editions. Therefore, the total sample size for both daily and weekly newspapers was 15,560 editions. To obtain the final study sample for all four daily newspapers, the study adopted a composite sampling in which a year was divided into four quarters. Composite sampling technique is a method in content analysis studies whereby the researcher constructs a composite week/month in the sample (Wimmer and Dominick, 2013). One month was then randomly selected from each quarter by using lottery method making a total of 4 months for each year. Two composite days that is Wednesdays and Saturdays were selected from each week in 4 months in a year. This procedure yielded a total of 1280 editions from four newspapers for the period of 10 years (Table 2). For weekly published

Table 2. Study sample.

Newspapers	Nb. of newspapers	Estimated total nb. of newspaper editions for all 10 years	Sampled nb. of newspaper editions per year	Total nb. of newspaper editions selected for all 10 years
Daily News	1	365 days × 10 years = 3650	2 days × 4 weeks × 4 quarters = 32	32 × 10 = 320
Guardian	1	365 days × 10 years = 3650	2 days × 4 weeks × 4 quarters = 32	32 × 10 = 320
Habari Leo	1	365 days × 10 years = 3650	2 days × 4 weeks × 4 quarters = 32	32 × 10 = 320
Mwananchi	1	365 days × 10 years = 3650	2 days × 4 weeks × 4 quarters = 32	32 × 10 = 320
Rai	1	4 days × 12 months × 10 years = 480	4 days × 4 quarters = 16	16 × 10 = 160
This Day	1	4 days × 12 months × 10 years = 480	4 days × 4 quarters = 16	16 × 10 = 160
Total	6	15,560	160	1600

Nb.: number.

newspapers, one edition per each newspaper for each week was used making a total of 320 editions. The final study sample of the selected newspaper editions was therefore 1600 editions which is 10.3% of the total population of 15,560 editions (Table 2). According to Wimmer and Dominick (2011), a sample size between 10% and 25% is recommended as acceptable when determining sample size in content analysis.

Data were collected from November 2016 to April 2017 through manual coding scheme adapted from Lynch and Peer (2002) and that of Di Gregorio et al. (2012) which are based on a predefined code book. The code book included information about identification particulars, publication dates, title of articles and position of articles (Figure 1). By the virtue of the archival quality of newspapers, the back issues of the print newspapers were obtained from Mzumbe University Library, Sokoine National Agricultural Library, Dr. Wilbert Chagulla Library, Tanganyika National Library, Morogoro Regional Library and the National Archives. The protocol consisted of manual scanning of each page of the selected newspaper editions for headlines containing key words related to climate change information.

To avoid subjective judgement that would result from a single individual to perform the task of coding, the content analysis was completed by two coders with a qualification in library and information science who reviewed hard copies of selected newspaper issues. To ensure that coding sheet instrument was reliable, content analysis pilot test for 30 newspapers editions and code book review were performed by coders and the researcher. Intercoder reliability test which determined the degree of agreement between the researcher and research assistants in the coding process was also conducted. Holsti's coefficient was calculated by dividing the total number of occurrences or agreed on values for each variable into the sum of the responses of each coder for the same variable and thus

Identification particulars	Coders' name	. . . . .
	Newspapers name	. . . . .
Publication date	Date of publication	. . . . .
	Day of publication	. . . . .
	Month of publication	. . . . .
	Year of publication	. . . . .
		Total number of articles
Published articles on climate change	. . . . .	. . . . .
Position of article :	Front page . . .	. . . . .
	Inside page . . .	. . . . .
	Back page . . .	. . . . .

Figure 1. Code book adapted from Lynch and Peer (2002) and Di Gregorio et al. (2012).

an acceptable intercoder reliability which fall between 0.75 and 0.80 was achieved as supported by Holsti (1969) and Neuendorf (2002). Quantitative data were analysed based on descriptive statistics including frequencies, means, percentages and inferential statistics such as Chi-square test. Qualitative data were subjected to content analysis.

Results and discussions

Level of prominence accorded to climate change information in Tanzanian newspapers

A total of 1600 newspaper editions were analysed yielding a total of 81,162 articles. The study found that 30% of all published articles were on entertainment, followed by articles on miscellaneous issues (24%), advertisements (223%) and business (19%). Only 0.84% of all published articles covered information on climate change (Table 3), suggesting that climate change information was poorly covered in the Tanzanian newspapers.

Table 3. Number of different articles published in Tanzanian newspapers.

