NUMBERS AND THE TRUTH? DAILY NATION'S PIONEERING OF DATA-DRIVEN ECONOMIC NEWS SUB-EDITING

Mark Kapchanga Kwemoi, Prof Hellen Mberia and Dr Julius Bosire

IPRJB
INTERNATIONAL PEER REVIEW
JOURNALS AND BOOK PUBLISHERS

Numbers and the Truth? Daily Nation's Pioneering of Data-Driven Economic News Sub-Editing

Mark Kapchanga Kwemoi

Prof Hellen Mberia

Dr Julius Bosire

Jomo Kenyatta University of Agriculture & Technology

Abstract

Purpose: In the wake of intensified production of fake newspaper content, this paper attempts to investigate the role that numbers play in the sub-editing of economic news, anchored on three main objectives: (a) To investigate the ways in which numbers used in economic news content are structured and cleaned, (b) To examine if some types of economic news numbers are transformed and formatted more significantly than others, and (c) To evaluate if certain economic news numbers are more susceptible to modifications than others.

Methodology: Through systematic secondary research, blended with contextualised insights of fieldwork, the study examined various ways in which numbers used in Daily Nation's economic news articles undergo additions, deletions, conversions, truncations, replacements, among other adjustments, prior to publication. To be as concise as possible, the study zeroed in on front-page, headline, kicker and briefs in a sample of 120 articles published between June 1, 2022 and December 31, 2022.

Findings: The study established that despite sub-editors being the heart of news processing — who not only fact-check but also act as the last line of defence — majority of them labour with putting to use quantitative elements, thereby accelerating the dissemination of flawed content in newsrooms in Kenya.

Unique Contribution to Theory, Practice and Policy: This study showed that media has the power to shape public thought and set the agenda, thereby validating the Lippmann's Theory of Public Opinion Formation. Policymakers will find the outcome of this study useful because it will guide them to propose intense training to media actors to hone their numerical competence.

Keywords: *Economic News, Daily Nation, Fact-Checking, Data-Driven Journalism, Sub-Editing; Numbers, Fake News, Kenya.*

INTRODUCTION

Sub-editing is one of those often-overlooked (Vandendaele & Jacobs, 2014) cogs in newswriting that is predominantly affiliated to the offstage of the media. It is no wonder Wizda (1997) refers to newspaper sub-editors as the forgotten stepchildren of the newsroom just as Ellis (2001) christens them as the newspaper's unsung brain trusts. Yet, it is the sub-editors who carry out the draining work of news production that entails the collection, selection, arrangement, reviewing and enriching of content for publication.

Scholars say it is the sub-editors who bear the brunt of a messed-up copy as they are the last line of defence who afford protection to the newspaper against any liability. In consequence, these media actors not only cut copy to fit but they also ascertain the accuracy (Gupta, 2003). It is broadly accepted fact that it is also in the course of sub-editing that an article's themes and angling are refined, purified and made congruous with the standing and flair of the media outlet.

Essentially, sub-editors are the readers' allies in the newsroom who facilitate and arouse their reading encounter (Vandendaele, 2018). But the print media's sub-editing landscape has been transmuting as market pressures surge, resources diminish while deadlines grow exponentially (Vandendaele, 2020), bringing to the fore the rare yet compelling discourse about the critical roles sub-editors ought to play in the era when quantitatives have turned out to be ineffaceable in news production

Shifting Newspaper Editing Terrain

Technology, demographic and consumer patterns are dramatically changing the print media landscape in the world (Sama, 2019). From buying a newspaper to opening customised news app on the smartphone and tablets, it is conclusive that the digital transformation of the media industry has taken off (Gül, Ertürk & Elmer, 2020). The advances in the industry have been accelerated by the changing behaviour, preferences and expectations of news consumers, particularly among the ever-impatient youth whose demand for access to content is instantaneous and fast-changing as argued by Shin (2020).

These changes continue exerting huge pressure on print media reporters, sub-editors and editors; overwhelming demand for accurate content that can drive the sound decision-making behaviors of its audience, especially now when bias and exaggeration are closely and firmly knitted in media's fabric. Scholars argue that newspaper bias can either originate from the supply side to reflect the preferences of journalists (Baron, 2004), editors or owners (Besley & Prat, 2006) or stem from the demand side, and reflect the news providers' profit-maximising alternative to cater for the preferences of the news consumers Mullainathan & Shleifer (2005). What, therefore, this means is that the more accurate the news, the more valuable is its source to the public.

