

Chapter 66

Practicing Local Data Journalism: Opportunities and Obstacles

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ABSTRACT

The use of local data journalism has the power to fundamentally change local news. Local journalists can find vital insights, spot trends, and shed light on significant issues that have an impact on their communities by utilizing the power of data analysis, visualization, and narrative. This article studies the many facets and difficulties of local data journalism. The discussion highlights the fundamental role of training and possession of abilities in order to gather, evaluate, and present data in a way that appeals to regional audiences. Other areas that relate to local data journalism are also discussed.

INTRODUCTION

Since the introduction of information and communication technologies in journalism at the end of the previous century, substantial changes occurred in the profession that have resulted in its significant transformation. This is mainly fueled by the digitalization of the journalistic workflow and the introduction of additional dissemination channels for the news (Siapera & Veglis, 2012). Journalism has traditionally been seen as closely related to technology. It is worth noting radio and television that their introduction created new opportunities for the media organization that were based solely on printed editions to distribute the news content. But of course, news gathering, creation, distribution, and consumption were completely transformed with the introduction of the internet and its services (Spyridou, et al., 2013). This also resulted in the emergence of many new journalistic specialties (multimedia journalism, drone journalism, algorithmic journalism, etc.) (Diakopoulos, 2019; Ntalakas, et al., 2017; Tu, 2015) among which data journalism (Bounegru, & Gray, 2021; Gray, et al., 2012; Veglis & Bratsas, 2017), which require journalists to possess specific skills and use specialized information processing tools. At the same time, citizen journalism has increased competition, and traditional journalism organizations are under constant pressure to deliver more news faster (Allan and Thorsen, 2009). This means that journalists have to be very competitive in a very demanding market.

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Data journalism, which emerged and began to develop in the early 21st century, is now accepted as a recognized journalism specialty (Veglis & Bratsas, 2021). Many factors have contributed to the accession of data journalism, among which are the availability of data in digital format and also the abundance of data visualization and data management applications (Veglis & Bratsas, 2017). It has received a lot of attention recently in academic literature and the area of cutting-edge innovations in digital news production (Hermida & Young, 2017; Loosen et al., 2020; Weber et al., 2018). According to Gray et al. (2012) and Bounegru & Gray (2021), it is regarded as a journalistic discipline that illuminates the crucial role that numerical data plays in the creation and dissemination of news in the digital age.

Another type of journalism that is significantly related to data journalism is local journalism whose readership has declined in recent years (Wadbring & Bergström, 2017). Local journalism can be defined as news coverage in a local context (focusing on local issues and events) that interests people that live in a particular geographical region (Franklin, 2006). Local journalism topics typically include regional weather, politics, business, and human-interest stories (Meyer & Tang, 2015).

The connection between local journalism and data is not a recent phenomenon (Stalph, Hahn & Liewehr, 2022); during the previous 15 years, data journalism practices have been adopted by local media (Ali, 2014) supported by the advancement of a vigorous ecosystem of hyper-local data journalism (Stalph & Borges-Rey, 2018). Before the digitization and institutionalization of data journalism, local journalism organizations were fertile ground for data-driven practices (Coddington 2015; Meyers, 2002). Similarly, Boyles (2020) supports the advantages offered by the utilization of data storytelling in framing significant local issues for the audience. The problem is that local media face significant barriers to developing local data journalism that could have significant local but also hyper-local potential (Borges-Rey, 2020).

BACKGROUND

The Growth of Data Journalism

The concept of data journalism is not new. It emerged gradually due to the introduction of information and communication technologies and the abundance of data. Another term that is employed as synonymous with data journalism is data-driven journalism (Bradshaw, 2017).

