



The Global Diffusion of Data Journalism: A Comparative Study Between Indian and Western Newsrooms

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Abstract

This paper examines the spread of data journalism around the world, a comparative study of the Indian and Western newsrooms will be conducted based on how technology, cultural and organizational dynamics affect the process of adopting data journalism. The study will take the form of a descriptive and comparative mixed-method study that will require the combination of semi-structured interviews with journalists and editors and the content analysis of 200 data-driven stories that will be published between 2020 and 2025. Based on Diffusion of Innovations by Rogers, Gatekeeping Theory, and Media Convergence Theory, the research study exposes that western news houses like The Guardian, BBC, and The New York Times have been fully institutionalizing the concept of data journalism using the data desks, open-data access, and digital integration. By contrast, Indian media, such as The Hindu and NDTV, have an early adoption caused by a lack of data and infrastructure issues.

The results point to the fact that the spread of data journalism requires the organizational preparedness, open-data ecosystems, and digital convergence. The research suggests the formation of data teams, facilitation of the data-literacy training, reinforcement of open-data policies, and the inclusion of the data journalism education in the academic programs. Finally, data journalism represents an art cultural shift which reinvents journalism, increases transparency and accountability, and innovates in the media ecosystems of the world.

Keywords: data journalism, diffusion of innovations, gatekeeping, media convergence, Indian and Western newsrooms

1. Introduction

1.1 Background of Journalism's Digital Transformation

The 21st century has seen the digital revolution in journalism which is unexplored before. With the development of technology, including the emergence of the internet, social media networks, the analytics of big data, and mobile news apps, news production, distribution, and consumption have been changed completely (Carlson and Usher, 2021). The traditional print and broadcast newsrooms that used to be dependent on the linear news cycles are now operating in a dynamic and real-time digital ecosystem that is driven by immediacy, interactivity, and audience engagement.

The mass rollouts of the data-driven technologies and computational tools have only added more to the trend. News organizations have added digital dashboards, audience analytics, and



recommendation systems on the basis of artificial intelligence application to enhance engagement and news delivery. The shift has not only affected the newsroom activities, but it has also transformed the journalism jobs and skills. In addition to the traditional reporting abilities, journalists have become expected to know how to collect data, analyze it, and visualize and program data (Loosen et al., 2020).

Other problems that the digital age has worsened are misinformation, algorithmic bias, and the division of the audience. Consequently, media professionals and media organizations have no option except to believe in evidence-based and open practices in respect of securing credibility and trust among the population (Gray, 2021). Data journalism, in this case, is a vital innovation, which offers new possibilities to the thoroughness of the investigations, truthfulness, and social accountability.

1.2 Rise of Data Journalism Globally

The art of collecting information, processing it and presenting it in an interesting way may be defined as data journalism that is based on hard evidence and makes interesting stories. It combines the methods of investigative reporting with computational methods and visual narration (Appelgren and Nygren, 2022). This type of journalism allows journalists to identify some trends, patterns, and relationships that would not have been in the limelight with the use of the traditional means.

The emergence of data journalism in the world can be attributed to a number of significant trends. The Panama Papers, LuxLeaks, and COVID-19 dashboards are some of the landmark investigations that have shown the potential of transformational power of data-driven reporting. The Guardian, The New York Times, BBC and Reuters graphics have institutionalized data desks dedicated with multidisciplinary groups of journalists, coders and designers. These projects demonstrate the innovations in data journalism as a specialty that has transformed into the core business of most Western newsrooms (Gray and Bounegru, 2021).

Nonetheless, exporting data journalism outside the Western setting exhibits disproportional trends. Data journalism is yet to mature in the Global South especially in India. Although the data-driven reporting was pioneered by such organizations as IndiaSpend, Factly, and The Hindu Data Hub, the practice has been so far hampered by the limitation of data availability, insufficient digital infrastructure, and technical capabilities of journalists (Rao and Majumdar, 2023). Nevertheless, Indian newsrooms are starting to appreciate the importance of storytelling that is grounded on data to increase transparency, counter misinformation, and reach digital audiences.