The acute need for print outlets to gather and deliver more accurate, clear and flowing information have thus become paramount in newsrooms in a bid to help maintain a newspaper's credibility and quality, besides jacking up the public's reading experience. This has brought on to the table and aroused conversation on the role sub-editors need to play in purifying and nutrifying content at a time newspapers are struggling due to diminishing readership (Vandendaele, De Cuypere, & Van Praet, 2015), particularly now when the news industry has been clouded by a torrent of false and misleading information (Lazer, *et al.*, 2018; Pennycook & Rand, 2021).

Undoubtedly, the proliferation of misinformation in the news ecosystem can harm a society. It

not only causes distrust in the media, undermines the democratic process and inflames social conflict but also discredits science. It is so dire in the context of a pandemic when the public needs reliable and accurate information to make critical decisions that can affect their well-being. For instance, research by Kim & Tandoc (2022) showed that 35% of the forwarded messages on Whatsapp were based on falsehoods about COVID-19 in Singapore.

Strömbäck, *et al.* (2020) argue that the dangers of misleading information are most acute when citizens believe that false news is factually accurate, and this is especially so because their evaluative criteria depend upon beliefs about the ideal society, which are inherently contested. The information overload experienced today has not made things any better. In contemporary high-choice media environments, the degree to which the public trusts the news media and how much it matters for their use of different types of media is leaden. Despite being nearly impossible to define, operationalise and even measure news quality, Bachmann, Eisenegger & Ingenhoff (2022) say quality media content is important not only for its own sake but also for its political implications.

The sticky issue of news quality may be more pressing now than ever. But it is not a new subject. According to Marquez (1980), newspaper accuracy — particularly of the headlines of hard news stories in relation to their contents — has been an object of intensive study for many years. Bogart (2004) kicked off a debate when he pondered if journalism quality can be measured in the context of newspapers and whether or not that matters. Whatever the criteria they use, the conclusion made was that a newspaper's investment in its news operation is likely to yield a better return. An often-cited way quality of media content can be assessed is through source diversity who end up feeding the media with relatively accurate and richer information for an audience that is these days deeply informed on issues.

With volatile politics (Fiseha, 2019) and corporate dynamics, trust is a constant requirement in the public's consumption of quality news (Knudsen, *et al.*, 2022), and yet it remains a challenge to achieve that today. But because there is payback in investing in quality journalism (Bleyer-Simon, 2022) as newspaper readers are willing to pay for it as was held by Groot Kormelink (2022), media outlets have been in the race to make first-class content their strongest selling-point. This is in appreciation that providing high-quality content will attract, retain and build a relationship.

World's leading papers such as the *Financial Times*, *The Economist*, *New York Times, Wall Street Journal*, among other outlets, for instance, have made it a conventional practice to offer their readers quality journalism (Benson, 2019) alongside trusted, unbiased insights and valuable analytics that add weight to content. This has made it easy for readers to want to come back to. Indeed, as scholars aver, it is the quality of journalism that will either make or break the print media industry (Kim, Song & Kim, 2020).

One way that these listed newspapers have managed to produce quality content has been in the investment in solid sub-editing (Bisaillon, 2007) to intervene with catchy furniture that will enhance circulation. Copies have had to undergo heavy rewrite, accompanied by powerful headlines, standfirsts captions and catchy first paragraphs, to ensure they are clear, non-annoying and appetising to readers. New ingredients have also been brought in to boost sales, including information graphics, striking photos, numbers, short video clips, glance boxes, numbers (Hannaford, 2022), among other visuals, to explain, illuminate, enrich, verify and corroborate the news disseminated to the public.