In the late 20th century, using data to write a news article was a quite difficult process that required skills that were not usually possessed by the average journalist. Journalists usually relied on information obtained from various sources (government sources, surveys, expert opinions, etc.). It is worth mentioning that there were some cases of investigative journalism where journalists were able to exploit data and publish the results in articles, but that was not a common practice. Nevertheless, conditions changed quickly due to the increasing amount of data that gradually became available through the internet, as well as the effective tools that became available to each user with the help of which they could analyze, visualize and publish large amounts of data (Sirkkunen, 2011).

Data journalism is a practice that initiates with data analysis and continues with data filtering and data visualization in a form that is directly related to the data journalism article's narrative (Lorenz, 2010; Rogers, 2013). A key element of data journalism is the production of news visualizations that in some cases supports interaction. Megan Knight (2013) defines a data journalism article as a story

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whose primary source consists of numbers or a story that includes significant elements derived from data or visualizations.

Based on the above and to highlight and give appropriate emphasis to the power of visualization as well as interaction, which are two defining factors in data journalism, the following definition for data journalism is proposed. It is the process of extracting useful information from data, writing articles based on the information, and incorporating visualizations (often interactive ones) that aid readers in understanding the significance of the article or enable them to find items of interest or relevance to them can be referred to as data journalism (Veglis & Bratsas, 2017).

In Europe, data journalism has seen significant expansion, particularly in countries such as the UK, Germany, and Sweden which are leading the way in integrating data-driven journalism practices into newsrooms (Appelgren & Nygren, 2014). European news organizations such as the Guardian's Datablog and BBC's Shared Data Unit have played a key role in pioneering data journalism techniques and fostering a culture of data literacy among journalists (Rogers, 2013).

Local Journalism - The Geographical Factor

The term local journalism concerns the coverage of local events that would interest the inhabitants of a particular geographical area. Local media organizations cover journalistically their region and facilitate residents to feel part of a community, bonded in part through local news, connected by more than geographical proximity or politically defined administrative boundaries (Nielsen 2015). Local news, unlike international or/and national news, covers the news of their communities and they focus mainly on local issues and events (Franklin, 2006). Topics covered by local journalism include stories of regional politics, weather, business, and human interest (Meyer, & Tang, 2015). The locality has been an important feature of news since the emergence of journalism; information about the place of origin is published at the beginning of each news story. This information increases the objectivity of the text; sometimes it is a confirmation of the journalists' presence on the scene (Rantanen, 2005). Like journalism more broadly, local journalism can often be not good, but it can also be tremendously important. Local journalism may not always play its roles properly, but those roles are important (Nielsen 2015).

The problem, however, is that the readership of local news has been declining in recent years as more and more news consumers receive their information in alternative ways (Wadbring, & Bergström, 2017). The business models on which local media rely are currently under tremendous pressure as readership declines, advertising decreases, and overall revenues plummet (Steblyna, 2018). Traditionally local newspapers' most important source of revenue was advertising. Additionally, since their editions were the main publication for their communities, they enjoyed substantial market power and, in some cases, operated very profitable businesses. But the shift to digital has decisively changed the landscape. Advertisers started investing in online advertising, which is controlled by large advertising companies offering low prices, precise targeting, and undivided reach. As a result, local newspapers were unable to remain competitive and their viability as businesses was challenged. (Jenkins & Nielsen, 2018). The lack of resources leads to a shortage of qualified journalists in local media and makes it difficult to cover daily issues (such as the municipality, for example). Local readers may lose important coverage elements without journalists who know the communities and the stories about them. For many influential journalists, the biggest threat facing journalism today is the disappearance of local journalism (Beutner, 2015).

New technologies allow local journalists to expand their focus, by adding international context. But in order to have community engagement, it is vital to be informed about the local environment. These media outlets are seeking new audiences and the most common decision they make is to adopt the tabloid format, while some are choosing another path: globalization on the one hand and digitization on the other allow them to change the geography of news.

Local Data Journalism

Local journalism has always have a connection with data (in most cases local data). Some of the first comprehensive data journalism projects had localism and proximity as key elements (Arias-Robles, & López López, 2021). According to Beiler, Irmer, and Breda (2020), data journalism seems suited for addressing issues with a local focus and enhances the coverage of these concerns.