Nb. of articles ($N = 81,162$)

Newspaper	Advertisement	Business	Climate change	Crime	Entertainment	Miscellaneous	Politics	Total
Daily News	5349	6434	138	270	4327	5466	250	22,234
Guardian	5834	4980	157	489	8140	4814	402	24,816
Habari Leo	2391	1205	132	484	5723	4386	315	14,636
Mwananchi	4333	2684	139	314	5945	4523	359	18,297
Rai	112	0	26	53	104	118	143	556
This Day	84	78	92	99	84	101	85	623
Total	18,103	15,381	684	1709	24,323	19,408	1554	81,162
%	22.30	19.00	0.84	2.11	30.00	24.00	2.00	100

Nb.: number.

Results indicate further that of the 684 articles on climate change, only 53 (7.6%) articles were placed in the front pages of the newspapers. This gives a yearly average of 5.3 articles for all newspapers and only 1 article for each newspaper per year, whereas the majority (631, 92.25%) articles in climate change were randomly placed in the inside pages (Figure 2). Chi-square test was used to determine whether significant differences existed between the locations of number of articles in front pages and inside pages (Table 4). The test ($\chi^2 = 10.000$; df = 1; $p = 0.002$) was significant, which means that significant differences exist.

These findings suggest that climate change information was not given the necessary priority in the Tanzanian newspapers as most of the articles were largely confined to the inside pages of the newspapers. It implies that Tanzanian newspapers attached a low level of prominence in the coverage of climate change information for the period under study. This failure to accord the necessary prominence to climate change information suggests that Tanzanian newspapers did not effectively play their role of publishing climate change information conspicuously for informing, educating and enlightening people about climate change-related issues.

With regards to language orientation, the findings of this study indicate that Kiswahili-published newspapers (*Mwananchi*, *Habari Leo* and *Rai*) placed 26 (3.8%) articles on climate change in their front pages. *Habari Leo* had 22 (3.2%) and *Rai* had 4 (0.6%) articles. On the other hand, English-published newspapers (*Daily News*, *Guardian* and *This Day*) placed 26 (3.8%) articles in their front pages. *Guardian* had 22 (3.2%) and *This Day* had 4 (0.6%) articles (Figure 2). Although English newspapers in this study were expected to have placed more articles in their front pages because they are broad sheets with larger carrying capacities than their counterparts Kiswahili newspapers, results indicate that climate change was not a prominent topic in both Kiswahili and English newspapers. Furthermore, observations indicate that *Daily News* and *Mwananchi* which are popular newspapers in Tanzania did not place any article slanted to climate change in their front pages in all 10 years.

Based on the ownership type, the findings indicate that government-owned newspapers (*Daily News* and *Habari Leo*) placed 22 (3.2%) articles in climate change in their front pages (Figure 2). Despite the fact that both *Daily News* and *Habari Leo* papers are expected to be used by government officials for giving prominence to government press releases and various policies related to climate change issues, this was however not the case. These findings are contrary to Media Sustainability Index (2012) which argues that public media such as newspapers fill gaps left by private newspapers by providing more information that the private media often ignore. On the other hand, privately owned newspapers had 30 (4.4%) articles positioned in the front pages. The *Guardian* had 22 (3.2%) articles, *Rai* 4 (0.6%) and *This Day* 4 (0.6%) articles, while *Mwananchi* did not post any article in climate change in her front page.

Challenges in presenting climate change information prominently in Tanzanian newspapers

The findings from in-depth interviews with newspaper journalists and editors show that the prominence of climate change information in Tanzanian newspapers was affected by