Yet, despite being one of the most fashionable and current form of data employed in

newsrooms to boost the credibility and accuracy of content (Anderson, 2018) they are routinely and frequently abused, hence failing to meet their desired purpose. In particular, numbers have gained the notoriety of being misused, fabricated and manipulated (Tang, Wang & Yi, 2023). This is upon which this study is anchored on. This paper — which will be guided by the Lippmann's Theory of Public Opinion Formation (Arnold-Forster, 2023) — will be probing into the ways in which numbers used in economic news content at the Kenya-based Daily Nation Newspaper are structured and cleaned, if some types of economic news numbers are transformed and formatted more significantly than others, and, if certain economic news numbers are more prone to modifications than others.

Data Collection — Penetrating the Newsroom

Since sub-editing is still very much rooted in the newsroom we observed (Vandendaele & Jacobs, 2013), it is the location par excellence to study the daily practices of newspaper staff. Data were drawn from a period of fieldwork at the Daily Nation, Kenya's largest paper in circulation. The researcher documented the news production process by means of field notes and semi-structured interviews (Emerson, Fretz, & Shaw, 1995). In total, the data set comprised field notes, 5 video/audio recordings of daily story meetings, and 23 interviews with 11 sub-editors, 7 journalists, and 5 other newsroom professionals (editors-in-chief, desk chiefs, layout editors).

Collecting materials from the newsroom, participating in day-to-day editing practices, and being part of economic news production team, facilitated the gaining of insights into the writing and editing process that the researcher could not have attained otherwise. Moreover, the added dimension of the researcher's journalistic experience proved to be most beneficial for this article, especially when it came to the all-important issue of access.

In the second phase of data collection, the researcher focused on gathering the economic news articles in their various phases of production. Since the study was interested in the changes that a news number undergoes in the sub-editing stage, the researcher decided to focus on the articles' initial versions to the sub-editors after the writing stage (Rohman, 1965) and their final versions. For the purpose of this study, the researcher focussed on news articles picked from the first 12 pages of the Daily Nation newspaper.

Not only do the articles in this segment contain the hard news stories, they are mostly produced in-house accompanied by data unlike other segments of the newspaper that contain more stories produced by freelancers or picked from international press and agencies. From that initial section, the scholar took four types of news article into consideration: Front-page, headline, kicker and briefs.

The categorisation of these four types was guided fully by fieldwork. By attending daily editorial meetings and taking part in the sub-editing process, the researcher was introduced to the news article typology at work in the newsroom. The terms used to label the different article types were embedded in the sub-editors' and the layout designers' everyday vernacular. The researcher randomly selected six articles for each of the four types published between June 1, 2022 and December 31, 2022 because the researcher considered this as a period when many economic activities took place resulting to more production of news.

Coding

For each of the 120 articles, the researcher annotated its type, the number of the page it appeared on, the date on which it was published, and its version numbers. Numbers used in

both the initial and final copy versions were also added. The articles were then broken up into units with every unit assigned a unique identification number. Within every unit, the researcher highlighted the actual interventions, that is, what has been altered in the sub-editing phase.

Often more than one intervention occurred in a single unit. After careful comparison of the initial and final versions of every unit, the scholar identified four categories among the detected interventions. They were deletion, addition, replacement and translocation. When a unit had not been altered in the post-sub-editing phase, the researcher tagged it "null".

This study filled conceptual, contextual and methodological gaps. Under the conceptual framework, this research managed to address the role that numbers play in the publication, and hence, the spread of fake economic news in Kenya's Daily Nation newspaper. While it is explicit that numbers enrich media content, this study managed to pay a specific focus on sub-editing and how data is abused and misused to convey warped information to the public. Through this, the researchers addressed the contextual gap. Meanwhile, the methodological gap was filled by ensuring that there are rich insights, in a fairly balanced way, in both quantitative and qualitative approaches.

RESULTS

The study's sample includes a total of $N = 9,648$ interventions across all the 120 articles under consideration. It was established that the intervention types are not equally distributed (chi-square goodness-of-fit test $\chi^2 = 306$, $df = 4$, $p < .0001$). More specifically, the number of additions and replacements is significantly higher than what one would expect if the proportion of interventions were equal, while the number of truncations is much lower than expected. Further, the results indicate that the number of truncations is much lower than expected.