1.3 Rationale for Studying Diffusion across Regions

The internationalization of data journalism is a good example of what is referred to as diffusion of innovation by Rogers (2003) a theory that describes how new ideas and practices diffuse among individuals, organizations, and societies. This theory is relevant to journalism because it enables us to know the motion of data journalism between early adopters (primarily Western newsrooms) and late adopters (developing nations like India). Diffusion is not a linear process, but is conditioned by several contextual factors including institutional



preparedness, technological capability, leadership facilitation, policy climate and socio-economic status (Loosen et al., 2020).

Data journalism has developed into a professional standard in Western newsrooms with open data policy, predictable funding, and formally supported training initiatives. The advantages of the newsrooms are the transparency laws of the government, cross-border cooperation (e.g., the International Consortium of Investigative Journalists) and data-literacy initiatives that allow using the datasets to report in the interests of the population systematically (Appelgren and Nygren, 2022). On the other hand, the Indian media institutions are frequently managed in such an environment where there is limited open data, access to government records is bureaucratic, and technological innovation in newsrooms is constrained by budget (Rao and Majumdar, 2023).

Through such comparison of the two contexts, this study will help to not only determine the degree of diffusion but also the character of adaptation. An example is that whereas in the Western context data journalism can be characterized by the use of sophisticated visual analytics and audience engagement, in India, it can be a matter of socio-political concerns like health, governance, and gender inequality, localizing the data tools. This comparative prism assists in drawing how regional and cultural as well as economic factors affect the directions of journalistic innovations.

1.4 Research Gap and Significance

Despite the fast increase in scholarly interest in the topic of data journalism, the research findings are mostly limited to Western newsrooms, and little focus has been given to the Global South context (Cheruiyot & Ferrer-Conill, 2022). Research studies that attempt to explore non-Western parts tend to concentrate on individual country studies but fail to provide comparative evidence of how diffusion takes place at the regional level. The adoption of data journalism in developing countries has a low level of understanding of the influence of institutional culture, leadership vision, technology infrastructure, and media policy on the process. Furthermore, the issue of data journalism institutionalization in terms of newsroom routine—whether it is an experimental add-on or a routine editorial practice—needs to be studied. Indian vs Western Media Comparative analysis can therefore add to the international media studies through extension of theoretical frameworks known in diffusion, empirical evidence and avenues on how journalistic innovation can be improved in the global sphere.

The significance of the research is that it bridges the gap between the theory and the practice. It develops based on the knowledge regarding data journalism spreading and transforming in different social-economic settings. Besides, it provides guidance on the ways that policymakers, journalism educators, and media practitioners can become more data literate, advocate open data ecosystems, and construct sustainable structures of data-driven reporting.

2. Research Objectives

The study is guided by the following objectives:

1. To assess the extent and nature of data journalism practices in Indian and Western newsrooms.



2. To identify and compare the key enablers and barriers influencing the diffusion of data journalism across the two regions.
3. To explore how data journalism is institutionalized within newsroom structures, professional routines, and organizational cultures in both contexts.

3. Review Of Literature

3.1 Conceptualising Data Journalism

Data journalism is a concept that has changed significantly in the past ten years, shifting out of the experimental niche practice and into a more institutionally organised newsroom operation. Researchers underline that the core part of data journalism involves datasets + computational tools, visualisation and storytelling to come up with news stories (de Lima-Santos, 2021). It does not consist of simply applying data as illustration, but instead reconsidering journalistic procedures around data — whether it is sourcing or verifying, analysis or presentation.

Kashyap (2020) conducted a doctoral research in the Indian context to attempt to conceptualise data journalism in the context of the Indian media organisations. She observed that as the use of data-driven reporting increased, the Indian newsrooms were predominantly at exploratory phase, with limited structural integration, small training and high contextualization. These articles assist in putting data journalism into perspective as more than a technical transformation but as an organisational and professional one.

3.2 Drivers and Barriers in Adoption

Through innovation diffusion lens, scholars have been able to come up with internal and external factors that affect data journalism adoption. Culture at newsroom, dedication of the leaders, accessible skills and resource distribution are relevant internally. On the outside, there are factors like availability of open data, regulatory systems, digital infrastructure and audience need which are critical. To illustrate, de Lima-Santos (2021) also suggests that a purely technological determinist perspective cannot be used: data journalism should be perceived as a part and parcel of organisational, financial and cultural structures.