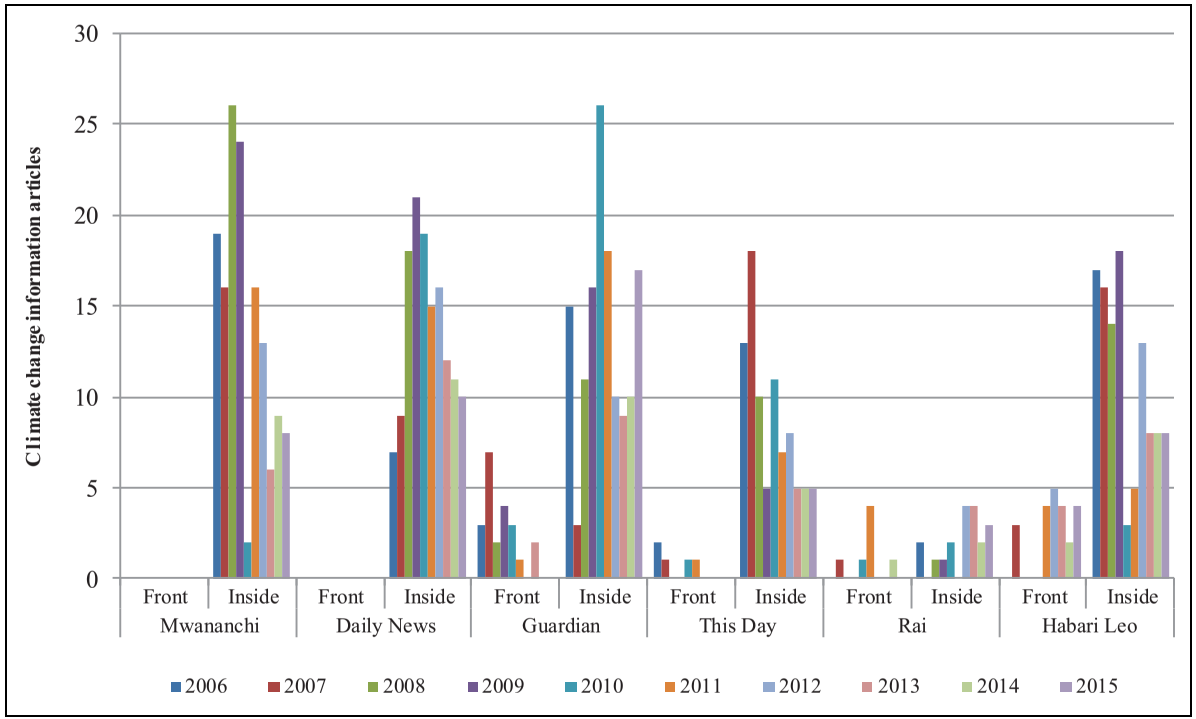

Figure 2. Front and inside pages' placement of climate change articles in Tanzanian newspapers.

Table 4. Test of difference between the locations of number of articles.

Ranks		Friedman test			
Locations	Mean rank	*N*	Chi square	df	Asymp. sig.
Front pages	1	10	10.000	1	0.002[a]
Inside pages	2				

[a]Significant at 5% level of significance.

newspaper editors' attitude, low understanding of climate change issue, the need to gain revenue, lack of a clear editorial policy as well as time and financial constraints. The decision to publish or not to publish articles submitted in the news rooms depends on the news editorial teams' attitude about the climate change articles submitted in the news rooms. One newspaper editor opined that '. . . I normally decide which news to cover and which ones to ignore'. This corroborates the findings in the studies by Ogessa and Sife (2017) and Ochieng (2009) who reported that lack of prominence attached to developmental information is associated to the attitudes of newspaper editors and owners who consider climate change as less important enough to attract the readers.

Poor placement of climate change articles in the front pages of the Tanzanian newspapers is attributed to the lack of understanding of climate change issues. This is mainly due to lack of relevant subject matter specialisation among journalists and editors. Scholars such as Wilson (2000), Ochieng (2009), Tagbo (2010), Painter (2010) and Corner (2011) argue that lack of understanding of climate change results into shallow, inaccurate and unattractive reporting of climate change articles that cannot be placed in the most prominent parts of the newspapers for attracting readership. Similarly, Nkya (2017) reported that the low prominence of developmental information in Tanzanian newspapers is associated with professional training challenges facing the majority of media outlets in the country.

With regards to the revenue issue, one newspaper editor commented that '. . . The newspapers media industry cannot survive without operating as business enterprise whose intention is to make revenue. We create revenue from what we publish. As a news editor I always try to place the most attractive articles in the most visible parts of the newspaper that make our newspaper editions to attract buyers'.

According to Mugwisi (2015), media houses are seen as profit-driven entities and thus editors need to prominently place more attractive articles to sale their newspapers.

Lack of editorial policy can affect placement of climate change information covered in the print media. In one of the interviews, a journalist pointed out that

> . . . I may cover stories in climate change but I find it very difficult to get my stories published because of unclear media's policy issues.

This is also confirmed by Elia (2019) who reported that news media lack specific editorial policies on climate change coverage. It is the newspaper editors who in most cases make decisions on which news to be published as front-page stories. In the absence

of editorial policy, newspaper editors make biased decisions because the criterion used to allow or reject articles to be accorded the prominence remains unclear.