The research found a significant association between type of article and type of intervention ($\chi^2 = 95.6$, $df = 15$, $p < .001$), an indication that different news pieces receive different intervention types. Further, there were significantly more additions in both the front-page news pieces and the headline pieces. Kickers had a significantly larger number of truncations while briefs had a significantly larger number of deletions.

Further, the results show that the proportion of interventions is not equally distributed among the news article types ($\chi^2 = 195$, $df = 7$, $p < .001$). Based on content, length, placement on the page, and layout, the researcher considered front-page, headline, and kicker economic news articles as being the most highly visible to the reader. Research showed that front-page and headline articles receive significantly more interventions than would be expected if all proportions were equal. On the other hand, data indicated that kickers and briefs receive significantly lower number of editorial interventions.

Finally, the study established that numbers employed in a news piece are more prone to modifications, especially additions and deletions, in the sub-editing stage than others. Data indicated that 72% of all interventions occur in the headline, kicker and quote of an economic news item. Clearly, this indicates there is a significant relationship between the types of intervention and the article parts ($\chi^2 = 292$, $df = 17$, $p < .001$).

The researcher noticed how deletions of numbers are predominantly observed in an article's body. The front-page pieces and headline articles experience significantly more replacements

and significantly less additions. On the other hand, kickers significantly feature additions while the briefs are significantly associated with additions, more than other types of intervention.

When it comes to the headline, we observed two things: First of all, the kicker with some numbers that were seen to add value to the story had been provided in the un-subbed in just three articles, but was deleted and not replaced in all three cases. An audit of the subbed headline articles showed that even though in 76 out of 90 cases a headline, blended with some numbers, had already been written in the initial version, only in 13 of those cases were not changed during sub-editing. Alterations were made in all 76 provided headlines, and most of those modifications were significant, ranging from the replacement of a few numbers to a complete change of headline.

In the entire sample, only three kickers had been written by the journalist in the pre-sub-editing version, whereas in the published versions of the article, there are 38 to be found. Moreover, the three kickers that had been provided were actually altered in the sub-editing stage. Worth mentioning is that in all the 120 articles in the sample, a byline had been provided before the sub-editing stage, that is, by the journalist. Depending on the type of news article, bylines were sometimes cut back to "Staff Reporter", "Correspondent", "Special Correspondent", among others, hence concealing the identity of the journalist.

Discussion

At the sub-editing stage, it is usually assumed that editors trim more than add information in content so as to make the stories fit the allocated space (Ellis, 2001), which is usually limited. In fact, research shows that a substantial amount of unnecessary content is deleted at the sub-editing phase without the story losing its original meaning. During the interview, one economic news reporter declared:

I am aware that sub-editors work is to ensure that our articles fit the allocated space in the paper. As a result, I try as much as possible to squeeze all the needed information in a story so that in case of any editing, it does not lose meaning. This is particularly critical in the cases where a story has data that is intended to explain an issue or even enrich the piece. To guard against lazy sub-editing that may harm my story, and therefore stain my byline, I usually engage the sub-editor working on my story so that I have a say on what to add or delete.

However, the research showed that while words are deleted in a raw copy, numbers and other forms used of data, are ruthlessly added, truncated, translocated or even deleted, thereby putting a story off the originally-desired track. This was vividly revealed by one of the respondents:

We get frustrated every time we use numbers and figures in our stories. While the intention is to explain, illuminate or enrich a story for our readers to get value for the news they buy, sub-editors end up abusing or misusing the data employed.

Another participant blamed the increased misuse and abuse of numbers to lack of numerical competencies among the sub-editors. The interviewee noted that most of the sub-editors in their newsrooms are English-savvy but lack knowledge in the use of numbers in stories:

So, wherever numbers are, they are unfairly deleted, resulting to an edited copy that is either incomplete or hanging, hence eroding the meaning of the news article. This has ultimately resulted in the production of news that misinform our readers.

Front-page news articles are featured on the newspaper's opening page, essentially to sell the paper. Headline news articles are placed prominently at the top of the pages to draw readers in further. Long articles contain news that's worthy of covering in more depth than a medium news article. It is, therefore, hardly surprising that a greater amount of work is done in these articles, specifically when it comes to front-page and long articles. As noted during the analysis, many more interventions were noted than in, for example, a news wire article. The significantly low number of interventions in both news wire articles and short news articles leads us to believe that the stakes aren't as high for those types.

