

24

Presentation date: April, 2024
Date of acceptance: October, 2024
Publication date: November, 2024

THE ROLE

OF DATA JOURNALISM IN THE FORMATION OF PUBLIC OPINION IN
THE CONTEXT OF THE INFORMATION SOCIETY

EL PAPEL DEL PERIODISMO DE DATOS EN LA FORMACIÓN DE LA OPINIÓN PÚBLICA EN EL CONTEXTO DE LA SOCIEDAD DE LA INFORMACIÓN

Vafa Isgandarova Zahid
E-mail: vafa1.aslan@gmail.com
ORCID: <https://orcid.org/0000-0002-4167-7531>
¹ Baku State University (BSU). Azerbaijan.

Suggested citation (APA, seventh ed.)

Isgandarova, V. (2024). The role of data journalism in the formation of public opinion in the context of the information society. *Universidad y Sociedad*, 16(6), 238-249.

ABSTRACT

Data journalism represents an innovative approach that integrates big data analytics, data visualization, and information technologies to comprehend and articulate the dynamics of the information society. By meticulously analyzing digital datasets, data journalism effectively presents complex events clearly and understandably. This approach enhances the understanding of the information society by transforming data into compelling narratives, making complex issues accessible to a broader audience, and enabling more informed access to information. Furthermore, data journalism not only delivers information to its target audiences but also fosters social participation through interactive and engaging experiences. This leads to increased transparency in democratic processes, empowering citizens to make informed decisions. The purpose of this study is to explore the critical role of data journalism, which has emerged alongside new communication technologies, in shaping public opinion through interviews with journalists in the field and to assess its impact on social participation.

Keywords: Data Journalism, Public Opinion, Information Society, New Communication Technologies.

RESUMEN

El periodismo de datos representa un enfoque innovador que integra análisis de big data, visualización de datos y tecnologías de la información para comprender y articular la dinámica de la sociedad de la información. Al analizar meticulosamente los conjuntos de datos digitales, el periodismo de datos presenta de manera eficaz eventos complejos de una manera clara y comprensible. Este enfoque mejora la comprensión de la sociedad de la información al transformar los datos en narrativas convincentes, haciendo que los problemas complejos sean accesibles a una audiencia más amplia y permitiendo un acceso más informado a la información. Además, el periodismo de datos no solo ofrece información a sus audiencias objetivo, sino que también fomenta la participación social a través de experiencias interactivas y atractivas. Esto conduce a una mayor transparencia en los procesos democráticos, empoderando a los ciudadanos para tomar decisiones informadas. El propósito de este estudio es explorar el papel crítico del periodismo de datos, que ha surgido junto con las nuevas tecnologías de la comunicación, en la formación de la opinión pública a través de entrevistas con periodistas en el campo y evaluar su impacto en la participación social.

Palabras clave: Periodismo de datos, Opinión pública, Sociedad de la información, Nuevas tecnologías de la comunicación.

INTRODUCTION

The development of new communication technologies has been an important factor that triggers and directs social changes. These technological advances have led to revolutionary transformations in the field of communication, fundamentally changing the way individuals, societies, and cultures interact with each other. Namely, first of all, the Internet has caused radical changes in access to information. The Internet has liberated information from limited geographical regions and made it accessible worldwide. This situation has allowed individuals to have a broader perspective on different cultures, world events, and scientific developments. Secondly, the rapid development of mobile communication technologies has increased the instantaneous communication possibilities for individuals. Smartphones, social media applications, and instant messaging services have allowed people to communicate instantly and continuously. Thirdly, the rise of digital media has allowed individuals to create and share their own content through social media platforms. This has challenged traditional media paradigms, allowing each individual to become a publisher and allowing various voices to be heard. However, social media have also played an important role in creating collective consciousness and coordinating social movements.

New communication technologies, especially with the digitalization process, have profoundly affected journalism and radically changed traditional practices and content in this field. The shift from traditional media outlets to digital platforms has brought about a number of important changes from news production to consumption. In this context, speed, diversity, and interactivity have become the defining characteristics of today's journalism. With digitalization, new types of journalism have also begun to emerge. One of them is data journalism. Data journalism, which goes beyond the traditional concept of journalism,

aims to analyze large data sets, understand information in depth, and communicate it to society more effectively. Data journalism guides people to make informed decisions and encourages the public to act more consciously. In addition, this type of journalism contributes to ensuring more effective government and corporate accountability in line with the demands of society, with an emphasis on the principles of open data and transparency.

Considering the above, the goal of this research is to investigate the essential role of data journalism, which has developed alongside advances in communication technologies, in influencing public opinion. The study aims to assess how data journalism affects social participation by providing citizens with interactive and engaging information experiences that promote transparency in democratic processes and facilitate informed decision-making.

MATERIALS AND METHODS

A literature review was used as a research method to analyze the main theories and approaches related to the topic, identifying knowledge gaps and current trends in the field. In addition, in order to determine the role of data journalism in public opinion personal interviews with journalists working in this field were conducted. The research was conducted using a qualitative methodology, and interviews with professionals working in the field of data journalism constituted the main data collection method of the study. Within the scope of the study, online interviews were conducted with seven journalists who were reached via mobile communication tools and who specialized in the field of data journalism (Table 1). The participants were randomly selected from among professionals who work in various media organizations and take an active role in data journalism projects. In the selection of participants, attention was paid to diversity in gender, age, and experience.