Lack of prominence of climate change information in Tanzanian newspapers is also associated with time and financial constraints. Newspaper journalists revealed that because of the shortage of time, they fail to seek, cover and cross-check properly for all sources of their stories for ascertaining the quality of information they collected because of working in deadlines. Inadequate financial resources inhibit newspaper journalists to move out of their offices to cover climate change information from various sources. Such complaints about time and financial constraints have also been reported by other scholars (e.g. Harbinson et al., 2006; Mare, 2011).

Trend of priority accorded to climate change information in Tanzanian newspapers

Figure 2 shows an overall Tanzanian newspapers fluctuating trend in prioritising climate change information. The findings indicate that the trend of prioritising climate change articles had a sharp rise in the year 2006 and reaching the peak in 2007. The findings further indicate that the priority attached to climate change articles experienced a downward trend in the year 2008 and then there was a rising trend in the year 2009, followed by a falling trend in 2010 and then there was rising trend to 2013.

The trend of priority accorded to climate change is attributed to the occurrence of both national and international events and milestones achievements on the context of climate change. National wide, the year 2006 and 2007 were the time period when severe drought hit many parts of Tanzania which was followed by the introduction of NAPA in 2007 (Hassan et al., 2014; Hepworth, 2010; Salanga, 2017; URT, 2007). Additionally, the launching of NCCCS was done in 2012 (URT, 2012). Internationally, the rising trend in prioritising climate change in Tanzanian newspapers for the years 2006 and 2007 may be associated with the SRECC in 2006 (Stern, 2008) and the call for international conference which led to the revision of Kyoto Protocol in 2006 (Sampei and Aoyagi-Usui, 2009) and release of IPCC reports in 2007 (Barkemeyer et al., 2017). Rising trend in priority in the year 2014/2015 is also attributed to the signing of the Paris accord at 21 COP in Paris on 12 December 2015 (UNFCCC, 2020). Furthermore, the findings show that there was a falling trend of prioritising coverage of climate change information in Tanzania newspapers for the years 2014 and 2015, which may have been attributed to the political activities in the country. In one of the key informant interview, one newspaper editor pointed out that

> . . . In the year 2014 there was a local government election, constitutional referendum which was then followed by the general election in 2015, thus most of the journalists were involved in covering and reporting political issues.

Conclusion and recommendations

Front pages are generally important sections in the newspaper which can be used to set agenda for the public. In spite of the fact that climate change is a newsworthy, it did not

however feature prominently in the Tanzanian newspapers for a period of 10 years between January 2006 and December 2015. This is evident as a large proportion of climate change articles were positioned in the inside pages leaving front pages with a very minimal prominence. This inadequacy of prominence accorded to climate change information in the Tanzanian newspapers raises a concern when viewed against their abilities as one of the disseminators of information in their reportage.

The study recommends that newspaper media houses should have editorial policy that will ensure that they have a social responsibility of reporting developmental issues including climate change information in the prominent parts of their newspapers for a much more wide public access and dissemination. It is recommended further that, there is a need for the provision of specialised trainings such as climate change journalism to news editors, journalists and reporters. Such knowledge will not only ensure the availability of specialised editors, journalists and reporters in climate change science but also equip them with the writing styles and skills for enabling them to produce more appealing climate change stories that will attract its front page placement status for setting an agenda in the direction of climate change adaptation, coping and mitigation mechanisms. It is also recommended that whereas newspaper media houses need to attach high prominence to news that drive revenue for them to survive, they should also realise with keen interests the threat brought about by climate change to humankind and thus give it the level of prominence it deserves. This can be a driving force for the newspaper editors to motivate journalists by encouraging them to submit articles in climate change journalism.

Contribution of the study

This study has generated information that may influence newspapers owners, journalists and news writers or reporters to cover and place climate change information in the prominent positions of their newspapers to enable easier communication of the information to the targeted audiences. Thus, by giving more prominence to climate change information in the print media, particularly newspapers can contribute to agenda setting for public discussions in respect to climate change adaptation, coping and mitigation mechanisms in Tanzania.

Avenues for future research

The research for this study was limited to six Tanzanian newspapers whose results may lack generalisation for other media outlets and information; hence, there is a need for further research. A study to analyse the prominence of other developmental information such as health and agriculture in Tanzanian newspapers and in other media outlets such as television and radio among others is of potential interest. A qualitative study that will come up with reasons as to why Tanzanian newspapers do not prioritise coverage of climate change information is also of potential interest.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author received financial support for the research.

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