These findings were corroborated by sub-editors, and are in agreement with the researcher's newsroom observations. The high-stakes front-page and headline news articles, however, were treated with a lot more care, not only because of their news value and prominent placement on the page, but also because this is "where a *sub* can shine." Moreover, the front-page news articles were always assigned to the most senior sub-editor on the newsroom floor that day.

Conclusion

Numbers play a central function in the transmission of veritable content. They corroborate, put in context and illuminate news. Yet, routinely, numbers are mishandled, misinterpreted, misused and abused, leading to the production of incorrect information. The situation, which is worsening, has been exacerbated by the push for publish-instantly-correct-later which has led to slackness in newsrooms to freely verify and interpret facts. Now, news has been commodified with journalists being condemned to the acquisition, repackaging and repurposing of content, occasionally attaching false authority to numbers (Kovach & Rosenstiel, 2007) in their rush to be first to the market.

Sometimes, numbers are sloppily constructed, or even cynically misrepresented, especially by editors, leading to misreporting of facts. With intensified use of data in the media, the wilful dissemination of misleading information has gained currency, threatening any sense of truth shared as everyone is entitled to his or her own "facts" (Wendling, 2018).

The goal for this study was to investigate the sub-editing phase in the era of intensified employment of numbers in news production. The researcher did this by exploring the micro-level practices during the sub-editing stage of the Daily Nation's economic news production process, based on an analysis of 120 articles. By comparing an article's "initial" version to its "final" version, the scholar first of all detected the main ways in which numbers are changed through addition, deletion, replacements, deletions, among other alterations.

The research disclosed that the interventions of numbers are intense in front-page and headline economic news articles, as they are considered premium articles. Moreover, it was noted that additions typically occur in kickers and briefs. This was connected to the power of eye-attraction that such pieces carry in terms of attracting the reader to reading a paper.

Overall, it was revealed that the sub-editors' work is more leaning towards cleaning a copy and making it fit the allocated space in a paper. The cleaning of a copy basically means making it ready for publication by ensuring the article under consideration is concise, complete, consistent, correct and clear. In a nutshell, sub-editors' core focus is how the final content. However, beyond the re-perspectivisation" (Linell, 1998) or recontextualisation (Oddo, 2013) of an article, sub-editors' weaknesses were glaring. Most of them appreciated the fact that they lack numerical competence to handle complex and complicated data, specifically numbers. As such, sub-editors have been held hostage by their reporters, editors, media owners and at times,

www.iprjb.org

the news sources, who exploit the sub-par quantitative knowledge to abuse numbers in driving their own agenda.

What this means is that print media must now engage independent experts with the competence desired in interpreting and explaining numbers so as to tame the rising cases of numbers being fabricated or deliberately mishandled to misinform the public. Such a route will help in the production of veritable content that will inform the decision-making of newspapers' audience.

REFERENCES

Anderson, C. W. (2018): Apostles of Certainty: Data Journalism and the Politics of Doubt. New York, NY: Oxford University Press.

Arnold-Forster, T. (2023): Walter Lippmann and Public Opinion. *American Journalism.* 40:1, 51-79, DOI: 10.1080/08821127.2022.2161665.

Bachmann, P., Eisenegger, M. & Ingenhoff, D. (2022): Defining and Measuring News Media Quality: Comparing the Content Perspective and the Audience Perspective. *The International Journal of Press/Politics*, 27(1), 9–37. DOI: 10.1177/1940161221999666.

Baron, D. (2004): Persistent Media Bias. *Journal of Public Economics.* 90. 1-36. DOI: 10.1016/j.jpubeco.2004.10.006.

Benson, R. (2019). Paywalls and public knowledge: How can journalism provide quality news for everyone? *Journalism*, *20*(1), 146–149. https://doi.org/10.1177/1464884918806733.

Besley, T. & Prat, A. (2006): Handcuffs for the Grabbing Hand? Media Capture and Government Accountability. *American Economic Review*, 96 (3): 720-736. DOI: 10.1257/aer.96.3.720.

Bisaillon, J. (2007). Professional Editing Strategies Used by Six Editors. *Written Communication*, *24*(4), 295–322. DOI: https://doi.org/10.1177/0741088307305977.