In most countries, access to open and public data is growing. The majority of societal data is published as statistical or open data in various formats that are simple for journalists to access. These open-source statistics cover the majority of societal aspects, including the number of reported crimes (such as fatality causes, unemployment rates, academic achievement, etc.). Many of these data are available at a very detailed level (by the municipality, age groups, etc.) (Magnusson, Finnäs, & Wallentin, 2016). These local data are an important source of information for local data journalism as they can be used to produce data journalism articles that focus on a specific region and thereby exert control over the choices of local government (Pavlik, 2013).

Boyles (2020) recognizes the potential of data storytelling techniques that might help readers understand significant, local issues better. This is a key feature of local journalism practice (Beiler, et al. 2020). However, integrating data journalism is not an easy process for local media as they are not capable of implementing a practice that could support significant hyperlocal potential (Borges-Rey 2020).

It is clear that to realize these opportunities, local news organizations will need to invest in data journalism. The problem is that local news organizations have been severely affected by the economic crisis that has affected the journalism sector in recent decades and much more severely in the case of Greece. The reduction of staff creates a problem in the process of integrating data journalism into local media (Stalph, Hahn, & Liewehr, 2022).

Certainly, in most cases of data journalism articles, these were developed collaboratively with many journalists (Young, Hermida, and Fulda 2018; Stalph 2018; Loosen, Reimer, and De Silva-Schmidt 2020). It is also common practice for data journalists and expert correspondents to work together (Borges-Rey 2016; Hermida and Young 2017). The frequency of small teams of journalists is an indication of the difficulties small and medium-sized news organizations have when attempting data journalism (Young, Hermida, and Fulda 2018). The practice described above is one that will help local data journalism evolve, according to Stalph, Hahn, and Liewehr (2022).

ARTICLE FOCUS

This article focuses on the issue of local data journalism in regional media. Specifically, the current situation is described and the possibilities that the implementation of local data journalism by the Greek regional media may offer are explored. The problems that exist in the adoption of local data journalism by the regional media are also examined and solutions are proposed.

OBSTACLES AND RECOMMENDATIONS

Obstacles to Implementing Data Journalism in Local Media

Data journalism has emerged as a powerful tool for news organizations, combining data analysis, visualization, and storytelling to produce compelling and in-depth reporting (Coddington, 2015). However, implementing data journalism at the local level presents several unique challenges, which have been explored in the academic literature. This section includes a report on key findings related to the challenges faced by local media when implementing data journalism, focusing on issues related to data availability, resources, training, and ethical issues.

- **Data availability:** The lack of available, reliable, and comprehensive local data is a recurring theme in the literature on the challenges of local data journalism (Gray et al., 2012). In particular, scholars argue that while open data initiatives have proliferated globally, these efforts often prioritize national or international data, resulting in underdeveloped local data sources. As a result, local journalists face difficulty in acquiring and verifying local data, which can limit their ability to produce data-driven stories. In a study of data journalism in the US, it was found that out of 343 data sets, only 135, approximately 14%, were of local and regional origin (Lowrey & Hou, 2021). The lower frequency of local and regional data sources is because data journalists are increasingly challenged by the more detailed and local data they seek. Because federal data is more easily accessible than state- and local-level data, journalists have turned to it as a result (Lowrey, Broussard, and Sherrill 2019). The greater usage of pre-processed public data provided by national agencies would follow from this ease of access (Tabary, et al., 2016).
- **Resources:** Limited resources, particularly in terms of funding and staffing, are a significant barrier for local media in implementing data journalism (Appelgren & Nygren, 2014). Appelgren & Nygren (2014) note that local news organizations often struggle to balance the time-consuming nature of data journalism projects with day-to-day news production. This must be factored into the difficulty of hiring skilled data journalists and acquiring sophisticated data analysis tools within the constraints of local media budgets (Arias-Robles & López López 2021; Tong 2021). In Scotland, Wales, and Northern Ireland, regional data journalism was explored by Borges-Rey (2020), who discovered the importance of data requests for resolving community issues. Regional data journalism, particularly in Wales, lagged behind traditional media from a technology standpoint, although journalists in Northern Ireland were on pace with big companies. The implementation of data journalism in regional bureaux in the UK has been hampered in this situation by internal organizational constraints, such as editorial pressure or scarce resources. In the US, newsrooms were found to be constrained by time, resources, employees, and tools (Fink & Anderson 2015). De Maeyer et al. (2015) confirm the above findings and state that most of the barriers appear to be related to the way news organizations operate. Differences in the prevalence of data journalism seem to be related to the size of the news organization in question (Fink & Anderson 2015). These studies opine that organizational structures and their ability to absorb size growth (e.g., through additional staffing) are related to the professional duties of data journalists (Stalph, 2018).
- **Lack of training and skills:** The literature details the skills gap between the potential of data journalism and its actual implementation at the local level (Berret & Phillips, 2016; Appelgren & Nygren, 2014). Berret & Phillips (2016) highlight the need for training in data analysis, visu-