Table 1. Information of data journalists interviewed.

Person Interviewed	Media Organization Worked for	Working Position	Work Internship	Online Interview Date
Taleh Shahsuvarli	AzNews.az (Internet news portal)	Editor-in-Chief	8 Years	October 11th, 2023
Elgun Mensimov	Report Information Agency	Editor	4 Years	October 15th, 2023
Bahrüz Guliyev	"S S" NEWSPAPER	Editor-in-Chief	7 Years	January 9th, 2024
Gular Ahmadova	Report Information Agency	Reporter	3 Years	January 9th, 2024

Rufik Ismayilov	Medianews.az (Internet news portal) and Baku TV	Editor-in-Chief and Presenter	21 Years	January 9th, 2024
Agil Elesger	"New Age" Media Group	General Manager	20 Years	January 10th, 2024
Alemde Nesib	APA Information Agency	Reporter	4 Years	January 10th, 2024

Source: own elaboration.

Interviews were conducted between October 11th, 2023, and January 10th, 2024. The interviewees included two Editors-in-Chief, one Editor-in-Chief/Presenter, two Reporters, and one General Manager. These interviews reflect the diversity in the field of data journalism and various industry experiences while comprehensively revealing the views and experiences of professionals in this field. The length of employment of the interviewees ranged from 3 to 21 years, representing a wide range of experience in the industry. This diversity provides valuable information in terms of understanding the applications of data journalism at different levels and the challenges, achievements, and developments faced by professionals in this field.

The data collection process was carried out using seven open-ended questions focusing on the effects of data journalism. These questions covered the effects of data journalism on news consumption habits, social consciousness, reliability, visualization and interactivity, media literacy, accountability of government institutions, and democratic governance. Interviews were conducted via online platforms and lasted approximately 45-60 minutes each. The interviews were recorded with the participants' approval and then transcribed. The transcribed interview texts were examined primarily in terms of important themes and categories. In this process, common and different views on the role of data journalism in public opinion formation were determined.

RESULTS AND DISCUSSION

Information society and new communication technologies

The term "information society", which has been used frequently since the second half of the 20th century, especially after the stages of industrial society in the USA, Japan, and Western European countries, refers to a new model of society that has emerged in parallel with the development of information technology. In this new model, traditional heavy industry is being replaced by a structure in which information technology is more prominent (Bell, 1973; Masuda, 1981; Toffler, 1970). The information society is characterized as a period in which learning at the organizational and social levels is perceived as a basic way of life in the modern world. Thus, at the organizational

level, the concept of the information society includes the understanding that companies and organizations consider information as a strategic asset to obtain, maintain, and develop a competitive advantage. At the social level, the information society aims to increase the general well-being of society in an environment where access to information is open to a wide range of people (Unal, 2009, p. 125). By shaking traditional hierarchical structures, the information society paves the way for the formation of a more participatory, liberal, and information-based social order. Increasing communication between people strengthens global connections and facilitates cross-border interaction. For this reason, the information society is seen by many experts and thinkers as a symbol of an important transformation in the future of humanity.

Knowledge is the most fundamental and critical resource of this new society. According to Daniel Bell's information society analysis, knowledge has primary importance, and knowledge or information stands out as the transformative element of this society model. Bell emphasizes that information has become a strategic resource beyond just being a resource. According to him, it is one of the factors that fundamentally transforms industrial society by bringing together elements such as information, energy, resources, and technology. In the post-industrial society, dominating information means having economic power, which transcends traditional production and industry models and turns into an element that directs and shapes economic processes. According to Bell, during this period, having not only material resources but also information is one of the important factors determining the economic success of a society (Bell, 1980, p. 531).

The information society is mainly based on the continuous production and increase of information, and its characteristics of being portable, divisible, and shareable within communication networks (Unal, 2009, pp. 137-139). The continuous production and increase of information brings the information society to a dynamic and constantly changing structure. Unlike traditional production factors, information is no longer a limited resource and is constantly enriched with the production of new information. This encourages innovation within the information society, ensures continuous learning, and supports social development. The ability to be portable in communication

networks also ensures that information can be shared and accessed quickly. Advances in digitalization and communication technologies make it possible to establish connections across long distances by accelerating the flow of information. This creates a global information ecosystem and provides easy access to information, sharing, and cooperation opportunities. Finally, the divisible and shareable nature of information facilitates information sharing and increases social interaction. Thus, information sharing and cooperation between individuals and institutions in the information society are becoming more effective. This creates opportunities to share information with a wider audience and develop collective intelligence.

The information society differs significantly from the industrial society. This society, which is shaped by information and technology-based production processes rather than traditional production models, emphasizes information sharing, communication, and learning. The information society has a flexible, participatory, and innovative structure, which indicates its ability to adapt faster to the constantly changing technological environment. In this context, the information society is a concept that includes not only the possibility of access to all kinds of information but also the ability to make sense of this information, interpret it, and make it a part of everyday life (Selvi, 2012, p. 195). Individuals' skills in accessing and using information play a critical role in the development of the information society. The information society is also an ever-changing structure that is constantly evolving with technological developments. As individuals' access to information increases, the information society becomes even more complex, and this process leads to significant changes in social, economic, and cultural spheres.