Bleyer-Simon, K. (2022): How quality journalism forgets about the marginalised. *European Journal of Communication*, *37*(4), 460–464. DOI: https://doi.org/10.1177/02673231221112725.

Bogart, L. (2004): Reflections on Content Quality in Newspapers. *Newspaper Research Journal*, *25*(1), 40–53. https://doi.org/10.1177/073953290402500104.

Fiseha, A. (2019): Federalism, development and the changing political dynamics in Ethiopia. *International Journal of Constitutional Law*. 17 (1), 151–176. DOI: https://doi.org/10.1093/icon/moz008.

Groot Kormelink, T. (2022): Why people don't pay for news: A qualitative study. *Journalism*, *0*(0). DOI: https://doi.org/10.1177/14648849221099325.

Gül, A., Ertürk, Y. & Elmer, P. (2020): Digital Transformation in Media & Society. DOI: 10.26650/B/SS07.2020.013.

Hannaford, L. (2022): The discourses of data journalism. *Journalism*, *0*(0). DOI: https://doi.org/10.1177/14648849221107803.

Kim, H., Song, R., & Kim, Y. (2020): Newspapers' Content Policy and the Effect of Paywalls on Pageviews. *Journal of Interactive Marketing*, *49*(1), 54–69. DOI: https://doi.org/10.1016/j.intmar.2019.10.002.

Kim, H. K., & Tandoc, E. C., Jr (2022): Consequences of Online Misinformation on COVID-19: Two Potential Pathways and Disparity by eHealth Literacy. *Frontiers in psychology*, *13*, DOI: https://doi.org/10.3389/fpsyg.2022.783909.

Knudsen, E., Dahlberg, S., Iversen, M. H., Johannesson, M. P., & Nygaard, S. (2022): How the public understands news media trust: An open-ended approach. *Journalism*. *23*(11), 2347–2363. DOI: https://doi.org/10.1177/14648849211005892.

Lazer, D. *et al.* (2018): The science of fake news. Science. 359. 1094-1096. DOI: 10.1126/science.aao2998.

Marquez, F. (1980): How Accurate Are the Headlines?. *Journal of Communication*. 30. 30 - 36. DOI: 10.1111/j.1460-2466.1980.tb01988.x.

Mullainathan, S., & Shleifer, A. (2005): The Market for News. *The American Economic Review*, *95*(4), 1031–1053. DOI: 10.1257/0002828054825619.

Pennycook, G., & Rand, D. G. (2021): The psychology of fake news. *Trends in Cognitive Sciences, 25*(5), 388–402. DOI: https://doi.org/10.1016/j.tics.2021.02.007.

Sama, R. (2019). Impact of Media Advertisements on Consumer Behaviour. *Journal of Creative Communications*, *14*(1), 54–68. DOI: https://doi.org/10.1177/0973258618822624.

Shin, W. (2020): Youth Media Consumption and Privacy Risks in the Digital Era. DOI: 10.4324/9781351015356-12.

Strömbäck, J., *et al.* (2020): News media trust and its impact on media use: toward a framework for future research. *Annals of the International Communication Association.* 44:2,139-156, DOI: 10.1080/23808985.2020.1755338.

Tang, X., Wang, Y. & Yi, H. (2023): Data Manipulation through Patronage Networks: Evidence from Environmental Emissions in China. *Journal of Public Administration Research and Theory*. 33 (2), 342–356. DOI: https://doi.org/10.1093/jopart/muac019.

Vandendaele, A. (2020): Designing the news: A practitioner perspective on the production values in newspaper sub-editing. *Journalism*, *21*(11), 1655–1675. DOI: https://doi.org/10.1177/1464884917743389.

Vandendaele, A. (2018): Trust Me, I'm a Sub-editor. *Journalism Practice.* 12:3, 268-289, DOI: 10.1080/17512786.2017.1291312.

Vandendaele, A., De Cuypere, L. & Van Praet, E. (2015): Beyond "Trimming the Fat": The Sub-editing Stage of Newswriting. *Written Communication*. 32(4), 368–395. DOI: 10.1177/0741088315599391.