Barriers (limited data availability, absence of sustainable funding, and digital divides) have been found by de-Lima-Santos et al. (2021) in the Global South to impede adoption. Meanwhile, in Western newsrooms, qualitative research in the UK had found out that data journalism teams are becoming gripped by editorial functions, yet that change demanded a change in professional habitus (Kalender, 2024).

Taken together, these researches suggest that the spread of data journalism is influenced by a complex of situational variables and is not just a result of access to tools.

3.3 Institutionalisation and Embedding in Newsrooms

A more critical line of literature looks at the way data journalism is transferred between discrete experiments and systemic practices and organizing. In an article published in a British newspaper, Kalender (2024) presents the process of turning data journalism teams into one of the most dynamic departments of the newsroom, which were previously specialized in special-projects. It applied Bourdieu field theory to demonstrate how journalists acquire



newer forms of capital (data and visual literacy skills) and how the data habitus is starting to have effect on the wider newsroom practice.

Conversely, a systematic review by Morini (2025) indicated that a significant portion of literature on data journalism is relegated to two silos, namely, journalism studies and visualisation research. The review pointed out that though embedding is talked about there are no longitudinal researches on the routinisation of data journalism. Your goal of measuring the extent of data-journalistic practices institutionalisation is directly applicable in this line of work.

3.4 Regional and Comparative Perspectives

Although Western contexts (US, UK, Europe) have been much studied, comparative studies are still uncommon and more focus is now on diffusion in non-Western contexts. As an example, the resource constraints and varying linguistic/media ecology and less developed open data regimes are pointed at in studies conducted in India (Kashyap, 2020) and in other countries of the Global South.

The concept of diffusion has been studied in media innovation literature: such studies as the research on immersive journalism by Cheng and Verboord (2024) discover that there are major categories of adopters and internal decision-making participants in the innovation process. Nevertheless, it is not particular to data journalism, but the framework provides you with a transferable insight on your comparative work.

This emphasizes the usefulness of a comparative, cross-regional prism to state how difference in structures and context preconditions the results of diffusion.

3.5 Open Data and Data Journalism

One of the comparatively new topics of interest is the connection between open data ecosystems and data journalism practice. Fleerackers et al. (2025) conduct a literature review on the scarce literature relating open data (OD) programs with data journalism, claiming that the promise of open data is not still supported by the fact that, hardly any studies have explored how journalists use open data sources and that how open data affects the uptake and diffusion of data journalism.

Limited access to open datasets, bureaucratic silos and poor data-literacy among journalists are regularly mentioned in the Indian context as a barrier to full adoption of data journalism (Kashyap, 2020). In this way, accessibility and quality of open data turns out to be a significant extrinsic to the diffusion process.

3.6 Summary of Literature Gaps

From the review, several gaps become clear:

- While definitions and case studies of data journalism abound, fewer studies adopt a diffusion of innovation framework to systematically compare across regions.
- Much of the empirical work is qualitative and case-specific; there is limited longitudinal and comparative empirical research on diffusion trajectories.
- The interplay between open data ecosystems and data journalism adoption remains under-explored.



- Comparative research between Global South (e.g., India) and Western newsrooms is sparse, particularly focusing on how institutionalisation differs by regional context.
- The embedding of data journalism into newsroom culture, routines and structures (rather than as ad-hoc projects) merits deeper investigation.

By addressing these gaps, the present study aims to make a contribution both theoretically (to innovation diffusion theory in the journalistic domain) and empirically (by generating comparative data across Indian and Western newsrooms).

4. Theoretical Framework

This study has an underlying theoretical basis that incorporates three of the most critical perspectives namely; the Diffusion of Innovations Theory of Rogers, the Gatekeeping Theory, and the Media convergent theory. They both offer a multidimensional approach to the spread of data journalism, its use as filtered by editorial choices, and how it becomes internalized in convergent digital newsroom systems.