The information society is an era in which communication technologies are rapidly evolving. This technological transformation increases access to information for individuals, organizations, and society, facilitates information sharing, and allows connections to be established worldwide through global communication networks. New communication technologies accelerate the exchange of information by pushing traditional boundaries and increasing understanding among different cultures. As Breistrose points out, old technologies usually allow the minority to communicate primarily, while new technologies allow the majority to access information of their choice (Breistrose, 1985, p. 78). Indeed, old technologies are generally considered to be manufacturer-centered. In this model, communication is managed from a certain center outward, messages are created within a specific structure, and transmitted collectively.

However, new communication technologies adopt a structure that is user-centered and focuses on individual preferences. Multiple access based on information in computer memory gives individuals the freedom to access the information they want at their preferred times. In this context, Rogers highlights three basic characteristics of new communication technologies. First, he emphasizes the importance of human memory participation in the communication process within the scope of mutual interaction. This changes the understanding of one-way communication in traditional printed publications and electronic mass media and points to a participatory interaction model. Second, the concept of demassification refers to the ability of each individual within a large user group to exchange private messages with others. This symbolizes a shift in control of communication systems from the message-generating entity to the communication tool consumer. Demassification enables individuals to access content that suits their preferences and interests, which provides more personalized communication experiences. Finally, Rogers states that new communication technologies have the ability to send or receive messages at appropriate times for individuals through asynchronous capabilities. This feature provides flexibility by eliminating the need for communication to take place simultaneously. Individuals can communicate at their own pace and at appropriate times, which allows communication to become more free and personal (Geray, 1994, p. 7).

However, these developments that come with new communication technologies do not mean they are completely different from traditional means of communication. New technologies share similarities with traditional media, such as telephone communication and written letters. This hybrid structure combines both traditional and innovative forms of communication to create a versatile communication environment.

The emergence of new communication technologies has also led the leading thinkers of the era to evaluate their impact on individuals and society. These evaluations are generally shaped around two main axes: technological determinism and critical approaches to technology. The technological determinist approach argues that technology is a fundamental force that shapes society and individuals. This approach suggests that technological developments inevitably trigger and determine social changes. The rise of new communication technologies, according to this approach, fundamentally changes society, leading to new dynamics and relationships. For example, according to Harold Innis, communication tools not only enable the transfer of information but also create certain social impacts due to their features. He argues that the

long-distance portability of written media (for example, portable paper and books) played a critical role in the formation of civilizations that gained power and influence worldwide. According to him, this enables the expansion of knowledge and culture and the establishment of interaction between different societies (Erdogan & Korkmaz, 2002, pp. 166–167). According to McLuhan, communication technologies reduce the world in terms of time and space and bring people closer to each other. With the term “global village,” he means that technological communication brings together people, events, and cultures across borders, making the world like a village. McLuhan attributes this situation to the liberating and equalizing qualities of technologies (Alankush, 2005, pp. 35–36).

On the other hand, critical approaches to technology emphasize that technology is shaped by social and political contexts and that this process is influenced by various interest groups. Critical thinkers point out that the use of technology tends to reproduce power relations and draw attention to how technology can deepen social inequalities. For example, David Lyon argues that new communication technologies have a significant impact on the ability to control and manage societies. According to him, surveillance that takes place in many areas of individuals' lives has become more widespread and effective through the use of digitalization and communication technologies compared to traditional surveillance methods. These technologies have the capacity to collect and analyze many types of data, such as individuals' online behavior, communication habits, and shopping preferences. According to Lyon, this creates an opportunity for governments, companies, and other institutions to gain access to large amounts of information and effectively establish control over individuals (Lyon, 2006, p. 11). Furthermore, developments in new communication technologies are having an impact that deepens inequalities around the world. Gaps in access to information and communication tools between societies show a clear polarization between the communication wealth of the information-rich and the communication poverty of the information-poor. Developed countries, in particular, are in a leading position in global technology production and drive a large part of technological developments worldwide. This situation causes technological advantages to be concentrated in certain regions only, leaving societies outside these regions behind (Chakir, 2013, p. 119).

As a result, it is possible to say that the rise of new communication technologies is one of the main factors that strengthens and accelerates the development of the information society. As a matter of fact, these technological tools feed the elements that make up the information

society by facilitating access to information. However, this mutual relationship also brings with it new problems such as information security, privacy concerns, information pollution, and the digital divide. Therefore, understanding and managing this mutual relationship is of critical importance for societies to create a sustainable information and communication environment.

The concept of public opinion

The concept of public opinion emerges with different definitions when considered from the perspectives of various disciplines. These definitions are usually divided into two main categories in terms of political science and other social sciences (Ornek, 1998, p. 17). From the perspective of political science, public opinion expresses the norms that determine the behavior of the state's legislative, executive, and judicial organs or are determined by opinion leaders. This definition emphasizes that public opinion plays an effective role in policy processes and state functioning. From the perspective of other social sciences, the definition of public opinion has a broader scope. According to this definition, public opinion emerges as a product of social interactions and involves individuals' interaction with general social dynamics.