alization, and storytelling techniques, which are essential for data journalism but may be lacking among local journalists. Appelgren & Nygren (2014) highlight the difficulty local news organizations face in providing extensive training in data journalism due to limited resources and competing priorities. According to Beiler, Irmer, and Breda (2020), a lack of employees was also noted as a challenge for the sustainability of data journalism adoption in smaller newsrooms in Germany. Due to the economic crisis in the industry, some data journalism teams have ceased to exist. The study also claimed that when data journalists departed for larger companies, smaller-circulation publications would lose skill. The existence of a small and insufficient number of journalists trained in data-driven reporting was also reported in the Arias-Robles and López López study (2021), although they cited an improvement in the picture with the influx of younger generations of data-savvy journalists.

- **Ethical and legal concerns:** Ethical and legal concerns are crucial considerations in the practice of data journalism, particularly when dealing with sensitive or personally identifiable information. The collection, analysis, and dissemination of data in investigative journalism raise questions about privacy, consent, and data protection (Pavlik, 2013). The ethical responsibility of data journalists lies in striking a balance between public interest and individual privacy rights. Pavlik (2013) emphasizes the challenges of navigating these ethical and legal issues, especially for investigative journalists working with data. The increasing availability of large datasets and the use of advanced data analysis techniques pose risks of unintended disclosure or reidentification of individuals. Local journalists, in particular, may encounter unique difficulties due to their close connections to the communities they cover (Bounegru, et al., 2018). Local journalists should also consider the potential impact of their reporting on the relationships within their communities. Building and maintaining trust is paramount, and journalists may need to engage in open and transparent communication with the individuals and communities they cover. This can entail obtaining consent that has been informed, giving people the chance to review and amend their data, and responding to worries about privacy and potential harm.

Recommendations to Develop Local Data Journalism

Given the foregoing, it is clear that local data journalism has a huge potential for growth. Nevertheless, there are several obstacles that need to be overcome. Next some suggestions on how to support the development of local data journalism are presented and briefly discussed.

- **Investment in resources and infrastructure:** The issue of developing the resources and infrastructure that can support local data journalism is very important. This should include acquiring the appropriate tools, most often software, but also training journalists and hiring journalists who are more familiar with working with data to strengthen existing data journalism teams. In this way, local journalism organizations will be able to develop high-quality data journalism programs. To develop local data journalism, media organizations need to allocate sufficient resources and infrastructure to support data-driven projects. This includes funding to acquire the necessary tools and software, as well as hiring skilled data journalists to strengthen existing editorial teams. By investing in the right resources, local media organizations can facilitate the production of high-quality data-driven stories.