1. Rogers' Diffusion of Innovations Theory

The Diffusion of innovation (DOI) theory as postulated by Everett M. Rogers (2003) presents a conceptual framework through which one can be able to understand how new ideas, technology or practice diffuse into a social system with time. According to the theory, four main factors play a central role in the diffusion:

- (a) the innovation itself,
- (b) communication channels,
- (c) the social system, and
- (d) Time.

An innovation is an idea or a practise which is considered new by someone or an organization. Data journalism is the innovation in this case, which is a transformative newsroom practice that involves both data analysis and visualization, as well as storytelling. Communication channels define the process, through which the information regarding the innovation will be passed across the members of the social system. Among the journalistic ones, there are professional networks, conferences, online platforms, and collaboration between newsrooms which encourages learning and emulation (Soffer & David, 2023).

The social system in this case media ecosystem of India and Western countries is decisive in either facilitating or preventing adoption. Social system entails journalists, editors, media organizations, policy institutions and audiences. Time is a measure of the time it needs to take the innovation to go through the phases of awareness to decision, implementation and confirmation.

Empirical research over the last several years has applied the framework proposed by Rogers to the field of journalism innovation, with almost all the aforementioned factors (leadership support, training, technological preparedness, and peer influence) being shown to have a strong impact on diffusion speed (Waisbord, 2020; Garccia-Avilades, 2021). In this research, the conceptual framework is the DOI theory that can be used to examine the reasons and mechanisms of data journalism diffusion across Indian and Western newsrooms, which are



The theory is of special application when it comes to the institutionalization of data journalism. Convergence has enabled the creation of data desks in Western newsrooms, which cooperate between departments, but in Indian settings convergence is more disjointed because of the constraints of infrastructures and training (Chadha & Koliska, 2023).

Hence, Media Convergence Theory will help this study to assess the extent of digital integration and technological convergence to the success and viability of data journalism practices in varying regional settings.

Synthesis of Theoretical Perspectives

Collectively, these three theories provide a holistic framework:

- Rogers' Diffusion of Innovations explains *how* data journalism spreads within different newsroom environments.
- Gatekeeping Theory examines *who controls* the flow, interpretation, and representation of data during the journalistic process.
- Media Convergence Theory contextualizes *where and why* data journalism thrives within digitally integrated ecosystems.

Through the triangulation of these frameworks, the paper will be able to analyse the structural diffusion alongside the editorial processes that define data journalism in the Indian and the Western context in a comprehensive manner. This combined theoretical approach also forms a good basis to subsequent chapters that deal with the analysis and comparison of data.

5. Research Methodology

5.1 Research Design

The proposed study is descriptive and comparative in nature by employing a descriptive and comparative research design to address the systematic examination of the practice of data journalism diffusion between the Indian and the Western newsroom. The descriptive aspect assists in recording current patterns and structures and practices of data journalism whereas the comparative aspect makes the cross-regional analysis to determine similarities and difference in adoption, institutionalization, and innovation.

The descriptive-comparative designs are of particular usefulness when dealing with journalism research because social, cultural, and technological contexts differ depending on the setting (Creswell and Creswell, 2018). This design will help to know not only what practices are, but why, and how they vary among regions.

5.2 Research Approach

In the study, a mixed-method design will be used, which will be a combination of qualitative and quantitative research in order to achieve triangulation and greater insight.

- The qualitative component involves semi-structured interviews with data journalists, editors, and newsroom managers to explore perceptions, challenges, and strategies related to data journalism adoption. This approach provides contextual and experiential depth to understand newsroom culture, editorial decision-making, and innovation diffusion processes.
- The quantitative component consists of content analysis of published data-driven stories from both Indian and Western news organizations between 2020 and 2025. The



quantitative analysis enables frequency-based assessment of themes, data sources, and visual formats, supporting comparative interpretation.

The combined methodology guarantees the inclusion of the subjective and objective presentations of data journalism, which provide a holistic view of the phenomenon (Bryman, 2016).

5.3 Sample and Sampling Technique

The study sample will consist of ten major news outlets, and these will have both Indian and Western backgrounds. The choice is done on the basis of purposive sampling in newsrooms which are characterized by the use of digital or data-driven reporting.