James and Baldwin define public opinion not as the simple aggregation of individual opinions but, in a deeper sense, as the product of interactions taking shape within a larger collective mind. In other words, according to them, public thoughts are not merely a collection of individual thoughts but rather a common result of mutual communication and interaction. According to Cooley, public opinion is a phenomenon formed through the interaction and communication of groups of people who collectively decide what the problem is, ask why the problem concerns the public, and explore solutions (Price & Roberts, 1989, pp. 782–783). These perspectives allow us to understand public opinion in a broader context by emphasizing that it is not an isolated individual entity but rather a product of social interactions and communication.

In the historical process, the concept of public opinion has gained an important social dimension in political discussions and decision-making processes since Ancient Greek times, although not in its modern sense. In ancient Greece, the Agora functioned as a kind of social gathering and shopping center. These places became centers not only for trade but also for political conversations, philosophical discussions, and public gatherings where people exchanged ideas on various issues. Political decisions were generally made collectively, and the public had great influence in making these decisions. People

expressed their opinions and interacted with politicians in these public gathering places.

In the Roman Empire, public opinion was generally based on the views of the aristocratic class and administrators. Public participation and freedom of expression often took place in public spaces such as the Forum. In the Middle Ages, the phenomenon of public opinion was more limited compared to previous periods and was primarily shaped among the aristocratic classes of feudal society. Although there were environments in cities where thoughts and views were shared in limited communities such as guilds and craftsmen groups, these groups generally included a limited number of people and were far from representing the broader population.

In the Modern Age, especially after the Renaissance and Reformation, the phenomenon of public opinion began to emerge more clearly. Public opinion grew stronger under the influence of the Enlightenment movement. Enlightenment thinkers advanced demands for social change by defending concepts such as individual rights, freedom, and equality, which accelerated the formation of public opinion. The political, economic, and social changes that occurred in Western Europe in the 18th century and afterward led to the emergence of public opinion as we know it today. Democratic developments, especially from the middle of the 19th century onward, played a major role in increasing the effectiveness of public opinion (Atabek, 2002, p. 235).

The concept of public opinion comprises two main elements: scope and process. The scope elements include the basic components that make up the concept of public opinion, typically referred to as the public and opinion (Temizel, 2008, pp. 131–132). The public refers to a community that represents a broad segment of society and has a heterogeneous structure. In this context, public opinion generally encompasses common thoughts about a subject, event, or policy. Opinions express the reactions, preferences, and views of individuals regarding specific issues or events.

The process element represents the second basic component. Public opinion formation occurs over time, typically during periods when an issue or event is on the agenda. During this process, the public determines its stance on a particular issue. The formation of public opinion is considered a superstructure built upon the interaction of elements such as the political system, political environment, and social structure. The diversity of political systems leads to differences in the degree and sphere of influence of public opinion. For example, in democratic systems, the emphasis on individual freedom of expression and

participatory processes enhances public opinion's power to influence. In contrast, totalitarian systems typically attempt to control and shape public opinion through propaganda and repression, limiting individuals' ability to express their thoughts freely (Sezer, 1972, p. 50).

Psychological factors, individual environments, and the institutions that comprise these environments play crucial roles in the formation of public opinion. The primary psychological factors are attitudes and beliefs. Attitudes are individuals' emotional and cognitive reactions to specific issues, events, or people, leading them to develop positive or negative stances on topics. In the formation of public opinion, individuals' general attitudes determine their emotional and cognitive approaches to an issue. Opinions represent individuals' thoughts about specific topics or events and, unlike attitudes, primarily reflect intellectual evaluations. Public opinion forms when individual opinions converge to create a general consensus. The general opinions of society emerge from the combination of individuals' intellectual approaches. Beyond personal factors, an individual's environment and its constituent institutions play vital roles in shaping public opinion. These factors fall into five categories: groups and pressure groups, opinion leaders, cultural structure, legal and political environment, and media (Temizel, 2008, pp. 136–142).

The role of the media in the process of influencing public opinion is shaped by the combination of various elements. The media reveals the reactions and expectations of the public by determining the agenda of society through the news. The media not only provides news but also strengthens the opinions, feelings, and orientations associated with this news by organizing it (Vural, 1999, pp. 120–121). However, the media alone is not considered a sufficient or effective tool in the formation of public opinion, because public opinion is a phenomenon that arises as a result of the interaction of numerous complex factors, and the influence of the media is only a part of it.

Data journalism

Data journalism refers to a new concept that expands the opportunities offered by traditional journalism and delivers stories created with digital information to large-scale audiences (Bounegru & Gray, 2021, p. 11). Experts define data journalism in various dimensions. For example, Philip Meyer describes it as a new form of sensitive journalism directed by professionals who can work effectively with data. Ralf Spiller and Stefan Weinacht consider data journalism as a process of collecting, analyzing, and preparing digitized information. According to Broussard, data journalism characterizes an approach based on factual

foundations that avoid misleading information. Generally, all these definitions view data journalism as a journalistic practice that includes not only information collection but also the processes of effective analysis, interpretation, and storytelling (Howard, 2014).