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- **Training and capacity building:** A critical aspect of cultivating local data journalism is equipping journalists with the skills and knowledge needed to analyze, visualize and communicate complex data. Media organizations ought to provide specialized training courses and seminars that concentrate on methods for data analysis, data visualization, and data-driven storytelling. Other significant roles that educational institutions can play include the development of data journalism curricula and the provision of courses that address the needs of aspiring local data journalists.
- **Access to local data:** The effectiveness of local data journalism depends critically on the accessibility, accuracy, and comprehensiveness of local data. Governments and public bodies ought to give top priority to the local release of accessible datasets that give journalists access to crucial data for their reporting. The usability of local data sources can also be greatly enhanced by the adoption of standardized formats for data publication.
- **Cooperation and networking:** Collaboration and networking between media outlets, academic institutions, governing bodies, and other stakeholders can considerably speed up the development of local data journalism. Sharing resources, knowledge, and tools can assist in overcoming the difficulties brought on by a lack of resources and experience. The collaboration of these parties can enable the growth of local data journalism.
- **Ethical and legal frameworks:** Last but not least, ensuring the ethical and responsible use of data in journalism is crucial to establishing credibility and confidence with local audiences. The management of sensitive information, privacy protection, and treatment of any legal difficulties should be handled by media organizations according to established policies and procedures. Data journalists can also benefit from guidance from legal professionals and data protection authorities as they navigate the complicated web of privacy rules and regulations. Legal counsel can offer direction on adhering to relevant data protection regulations, preventing libel, and managing potential legal issues connected to data-driven reporting. Local data journalists can uphold the highest standards of journalism while minimizing the risks connected with data-driven reporting by observing ethical and regulatory frameworks.

In conclusion, a multifaceted strategy that combines resource investment, training, access to local data, collaboration, and adherence to ethical and legal standards is necessary to establish local data journalism. Stakeholders may encourage the growth of local data journalism by taking these actions, which will ultimately provide communities with more thorough, accurate, and pertinent news coverage.

FUTURE RESEARCH DIRECTIONS

There are a number of directions for future research that can help to progress this subject as local data journalism continues to develop and change the media landscape. Specifically:

- **Impact and Effectiveness of Local Data Journalism:** Future studies may examine the influence and value of local data journalism from a variety of angles. This includes researching how local audiences respond to and engage with data-driven stories as well as looking into how local data journalism affects public opinion, policy development, and community empowerment. These studies may employ mixed-method techniques that combine quantitative study of internet

analytics, polls, and qualitative interviews with news consumers, journalists, and community stakeholders (Napoli, 2011).

- **Ethics and Privacy in Local Data Journalism:** There is a need for study that examines ethical issues and privacy concerns given the growing usage of private and sensitive data in local data journalism (Vanacker, 2021). This direction may cover the impact on people and communities as well as how journalists handle moral dilemmas when gathering, analyzing, and publishing local data. Future research might look at ethical frameworks, industry norms, and the best methods for local data journalism, addressing concerns with openness, consent, anonymization, and data governance.
- **Collaboration and Networked Approaches:** An intriguing study topic is examining the collaborative aspects of local data journalism. In order to produce and distribute data-driven stories, this requires examining the dynamics of partnerships between journalists, technologists, community organizations, and individuals. Research can examine the advantages, difficulties, and results of cooperative endeavors as well as the function of technological networks and platforms in promoting cooperation and knowledge exchange among regional data journalism groups (Borges-Rey, 2016).
- **Newsroom Practices and Organizational Factors:** It can also be argued that it is essential to look at organizational variables and newsroom practices that affect the application of local data journalism. With an emphasis on local media, research might examine elements including newsroom culture, resource allocation, leadership, and the incorporation of data journalism inside conventional newsroom structures. Understanding these dynamics will help you better understand the potential and problems that news organizations will encounter as they implement and support local data journalism practices.
- **Technological Innovation and Tools:** The landscape of data journalism is still being shaped by the quick development of technology (Bradshaw, (2017). Future studies may examine cutting-edge techniques and technologies like machine learning, automated data analysis, and interactive data visualization platforms that enable local data journalism. Examining these tools' usability, efficacy, and impact in local newsrooms might reveal how they might improve audience engagement and data-driven storytelling.
- **Diversity and Inclusivity in Local Data Journalism:** The representation and inclusion of many voices and viewpoints in local data journalism can be explored through research (Zamith, 2019). This entails studying the difficulties faced by journalists in gaining access to and analyzing data pertaining to underrepresented communities and researching methods to guarantee inclusivity in the data journalism process. Studies might look into methods for dealing with biases in data collection and analysis, as well as how local data journalism can promote social justice and challenge local power structures.