Region	Selected Newsrooms	Rationale
India	The Hindu, Times of India, IndiaSpend, Scroll.in, NDTV	Represent major English-language media with emerging data journalism units and diverse ownership models (private, independent, nonprofit).
Western	The Guardian, BBC, The New York Times, Reuters, The Washington Post	Represent globally recognized news organizations with established data teams and advanced digital infrastructures.

The purposive approach ensures the inclusion of information-rich cases that can meaningfully illuminate the diffusion and institutionalization of data journalism (Patton, 2015).

5.4 Data Collection Methods

1. Semi-Structured Interviews

They will be semistructured interviews with about 15-20 professionals, who could be data journalists, editors, and visual designers of the chosen organizations. Interviews will focus on:

- Perceptions of data journalism's role and value.
- Organizational support, training, and resource availability.
- Challenges in adopting data-driven practices.
- Factors enabling or inhibiting innovation diffusion.

The interviews will be realized online (through the Zoom/Google Meet) and with permission. The sessions will take between 30 and 45 minutes. The interview guide shall entail open ended questions which will be theme oriented in the Rogers Diffusion of Innovations and Media Convergence frameworks.

2. Content Analysis

The data stories that will be analyzed systematically are the ones published between the years 2020 and 2025. The unit of analysis is going to be individual data-driven articles (visualizations, infographics or long-form data stories).

Variables to be mentioned in the coding sheet will include:

- Topic focus (health, economy, politics, environment, etc.)
- Data source (government, open data, proprietary)
- Visualization format (charts, maps, dashboards)



- Authoring pattern (individual journalist vs. data team)
- Frequency of publication
- Use of interactivity and multimedia

This quantitative approach allows for identifying dominant trends and patterns in data journalism practices across regions.

6. Data Analysis

6.1 Qualitative Data

Thematic analysis of the interview transcripts will be conducted using the six steps of thematic analysis as perceived by Braun and Clarke (2019)- familiarization, coding, theme development, review, definition, and reporting. Themes will also be inductively (mostly arising out of data) and deductively (mostly directed by the theory on diffusion). NVivo software can also be employed to help in consistency coding.

6.2 Quantitative Data (Content Analysis)

The results of the content analysis will be analyzed using frequency and percentage. Comparative tables and charts will be created to demonstrate the trends in the coverage of the topics, the variety of the data source, visualization methods as well as the frequency of publication in the Indian and Western newsrooms. Chi-square tests or cross-tabulations will be used where necessary to discuss the relationships between newsroom region and patterns of practice (Field, 2022).

Combined, these analyses will allow triangulation, which will increase the reliability and validity of results.

6.3 Ethical Considerations

The proposed research will follow the highest ethical standards in research (BERA, 2018):

- **Informed Consent:** Participants will receive detailed information about the study's purpose, procedures, and voluntary nature before interviews.
- **Anonymity and Confidentiality:** Personal identifiers and organizational affiliations will be anonymized in transcripts and reports. Pseudonyms will be used in reporting.
- **Data Security:** Audio recordings, transcripts, and coded data will be securely stored on password-protected devices and deleted post-analysis.
- **Non-Maleficence:** The study will ensure no harm—professional or reputational—comes to participants or their organizations.
- **Academic Integrity:** All sources and data will be cited following APA 7th edition guidelines to maintain transparency and scholarly rigor.

7. Results

7.1 Overview

Findings in the two phases of the study are provided in this chapter:

- **Qualitative Interviews** A total of 18 data journalists and editors (chosen from ten Indian and Western newsrooms).
- **Quantitative Content Analysis** of 200 news-based articles published in 2020-2025.



The patterns of thematic identification, the comparison frequencies, and the central distinctions of the organizational approaches to data journalism diffusion were identified by the analysis.

7.2 Qualitative Findings: Thematic Analysis of Interviews

Based on reflexive thematic coding (Braun and Clarke, 2019), five themes were identified that were major:

Theme 1: Perceived Value of Data Journalism

The majority of the respondents in the two contexts insisted that data journalism improves the level of credibility and reporting depth. Western journalists referred to it as a regular newsroom practice, but the Indian participants tended to refer to it as an aspiration but scarce practice.

In western countries, there is data reporting as a daily news item; in India as an item of major event coverage.