From a historical perspective, data journalism has existed in various forms for many years. As Rogers notes, a data table found in an 1821 issue of *The Guardian* demonstrates the genre's historical roots. This table included information about Manchester schools, including student numbers, costs per student, and comparative data from 60 years prior. This example illustrates the historical use of data in journalism and shows how journalists have long processed data-based information (Rogers et al., 2013).

Data journalism involves the ability to analyze and interpret complex data sets. Through this approach, journalists can reveal previously inaccessible or difficult-to-understand information and offer viewers deeper insights. Visualization represents a crucial aspect of data journalism. The transformation of data into meaningful stories through graphics, infographics, and interactive visuals helps viewers comprehend complex issues more easily. As Bradshaw states, data journalism aims not only to present information but also to transform it into stories and convey these stories to large audiences in the digital environment. In this context, data journalism adopts an approach that utilizes data science and follows different steps from traditional methods in journalistic processes. These steps include data collection, data cleaning, contextualization, merging, communication, visualization, digital transfer, and socialization, implemented in a sequential manner (Dagh, 2014).

Data journalism can also be considered a transformed version of investigative journalism, as both types involve in-depth examination processes to better understand events and inform the public. However, data journalism, which has emerged with developments in communication technologies, uses digital tools to perform these processes more effectively and efficiently. While investigative journalism typically examines numerous physical documents and sources, data journalism focuses on collecting and analyzing documents in digital media. Information technologies and large data sets accessible via the Internet enable journalists to understand events more deeply and visualize data effectively.

Data journalism adopts a different perspective from traditional journalism and emphasizes the journalist's role in utilizing data for public interest. It questions the nature and purpose of news while differing from traditional journalism in its proposed methods. By using information technology

opportunities, data journalism makes news production more analytical, visual, and interactive. This approach enables a deeper understanding of news, more effective audience information, and more conscious formation of public opinion (Karagoz, 2016, p. 136).

Data journalism makes journalistic practice more transparent, understandable, and open to discussion. It allows viewers to become contributors to information production and dissemination rather than mere consumers. Instead of passively consuming traditional media content, audiences become active participants through data journalism. This participation helps society develop a more critical perspective on information and derive deeper meaning from events. Furthermore, data journalism challenges government accountability. Transparent and verifiable data sets create a more rigorous control mechanism over governmental and other power centers' activities. The potential of leaked data, particularly through the disclosure of confidential information, provides a more effective democratic control mechanism by informing the public about state and institutional actions.

The 2010 WikiLeaks incident exemplifies this impact. The leak involved 92,000 secret documents from the Iraq and Afghanistan war diaries. Through this massive data leak, WikiLeaks disclosed numerous shocking documents to the public, creating a significant global impact. Data journalists conducted the analysis of the leaked data and its worldwide dissemination. They studied this extensive data set in detail, extracting and visualizing the information contained in the documents, and sharing it meaningfully with the public.

Assange's transparent sharing of these leaks aimed to provide comprehensive information about governmental and power centers' activities. He believed that transparent data set sharing enables media to fulfill its traditional role more effectively. According to Assange, transparency enhances participation in democratic processes by enabling supervision, questioning, and criticism of governmental and institutional actions. This transformation allows media to become not just an information transmission vehicle but also a control mechanism monitoring social power balance (Lynch, 2012, p. 41). As Assange emphasized, data journalism has the potential to inform society and hold governments accountable through a transparency-based information-sharing model. This approach enables media to play a more effective role in democratic processes while helping society act more consciously.

Studies on data journalism's contribution to democracy generally identify three fundamental ways this contribution occurs. First, data journalism strengthens journalistic

objectivity. Data enables unbiased news analysis, helping journalists present more objective viewpoints. Second, data journalism facilitates public institution accountability. Data analysis tools and open data platforms enable media organizations to conduct in-depth research more effectively and economically, resulting in more comprehensive and informative news coverage. Third, data journalism enables citizens to create and analyze their own data, increasing their political participation. Citizens create data on issues crucial for healthy democratic processes and contribute to public discussions by sharing their findings (Parasie & Dagiral, 2013, p. 2). Given that public opinion requires a democratic environment to form freely, data journalism's role becomes particularly significant. Free public opinion allows for the expression of diverse viewpoints and various perspectives, constituting the will of the nation—a fundamental element of democracy.

Data journalism enables more comprehensive and detailed news coverage. This enhanced coverage ensures better public awareness and helps citizens evaluate various perspectives when forming their opinions. Additionally, data journalism transforms journalism into a more participatory and multilayered experience. Consequently, it creates conditions for the development of more transparent, fair, and democratic governance in society while playing an effective, albeit indirect, role in public opinion formation. That way, data journalism represents a new concept that expands traditional journalism's possibilities, delivering digitally created stories to broad audiences (Bounegru & Gray, 2021, p. 11).