CONCLUSION

The use of local data journalism has the power to fundamentally alter how local news is reported and accessed. Local journalists can find vital insights, spot trends, and shed light on significant issues that have an impact on their communities by utilizing the power of data analysis, visualization, and narrative. This article has examined the many facets and difficulties of local data journalism. The discussion has

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highlighted the fundamental role of training and possession of abilities in order to gather, evaluate, and present data in a way that appeals to the regional audiences. For the purpose of producing accurate and useful reporting, it is essential to be able to traverse and analyze complicated datasets.

The profession of local data journalism heavily incorporates ethical considerations. Journalists must strike a balance between the right of the public to know and each person's right to privacy, especially when dealing with sensitive or individually identifiable material. To uphold the public's trust and guarantee the welfare of the communities they serve, organizations must follow ethical standards, respect informed consent, and use appropriate data processing procedures. For local data journalism initiatives to be successful, collaboration and collaborations are essential. Journalists can improve the caliber and veracity of their data-driven stories by collaborating closely with specialists from a variety of professions, such as data scientists, researchers, and attorneys. In order to promote openness and inclusivity, collaboration also includes interacting with the community as a whole, getting feedback, and correcting issues.

While local data journalism has advanced significantly, there are still some untapped potentials. Future studies should examine how local data journalism affects community participation, openness, and accountability. A better informed and participative society can result from an understanding of how data-driven reporting affects public awareness and decision-making processes. Additionally, current technology developments present chances for local data journalism innovation. Investigating new platforms, techniques, and technology can improve local journalists' usefulness, accessibility, and capacity for visual storytelling. To ensure the long-term viability and financial stability of local data journalism initiatives, it is also essential to look into sustainable business models.

By offering data-driven insights and compelling storytelling, local data journalism has the ability to completely transform local news reporting. Local journalists may play a crucial role in developing informed communities, keeping local authorities accountable, and tackling urgent issues that touch people's lives by embracing the power of data and working with stakeholders. Local data journalism can flourish, empowering journalists and helping local communities for years to come with sustained study, education, and innovation.

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KEY TERMS AND DEFINITIONS

Data Journalism Tools: They are applications, programming languages, and other technologies that support various stages of a data journalism project (data collection, cleaning, analysis, visualization, and storytelling). Typical examples are spreadsheet applications, data visualization online services, and programming languages (Python, R).

Data Literacy: It refers to effective data comprehension, analysis, and interpretation. For journalists working with data, data literacy skills are considered to be crucial because they allow them to analyze information critically, pose pertinent questions, and effectively convey data-driven insights to their audience.

Data Visualization: The graphical representation of data to facilitate understanding and communication. It involves transforming raw data into visual elements like charts, graphs, maps, and infographics to present patterns, relationships, and trends effectively.

Data-Driven Reporting: The practice of using data analysis, visualization, and interpretation techniques to inform and enhance news reporting. It involves collecting, analyzing, and presenting data to uncover stories, trends, and insights.

Local Data: Information specific to a particular geographic area or community, such as government statistics, public records, surveys, or datasets related to local issues, demographics, and events.

Open Data: Publicly accessible data that is freely available for use, reuse, and redistribution. Open data initiatives aim to promote transparency, accountability, and innovation by making government and other relevant datasets accessible to the public.