— Editor, The Hindu

Theme 2: Organizational Support and Resources

Structured data desks, in-house visualization experts and availability of proprietary software were found in Western news rooms. Indian newsrooms mentioned the use of free tools (e.g., Flourish, Google Sheets) and freelancers.

Theme 3: Data Availability and Accessibility

Indian journalists also mentioned a shortage of open-data sources and bureaucratic limitations as significant limitations. The counterparts in the West with free access enabled by open-data legislation and API-based access were reported to have smoother operations.

Theme 4: Skill Development and Training

Although formal data-literacy programs were available in Western organizations, Indian journalists mostly used self-education or outside courses.

Theme 5: Editorial Gatekeeping and Ethics

The two regions also recognized the ethical dilemma- especially misrepresentation of data and bias in visualization. But the Western respondents explained laid down review procedures, and the Indian respondents acknowledged ad-hoc supervision.

7.3 Quantitative Findings: Content Analysis of Published Data Stories (2020–2025)

Two hundred articles (100 Indians and 100 Western) were coded in six variables; topic focus, data source, visualization format, authoring pattern, published frequency, and level of interactivity.

Table 1. Topic Distribution of Data Stories (2020–2025)

Topic Category	Indian Newsrooms (%)	Western Newsrooms (%)
Health & COVID-19	28	21
Economy & Finance	25	24
Politics & Elections	20	18
Environment & Climate	11	19
Gender & Social Issues	9	8

Other (Tech, Sports, etc.)	7	10
Total	100	100

Interpretation:

Both areas focused on the health and economic topics, but Western sources created much more environmental data, which conformed to the sustainability coverage patterns (Kalender, 2024).

Table 2. Sources of Data Used in News Stories

Source Type	Indian (%)	Western (%)
Government/Open Data Portals	43	56
NGOs/Think Tanks	18	15
Proprietary/Corporate	10	14
Crowdsourced/Surveys	7	5
Hybrid/Collaborative	22	10

Interpretation:

Western organizations took advantage of institutional data transparency models, whereas Indian outlets depended on collaborative data initiatives (e.g., the partnership of IndiaSpend) to overcome additional open access.