Examining the role of data journalism in forming public opinion

- Findings on how data journalism affects news consumption habits

The interviewees were first asked, "How do you think data journalism affects news consumption habits in the information society?" Their responses considered various perspectives on data journalism's impact on news consumption habits in the information society.

Elgun Mensimov, one of the interviewees, stated that data journalism can make news more attractive through its presentation forms but noted that current media practices are mostly event-oriented with limited data usage. Behruz Guliyev, however, emphasized that data journalism has a deep-rooted history and has now become an established practice. Interviewees Gular Ahmadova and Rufik Ismayilov highlighted that data journalism brings a new perspective to journalism and makes news easier to understand.

According to Agil Elesger, data journalism has brought specificity to media and facilitated news consumption through the processing of statistical data and its effective presentation to audiences. Alemde Nesib noted that data journalism has contributed to easier news comprehension and has facilitated journalists' work in research and interviews.

These responses revealed that while data journalism has the potential to influence news consumption habits, opinions differ regarding whether this potential is fully realized in media practice. The interviews indicated that data journalism can serve as an important tool for information-based, in-depth, and effective news presentation, but it requires greater adoption and understanding by media organizations and journalists.

- Findings on the impact of data journalism on social awareness

Secondly, the question "How do you think data journalism affects social awareness and how does this effect differ from traditional journalism methods?" was asked of the interviewees. The answers provided revealed various aspects of the impact of data journalism on social awareness and the differences in this impact from traditional journalism methods. As a matter of fact, Taleh Shahsuvarli, one of the interviewees, emphasized that this effect may be indirect. Elgun Mansimov, on the other hand, stated that society is closed in terms of information and education and usually shows interest in entertainment-oriented information related to daily events. According to him, this makes it difficult to understand the impact of data journalism on social awareness. Bahruz Guliyev and Gular Ahmadova, two of the interviewees, emphasized that data journalism is more accurate and descriptive than traditional journalism and noted that it makes information easier to understand. Rufik Ismayilov stated that processes such as research, questioning, and verification exist in both traditional and data journalism, but visuality and presentation diversity are more effective in data journalism. In this context, during the interview, Agil Elesger stated that data journalism and its audience are different and more unique than traditional media, so it may be difficult to directly compare their effects.

Alemde Nesib stated that people today prefer short and understandable content; long articles and stories do not attract attention, but content enriched with visual elements and infographics garner more interest. Thus, she emphasized that the advantages offered by data journalism in terms of visuality and accessibility are more prominent in influencing social consciousness. These answers have shown that, in general, data journalism has the potential

to influence social consciousness with its more accurate, descriptive, and visually rich content. Unlike traditional journalism methods, data journalism increases society's capacity to obtain information and understand events by understandably presenting complex data and statistics. This situation contributes to the development of a knowledge-based social consciousness and allows individuals to make more informed decisions.

- Findings regarding data journalism being found more trustworthy by the target audience

Another question asked during the interviews with the participants was, "Does the target audience find data journalism products more reliable than traditional journalism products? If so, how is this concept of trust formed?" Participants such as Taleh Shahsuvarli, Elgun Mansimov, and Alemde Nesib stated that target audiences in general do not have sufficient knowledge about data journalism and therefore do not make a significant choice regarding reliability. Özellikle Elgun Mansimov, hedef kitlenin neyin güvenilir olduğunu ayırt etmekte zorlandığını belirtti. On the other hand, Bahruz Guliyev and Gular Ahmadova emphasized that data journalism is more reliable than traditional journalism, and the reason for this is the accuracy and analytical approaches in data journalism. Rufik Ismayilov stated that reliability depends on the past activities of the media institution and the media member and that an institution that has produced reliable news in the past can also be reliable in the field of data journalism.

Agil Elesger stated that data journalism has a specific audience and that these audiences prefer field-specific information, trusting its accuracy. According to Alemde Nesib, the target audience generally does not question the accuracy and source of the information and accepts the information presented as it is due to low media literacy. According to her, only people who work in the media field or are close to it tend to investigate the source of information. These answers showed that, in general, the reliability of data journalism is perceived differently by the target audience depending on the accuracy of the information presented, the way it is analyzed, and the openness of the sources. Although data journalism offers a more careful and in-depth approach compared to traditional journalism, the recognition and evaluation of this effect largely depend on the level of media literacy of the target audience and their attitudes toward accessing information.

- Findings related to the effects of visualization and interactive elements used in data journalism on understanding and remembering content

One of the questions asked in the interviews with the participants was, "How do visualization and interactive

elements used in news stories in data journalism help audiences understand and remember news content?" The opinions of the participants were largely positive about how these elements assist viewers in better understanding and remembering news content. Participants such as Taleh Shahsuvarli and Elgun Mansimov stated that visualization and interactive elements have theoretically positive effects. Bahruz Guliyev and Gular Ahmadova mentioned that such elements contribute to a more accurate understanding and retention of the content. In particular, Gular Ahmadova emphasized that data journalism can simplify complex information, making it more understandable and concise, and noted that visualization and interactive elements play a key role in this process. Rufik Ismayilov also highlighted that visualization and interactive elements make news and research more engaging, memorable, and effective, stating that visual elements create a stronger impact than text-based explanations.

Agil Elesger noted that the positive effects of visualization and interactive elements are generally acknowledged, and such content is well-received by viewers. Alemde Nesib, on the other hand, stressed that these elements aid in faster comprehension and information transfer. These responses revealed that, in general, the use of visualization and interactive elements in data journalism enhances the comprehensibility and memorability of news stories, enabling viewers to engage with the content more effectively. Visual elements present complex data and information in a clearer and more impactful way, while interactive elements allow viewers to interact directly with the content and explore it in greater depth. This approach is one of the key reasons why data journalism offers a higher level of engagement and understanding compared to traditional journalism methods.

- Findings on how data journalism affects the audience's media literacy and ability to critically evaluate information

Another of the questions posed to the interviewees within the scope of the research was, "How do you think data journalism affects the audience's media literacy and ability to critically evaluate information?" It is clearly understood from the participants' opinions that the effect of data journalism on the audience's media literacy and ability to critically evaluate information is positive. Specifically, Taleh Shahsuvarli and Elgun Mansimov stated that data journalism has a positive effect theoretically, especially on audiences with strong critical thinking skills. Bahruz Guliyev and Gular Ahmadova also emphasized that data journalism holds a special place in media literacy and provides viewers with the opportunity to compare information. According to Rufik Ismayilov, media contributes

to the development of society when it is handled by professionals. In this context, data journalism supports media literacy and encourages critical thinking by offering viewers verifiable and reliable information based on solid foundations.

Similarly, Agil Elesger and Alemde Nesib stated that the audience's demand for effective, accurate, and complete information has increased, and research-based data journalism prompts viewers to think and question more actively. These views show that data journalism enables viewers to develop a more informed approach to the information presented and to evaluate data from a critical perspective. In general, data journalism has a significant impact on increasing viewers' media literacy and improving their ability to critically evaluate information. By presenting complex data and statistics understandably and interactively, data journalism allows audiences to consume media content more consciously and apply their critical thinking skills.

- Findings on the effects of data journalism on the accountability of government agencies

Another question directed to the interviewees during the interview process was, "How do you think data journalism increases the accountability of government agencies, and what advantages does this process offer compared to traditional journalism methods?" According to the opinions of the participants, the impact of data journalism on increasing the accountability of government agencies varies. Some participants stated that data journalism plays an important role in this area and offers certain advantages over traditional journalism methods, while others mentioned that its effect is limited or does not make a difference. Participants such as Taleh Shahsuvarli, Elgun Mansimov, and Bahruz Guliyev emphasized that data journalism has the capacity to provide people with more detailed information, thereby fostering greater transparency in the activities of government agencies and enhancing accountability. According to them, the detailed and verifiable information provided by data journalism has the advantage of being more accurate and reliable than that offered by traditional media methods. Gular Ahmadova noted that state institutions are not yet fully transparent in terms of accountability, but data journalism simplifies the analysis process for readers by presenting information in a more accessible and understandable manner.

Rufik Ismayilov also highlighted the media's overall control function over state institutions, pointing out that the media, including data journalism, can play a critical role in increasing the transparency and accountability of these institutions. He stated that today everyone can assume a

kind of journalist role, which pressures government agencies to be more transparent and accountable. While Agil Elesger emphasized that the media generally does not significantly impact the accountability of state institutions, Alemde Nesib affirmed that data journalism has a positive effect. In line with these responses, it is generally understood that data journalism can play an important role in increasing the accountability of government agencies and offers advantages over traditional journalism methods through the detailed and verifiable information it provides. These advantages include greater transparency, detailed information presentation, and enhanced accuracy and reliability of the information presented to audiences.

- Findings on the contribution of data journalism to the formation of transparent, fair, and democratic governance in society

Within the scope of the study, the last question posed to the interviewees was, "How can you evaluate the contribution of data journalism to the establishment of transparent, fair, and democratic governance in society?" In response to this question, Taleh Shahsuvarli, Elgun Mansimov, and Bahruz Guliyev stated that data journalism, especially when it is independent and impartial, significantly contributes to reinforcing the principles of transparency, justice, and democratic governance. Gular Ahmadova and Alemde Nesib also emphasized that data journalism plays an important role in improving people's media literacy and encouraging them to question information.

Rufik Ismayilov noted that transparency, democracy, and justice are better protected in societies where the media, particularly data journalism, serve as a strong control mechanism. However, Agil Elesger emphasized that the potential impact of data journalism in this area is limited or does not contribute positively at the expected level. Based on the participants' opinions, it can be said that, in general, data journalism makes a significant contribution to consolidating transparent, fair, and democratic governance. This contribution is achieved through informing society, enhancing media literacy, and establishing an effective control and inquiry mechanism for public administration. However, for this impact to be realized, data journalism must be independent, impartial, and accessible, and both society and administrators must be open and sensitive to this information.

CONCLUSIONS

The information society is a dynamic and evolving environment heavily influenced by advancements in communication technologies. This rapid development facilitates significant changes, making societies more interconnected and information more accessible and interactive. In

this context, data journalism has emerged as a vital tool, enhancing news consumption habits and the presentation of media content.