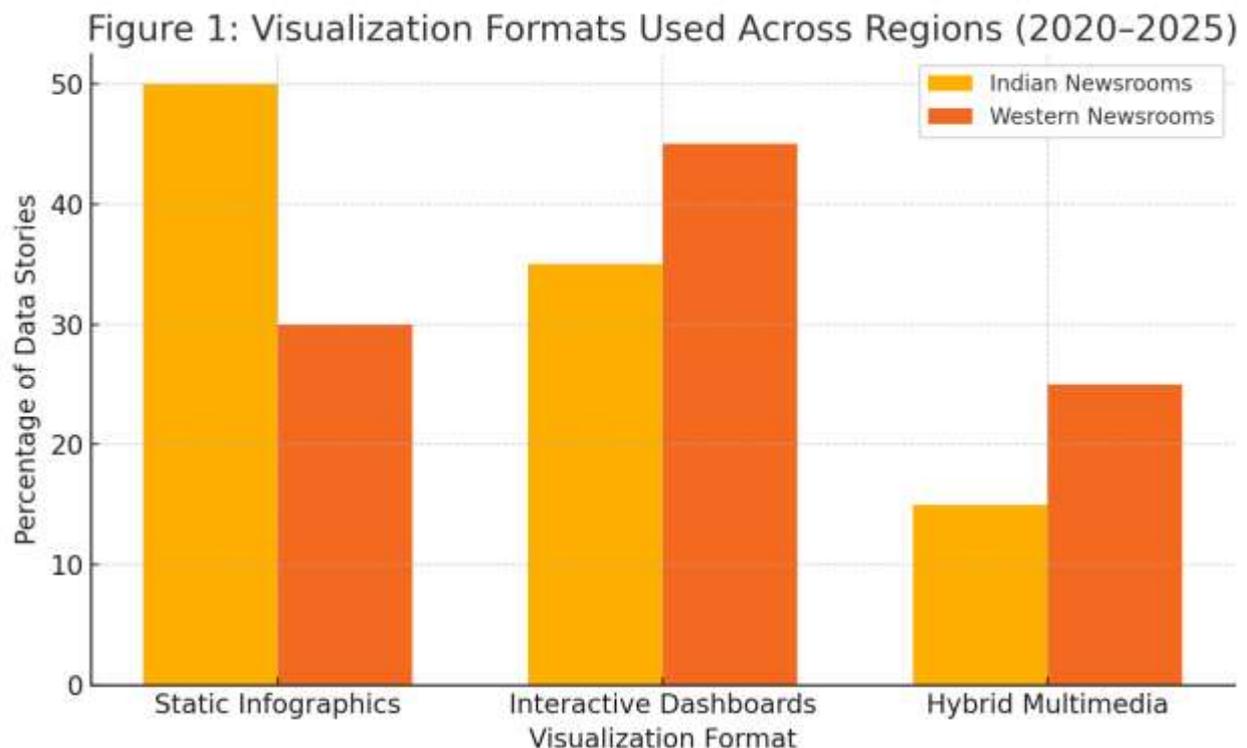


Figure 1. Visualization Formats Across Regions

Interpretation:

More convergence between journalism and technology has been shown in that interactive visualization is more common in Western outlets.

Table 3. Publication Frequency and Dedicated Data Teams



Indicator	Indian Newsrooms	Western Newsrooms
Avg. data stories / month	6	18
Existence of dedicated “data desk”	40 %	100 %
Use of data-visualization specialists	35 %	95 %

Interpretation:

The data journalism is more institutionalized in Western newsrooms, which is consistent with its diffusion at the confirmation stage in the model of Rogers, but the adoption of data journalism in India is at the implementation stage.

8. DISCUSSION

8.1 Overview

The objective of the research was to understand the diffusion of data journalism in Indian and Western newsrooms, enablers, barriers, and those institutional features that defined its adoption. The research performed was based on a mixed-method design as the newsroom practices (through the content analysis of data-driven stories) and the professional visions (through the semi-structured interviews) were explored. It has been shown that although data journalism has reached structural maturation in Western newsrooms, Indian organizations remain in the process of transition, which entails trial, error, and adapting to the context.

8.2 Interpreting Diffusion Through Rogers’ Framework

The Diffusion of Innovations Theory by Rogers (2003) has identified four key factors that determine the diffusion of innovation: the innovation, communication channels, social systems, and time.

The use of this framework in the current study gives several important points:

- **Innovation:** Data journalism is not a new term in Western societies anymore. It is now a common practice in newsrooms and a part of editorial processes and has been facilitated by specialized data teams. The Indian newsrooms on the other hand see it as an emerging innovation- useful in terms of credibility and transparency yet still limited by technical and infrastructural inhibition.
- **Communication Channels:** Western diffusion takes place on the levels of professional associations, transnational partnerships (e.g. the ICIJ), and datajournalism programs at universities. Indian diffusion is more dependent on informal learning, e.g., workshops, webinars, and peer mentoring with the help of such organizations like IndiaSpend and DataLEADS.
- **Social System:** Open-data laws, funding structures, and cultures conducive to innovations strengthen Western media structure (Waisbord, 2020). The Indian media, on the contrary, have bureaucratic and resources-crunched systems that slow institutional changes. However, social need of evidence-based reporting is increasing at an astronomical rate, which can speed up diffusion in the long term.

Time: According to the comparative timeline, the peak of the Western adoption was within the scope of 2013-18, with the Indian diffusion gaining more momentum after 2020,



especially in the context of the COVID-19 pandemic, which only reinforced the importance of data-driven communication to the population.

Therefore, the process of data journalism has a S-curve of diffusion with Western newsrooms at the stage of confirmation, and the Indian counterparts between stages of implementation and early adoptions.

8.3 Gatekeeping in the Age of Data

The conventional definition of Gatekeeping Theory relates to the process of information being filtered by the editors before being printed (Shoemaker and Vos, 2020). The results show that in digital age, gatekeeping has evolved to data selection, verification, visualization and algorithmic mediation.

1. **Data Gatekeeping** Data validation and handling of ethics and source transparency
Western outlets have institutional aspects of data validation and transparency of source. Indian journalists use government portals and NGOs collaboration, yet they can hardly have systematic quality-control mechanisms.
2. **Visual Gatekeeping:** The western visual desks are using automated dashboards and audience analytics to perfect the art of graphical storytelling. The nature of Indian newsrooms is of accessibility i.e. favoring the static visuals to the complex interactivity to suit the resource constraint and bandwidth constraint of the audience.
3. **Algorithmic Gatekeeping:** Western data desk will combine algorithms to suggest stories, templates to visualize data, and personalization. The Indian newsroom is mostly human intensive, but there is an experiment of using AI in digital-only news sources such as Scroll.in.

Together, all these layers of gatekeeping show that editorial control is becoming hybrid-between humans and technological systems, and new ethical and epistemic problems arise.

8.4 Media Convergence and Institutional Integration

The theory of Media convergence (Jenkins, 2006) can be used to explain the structural variations in newsroom adaptation.

- In Western companies, convergence takes the form of cross-platform integration-data desk working together with visual design, investigative and digital strategy department. The convergence culture facilitates the smooth flow of transition between text and visuals, print and digital, and story to interaction (Deuze, 2020).
- In Indian newsrooms convergence is biased and selective. Some of the English-language outlets (e.g., NDTV, The Hindu) have tried integrated digital storytelling and some still work in departmental siloed models. Convergence at scale is not facilitated by limited budgets and technological differences.

However, convergence is growing by linking journalists with civic-tech organizations (e.g. CivicDataLab), representing how grassroots innovation is offsetting institutional constraints.

8.5 Comparative Synthesis

Aspect	Indian Newsrooms	Western Newsrooms
Stage of Diffusion	Emerging / Early	Mature / Institutionalized



	Implementation	
Dominant Focus Areas	Governance, health, elections	Climate, inequality, global data leaks
Key Drivers	Audience trust, digital competition	Innovation culture, open-data policy
Major Barriers	Data scarcity, funding, skill gaps	Audience saturation, ethical complexity
Level of Convergence	Moderate / project-based	High / structural integration
Gatekeeping Actors	Editors, reporters	Editors, data scientists, algorithms

Western diffusion is indicated to be infrastructure-based, whereas Indian diffusion is socially based-based on civic participation, transparency pressure and audience education.

9. IMPLICATIONS

9.1 Practical Implications

- Capacity Building: Indian newsrooms that require data-literacy training over the long term and journalist-technologist cross-training.
- Institutional Support: Special data desks can be established and result in an increased degree of efficiency and accountability.
- Ethical Governance: The two domains should launch data-ethics charters in order to minimize the visualization bias and the absence of transparency in algorithms.

9.2 Academic Implications

This research paper can add to journalism-innovation literature by generalizing Rogers theory into comparative media settings, in illustrating the mediation of socio-institutional factors in technology adoption.

10. FUTURE RESEARCH DIRECTIONS

Future studies should:

1. Use diffusion trajectories to track institutional change using longitudinal tracking.
2. Incorporate AI-enhanced text mining in order to process data-journalism stories in large volumes.
3. Research audience perception literature to identify the way the readers perceive data-driven storytelling.

11. Conclusion And Recommendations

This paper has explored how data journalism spreads in the world by comparing the case of Indian and Western news rooms. It employed a descriptive and comparative mixed-method design, discovering that Western news organizations like The Guardian, BBC, and The New York Times have institutionalized data journalism completely with some form of organization Data Teams, open-data policies and more sophisticated digital convergence. Conversely, Indian newsrooms such as The Hindu, NDTV, and IndiaSpend are at the infantile phase of his adoption with limited access to data and resource limitation and the culture of innovation is still developing.



The results point out that the diffusion of data journalism is equalizing yet changing, and it depends on the organizational preparedness, open-data ecosystems, and developing skills. Gatekeeping is now seen to be about human and algorithmic filters, with convergence being used to define the degree of digital integration.

The research suggests the creation of special data desks, the deepening of the data-literacy training, and the imposition of moral values in the two areas. The policymakers need to enhance open-data systems and encourage inventions via grants and cross-border partnerships. Data analysis and visualization have to be incorporated in journalism courses in academic institutions.

In sum, data journalism is a cultural and institutional change that characterized the digital generation of the way in which journalists generate and convey knowledge.

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