Our research indicates that data journalism significantly improves the quality and accessibility of news, thereby playing a crucial role in informing audiences. Its impact on social consciousness is distinct from that of traditional journalism, characterized by innovative methods of presenting information, including visual elements, accessibility, and accuracy. Consequently, data journalism profoundly influences societal perceptions and processing of information, distinguishing its power to shape social consciousness from conventional methods.

The findings further illustrate that the target audience's trust in data journalism varies based on factors like access to information, media literacy, and the reliability of media institutions. These factors directly affect how audiences perceive the reliability of both data and traditional journalism. Additionally, the use of visualization and interactivity in data journalism aids audience comprehension and retention of news, enhances social awareness by simplifying complex information, and improves overall media content quality. These aspects position data journalism as an innovative and effective tool for information presentation, providing superior information transfer compared to traditional journalism.

Moreover, the results indicate that data journalism positively influences viewers' media literacy and critical evaluation skills. It plays a vital role in fostering a more informed society by offering in-depth information and enabling comparisons among various data sources. Furthermore, data journalism cultivates a more questioning and critical attitude toward media content, enhancing media literacy.

Finally, data journalism is a significant instrument for promoting accountability and transparency within government institutions. It serves as a more accurate and reliable source of information compared to traditional journalism, enabling the public to make informed assessments of government actions. This strengthens the media's role in societal oversight and encourages greater transparency and accountability among government entities. The findings also suggest that data journalism can contribute to advancing transparency, justice, and democratic governance; however, its effectiveness relies on conditions such as independence, impartiality, and widespread acceptance.

REFERENCES

Alankush, S. (2005). *New Communication Technologies and Media*. Ips Communications Foundation Publications.

- Atabek, N. (2002). Public Opinion, Media and Democracy. *Kurgu Magazine*, 19, 223–238.
- Bell, D. (1973). *The Coming of Post-Industrial Society*. Basic Books.
- Bell, D. (1980). The Social Framework of the Information Society. In M. L. Dertouzos & J. Moses (Eds.), *The Computer Age: A Twenty-Year View* (pp. 500–549). MIT Press.
- Bounegru, L., & Gray, J. (2021). *The Data Journalism Handbook*. Amsterdam University Press. <https://www.aup.nl/en/book/9789462989511/the-data-journalism-handbook>
- Breitrose, H. (1985). The New Communication Technologies and the New Distribution of Roles. In M. R. Everet (Ed.), *The Media Revolution in America and Western Europe* (pp. 68–80). Ablex Publishing Corporation.
- Chakir, M. (2013). *Media and Modernity*. Parşömen Publications.
- Dagh, P. (2014). *The Future of Journalism Data Journalism*. <https://www.academia.edu/16286677>
- Erdogan, I., & Korkmaz, A. (2002). *The Other Theory*. Erk Publications.
- Geray, H. (1994). *New Communication Technologies*. Kilichaslan Printing Industry.
- Howard, A. B. (2014). *The Art and Science of Data-Driven Journalism*. Tow Center for Digital Journalism-Columbia University.
- Karagoz, S. (2016). *The Role of Public Diplomacy and Media as a Strategic Communication Method* [Master's Thesis]. Istanbul University, Institute of Social Sciences.
- Lynch, L. (2012). "That's Not Leaking, It's Pure Editorial": Wikileaks, Scientific Journalism, and Journalistic Expertise. *Special Issue: Experts and Amateurs in Communication and Culture*, 40–68.
- Lyon, D. (2006). *A Society Under Surveillance; To Control Everyday Life* (G. Soykan, Trans.). Kalkedon Publications.
- Masuda, Y. (1981). *The Information Society as Post-Industrial Society*. Transaction Publications.
- Ornek, A. (1998). *German Image in the Turkish Press in 1990–1992 and 1996: A Comparative Content Analysis* [Master's Thesis]. Anadolu University, Institute of Social Sciences.
- Parasie, S., & Dagiral, E. (2013). Data-driven journalism and the public good: "Computer-assisted-reporters" and "programmer-journalists" in Chicago. *New Media & Society*, 15(6), 853–871. <https://doi.org/10.1177/1461444812463345>
- Price, V., & Roberts, D. F. (1989). Public Opinion Process. In R. B. Charles & H. C. Steven (Eds.), *Handbook of Communication Science* (pp. 780–785). Sage.

- Rogers, S., Gallagher, A., & theguardian.com. (2013, April 4). History of data journalism at the Guardian. *The Guardian*. <https://www.theguardian.com/news/datablog/video/2013/apr/04/history-of-data-journalism-video>
- Selvi, O. (2012). Information Society, Information Management and Public Relations. *E-GİFDER*, 3(3), 191–214.
- Sezer, D. (1972). *Public Vote and Foreign Policy*. Sevinç Printing House.
- Temizel, H. (2008). Theories of Public Opinion and Mass Media in the Formation of Public Opinion. *Journal of Social Economic Research*, 8(15), 126–146.
- Toffler, A. (1970). *Future Shock*. Bantam Books.
- Unal, Y. (2009). The History of the Information Society. *Journal of the History School*, 2009(5), 123–144.
- Vural, A. M. (1999). *Local Press and Public Opinion*. Anadolu University Press.